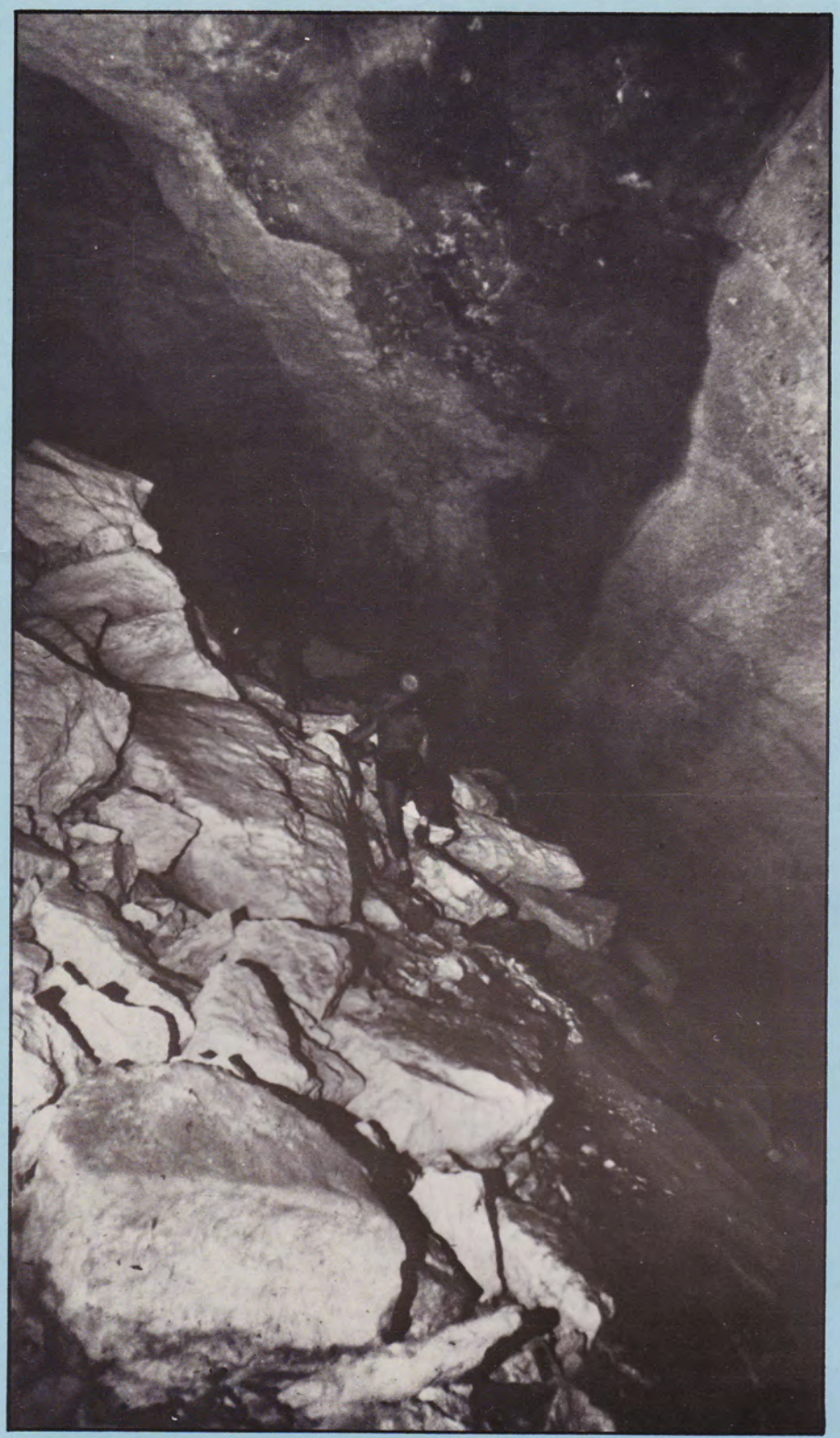
Cocklebiddy Cave Dive
~ The Worlds Longest



by Peter Rogers.

Between August and October 1983, the tranquility of Cocklebiddy cave, on the usually quiet Nullabor Plain, was disturbed, first by French and then by Australian cave divers. The reason for the intrusion was simple, a 4.3 km of explored passageway, with the tunnel still heading in a straight line due north, Cocklebiddy rightfully lay claim to the title of the world's longest cave dive. The French team of five, led by the renown cave diving brothers Francis and Eric LeGuen, were the first foreign group to journey to this remote corner of Australia, lured by the unique size and challenge of Cocklebiddy.

