

Solo Cavediving: a little counter-propaganda.

(Or, Buddies can be Liabilities)

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In this short essay we attempt to counteract a lot of negative propaganda about solo diving and detail some of the ways it can be pleasanter and safer than with a buddy. All the points we wish to make are illustrated either by personal anecdote, or by reference to the unfortunately long list of diving accidents - i.e. fatalities - or near-accidents. This is specifically about cavediving, but some of what's said applies to diving generally.

We begin with the negative but necessary task of debunking the idea that having a buddy makes you incomparably safer than diving solo. Various examples are given where the buddy makes your life seriously more dangerous. Some of these were fatal when they occurred in real life. Other examples are given where your life is not immediately threatened, but nonetheless the buddy "needs watching".

After that, we give a more positive account of the sheer joy and pleasure of a good solo dive - provided that you realise at all times that "the price of safety is eternal vigilance".

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Buddy induced fatalities,1: the herd instinct.

One of the problems with buddy diving is that humans are