The French used different equipment and techniques to those employed by the Australians during their time at Cocklebiddy. These included underwater scooters, dry suits, high pressure fibreglass scuba tanks and a solo diver for each of the final push dives. Using these methods the highly successful French group added a further 1.5 km to the length of Cocklebiddy during their six week stay.

In addition to this large advance the French also returned with the news that they had reached the end of Cocklebiddy, as Francis LeGuen had been forced to turn round because the passageway had become too narrow for him to continue down, despite him still having plenty of air left. This news subdued the Australian expedition, arriving at Cocklebiddy less than three weeks after the departure of the French, with 12 months planning and training behind them.

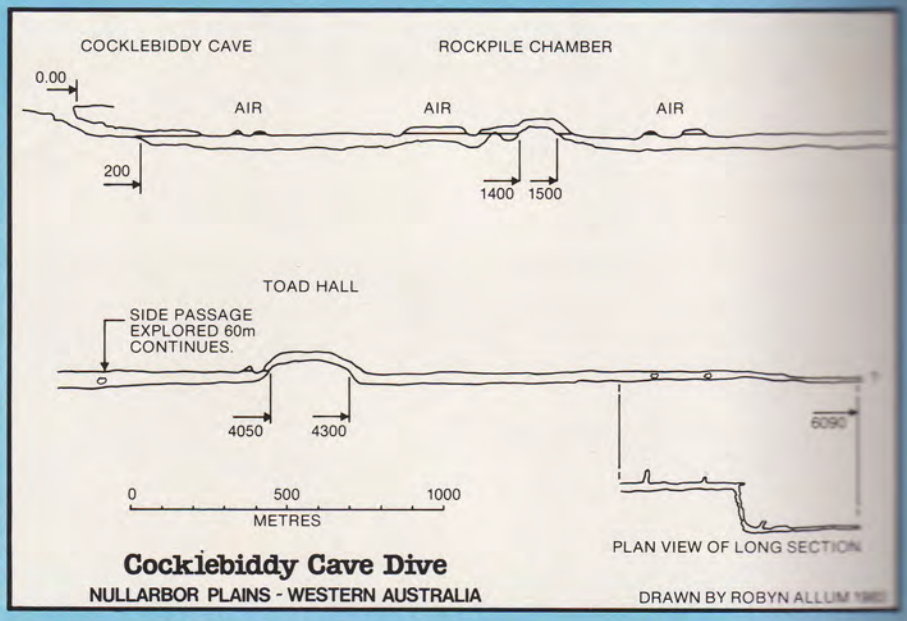
The Australian dive plan was based on a far greater man power availability than the French, with 14 experienced cave divers backing up the 3 push divers. Some 86 scuba tanks were used during the dive, the majority of these being transported 14 at a time on 4 specially constructed aluminium underwater sleds. The Australians also worked to a shorter time schedule than the French, spending less than 7 days at the cave. ▶

The team, from left to right standing: Paul Aarbon, George Navas, Robert Galliot, Chris Brown, Dennis Thamm, Robyn Allum, Peter Stace, Brendon Griffin, Simon Jones, Phil Prust, Charlie Tong, Peter Hudson, Graham Morrison, Stephen Eberhard, Peter Brown (the local farmer), Darren Lill, Lester German. Seated: Ron Allum, Hugh Morrison and Peter Rogers.

The team, including divers from Western Australia, South Australia, Victoria and Tasmania, gathered (along with a huge pile of equipment) on the flat Nullabor Plain around the entrance to Cocklebiddy on Saturday, 8th October. After a night's sleep to recover from car journies of up to 2,400 km, the hard work began in earnest. On the Sunday the whole team worked non stop preparing equipment and carrying it to the lake's edge.

On the Monday all 4 underwater sleds were loaded with tanks and these were taken 1.2 km along the first submerged sump of Cocklebiddy to the first rockpile. All 56 tanks that travelled out on the Monday were carted over the rockpile, as were 3 of the 4 sleds and 4 of the 6 dry equipment containers. The dry storage containers for transporting equipment (eg: sleeping bags, clothes, communication gear, etc.) on the dive to Toad Hall, were made up from 1.7 m lengths of 15 cm diameter PVC sewage pipe. The ends were sealed with screw caps fitted with o-rings. Unfortunately, 2 of the 6 containers leaked on the first leg of the journey out and had to be brought back to the surface so that the equipment in them could be dried out. This was done on the Tuesday which was used as a rest day for people to recuperate before the main dive. As it turned out the whole day was required to fill tanks from the previous days diving. These were filled at the lake's entrance thanks to 200 metres of 0.5 cm diameter copper tubing running from a compressor on the surface, down through the cave to the water's edge.

The main push dive started on Wednesday, 12th October. Three backup divers took the fourth sled through to the rockpile to bring up to



60 the number of tanks staged ready to go on to Toad Hall. The last 2 dry storage containers were also taken to the rockpile. The six divers who were to go through Toad Hall left the campsite about 0930 and started the first leg of the dive at about 1030. Using single tanks, the six spent an hour on the journey to the first rockpile, and after some time spent on final organization of sleds left the first rockpile at 1430. For the dive to Toad Hall each diver wore three full tanks on his back and each pair of divers pushed a sled with 14 tanks on it. The sump between the rockpile and Toad Hall is 2½ km long, nearly all of which is submerged. Divers breathed air from tanks on the sleds for most of this journey, leaving the air on their backs for emergency use should it be necessary to leave the sleds. An uneventful 2½ hours later the party arrived at Toad Hall.

Although the sleds were unloaded that evening in Toad Hall, none of the equipment was carried through to the far side of the chamber because of the necessity to avoid strenuous activity after a decompression dive. While the sleds were being unloaded Ron Allum set up the communications equipment for the first scheduled attempt to make contact with the surface. The radio directional finder (RDF) carried into Toad Hall gave out a signal which could be picked up within a 160 metre diameter circle on the surface. The RDF signal was turned on for 25 minutes every 2 hours while the surface party attempted to locate the correct spot. Successful communications were established after the second transmission period, despite

One of the four specially constructed underwater sleds being lowered into Cocklebiddy cave.

interference from a nearby electrical storm. After a meal of soup, bread, stew, fruit cake and tea, the six divers in Toad Hall slept from 2100 through to 0600 on Thursday morning.

After a light breakfast all six set to work carting a sled, 23 full scuba tanks and three sets of diving gear the length of Toad Hall. Accurate measurements using the RDF equipment proved Toad Hall to be 200 metres long on a horizontal path; the ruggedness of the terrain resulted in the diving party guestimating the length as 400 metres!

The three push divers, Morrison, Allum and Rogers, left Toad Hall on the final leg of the dive at 1210 on

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Thursday, 14th October, pushing a sled with 14 tanks and wearing a set of triples each. The first kilometre of the dive passed uneventfully, the tunnel remained at about 6 metres by 6 metres in cross-section, with the roof at water depth of between 12 and 18 metres. A thousand metres past Toad Hall the main tunnel veered slightly to the right and a small passageway 2 metres high by 4 metres wide forked to the left. The sled was 'parked' in the main passageway and the 3 divers continued the 50 metres to the rockpile that choked off the end of the smaller tunnel. In earlier conversations Francis LeGuen had raised the possibility that this small tunnel might lead on to a new main passageway leading north, if a way round the rockpile could be found. Even though Morrison removed his triple set and wore a single cylinder from the sled, no way past the end of the side tunnel was found, and the three despondent push divers returned to the sled in the main tunnel and continued on, following the thin white French guideline.

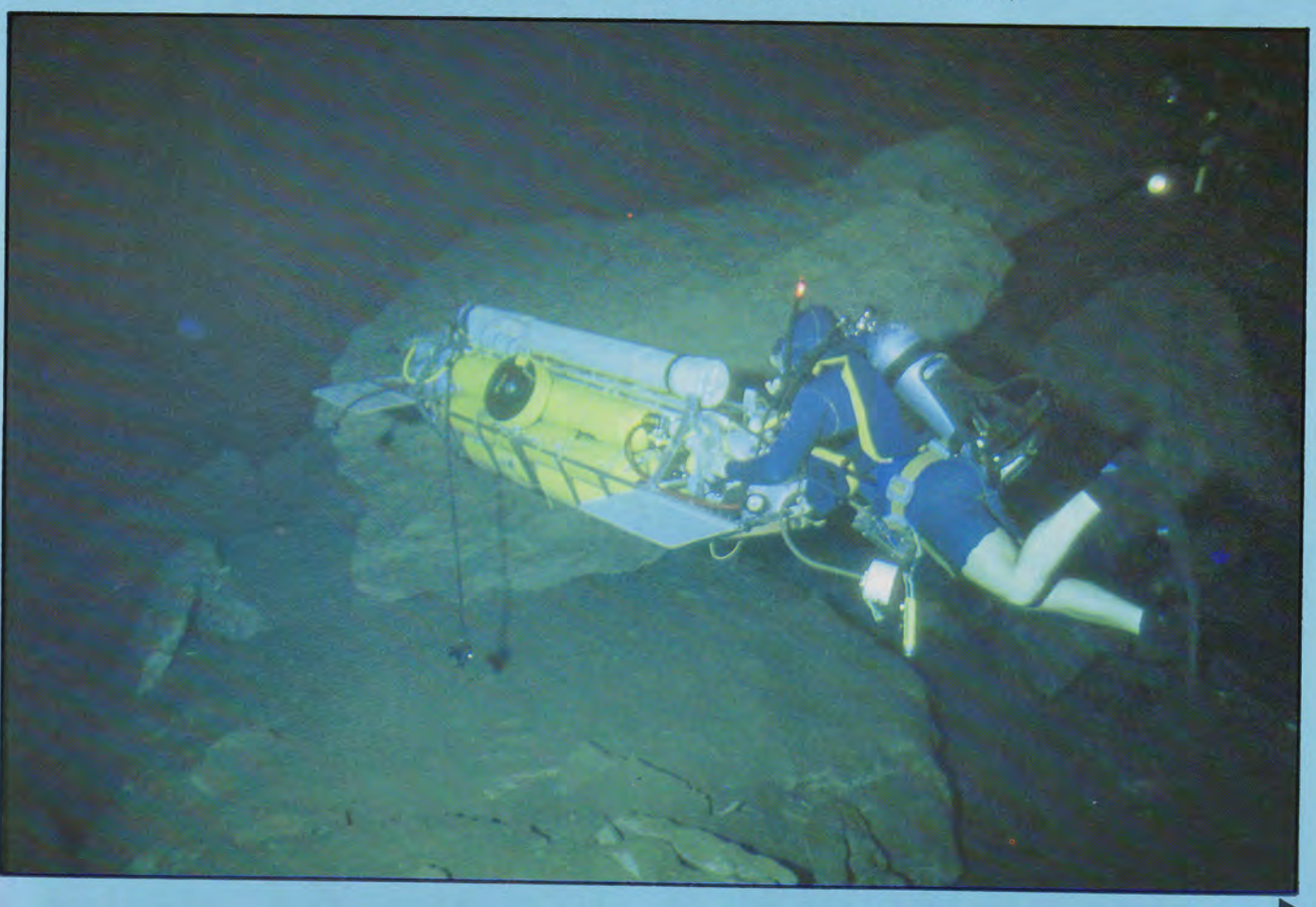
1,350 metres past Toad Hall the main tunnel began to narrow, preventing easy manoeuvering of the sled. At this point the sled was left, and the three divers continued, breathing off the air supply on their backs. Morrison also took an extra single tank to use for exploring narrow passageways. At 1400 metres the main tunnel, as such, ended and two smaller tunnels forked off. The French expedition reported that the left fork ended after 50 metres, while the right hand fork had been pushed 150 metres. The three Australian divers continued along the right hand fork; a narrow tunnel varying from 2 metres by 3 metres down to less than 1 metre by 1 metre in cross-section. Seventy-five metres past the fork, a narrow construction in the tunnel, and a knot in the French line, indicated the point reached by Eric LeGuen on the first French push dive. At this point Morrison dropped his triple set and continued just using the single tank. Allum and Rogers continued wearing their triples.

A further 75 metres on, a total of 1550 metres past Toad Hall, a narrow vertical slot in the passageway, and the French guideline tied to a rock on the tunnel floor, heralded the end of the explored parts of Cocklebiddy cave. After a quick photograph in the rapidly gathering silt, Morrison removed his single cylinder and pushing it in front of him, disappeared through the slot. The tunnel continued in much the same form as the previous 150 metres, varying from about 2 metres by 2 metres in cross-section down to constrictions that forced Morrison to take his tank off in order for him to fit through. In all Morrison unreeled a further 280 metres of guideline before diminishing air supplies forced him to start his return. At the point where he turned around the tunnel was reasonably wide and gave every indication of continuing as it had done for the previous 280 metres.

Meanwhile, Allum and Rogers spent a long 22 minutes in a narrow muddy section of Cocklebiddy during which time activities were limited to noting that the depth was 18 metres and the water temperature 25° C.

The return journey to Toad Hall was steady and uneventful. The divers did not explore the left hand fork of the tunnel, but did wind up most of the French guideline, leaving their own yellow 3 mm floating

Hugh Morrison pushes a sled with 14 tanks and a dry storage tube along the first sump in Cocklebiddy.



polyethylene line in its place. The 3 push divers returned to Toad Hall at 1640, 4½ hours after leaving, and having emptied 14 out of their 23 air tanks. Morrison, Allum and Rogers spent the next few hours resting before helping Graham Morrison, Jones and Prust carry the last of the equipment back from the far side of Toad Hall. As a result of the marvels of modern communication the success of the dive was reported in the Adelaide Advertiser on Friday morning, while the divers were still in Toad Hall.

After resting from midnight to 0600 the six divers started loading the 3 sleds for the 2½ km journey back to the first rockpile. At this stage it became necessary to load several large rocks onto each sled to maintain neutral buoyancy, as even complete flooding of both buoyancy tanks failed to fully compensate for the weight loss resulting from the compressed air being emptied from many of the tanks. As a result of these complications in sled loading, the six divers did not arrive at the first rockpile until 1200, 2½ hours later than they had predicted during their last communications contact with the surface. It was with some relief then, that the six divers finally arrived at the rockpile to find 10 members of the team waiting to assist in the carrying of equipment.

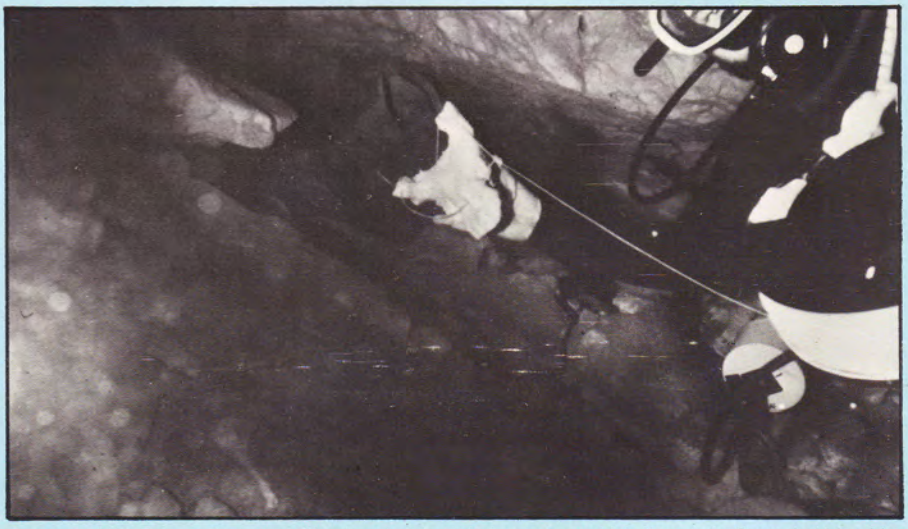
All 16 divers formed a human chain over the first rockpile and within 3½ hours 3 sleds had been dismantled and together with 60 scuba tanks and sundry other equipment passed over the rockpile and reconstructed on the far side.

The final dive of the week saw the full diving team pull all the push dive equipment out in one hit, arriving back at the main entrance lake at 1600 on the Friday afternoon. Most divers were out of the cave by 1630 giving a total time underground for the six push divers of 55 hours.

In a major effort on Saturday morning, that included Peter Brown the owner of Arrubiddy station (whose property now includes 2 km of Cocklebiddy cave), the majority of the equipment was brought up from the lakeside to the surface. By the Saturday night the team had split up for their respective corners of Australia and Cocklebiddy cave could again look forward to a lengthy period of peace.

The change in form of Cocklebiddy, from a large tunnel to a narrow passage with several tight constrictions, severely limits future exploration using current sports diving technology. What is now required is an air supply of great enough duration to allow extensive further exploration and yet small enough and reliable enough to be used with confidence in passage-ways barely wider than a diver and over 6 km into a submerged cave. Despite the international attention paid to it during 1983, Cocklebiddy still remains the unconquered Grand Father of world cave diving.

Three fully laden sleds and six divers resting against the roof of Cocklebiddy one kilometre into the second sump.



The end of the French line! Hugh Morrison holds aloft the rock to which Francis LeGuen tied his white guideline before turning round. The silt is already starting to stir up in this narrow section of Cocklebiddy. Hugh carried on from this point to lay another 280 metres of guideline before turning back.

A willing team of helpers carries diving equipment back out over the first rockpile after the push dive.

Footnote: A number of groups sponsored the 1983 Australian Cocklebiddy expedition with materials or money.

These include:
Perth Diving Academy
Adelaide Skin Diving Centre
Menzals Plastic Traders
ANI Austral
Union Carbide Pty. Ltd.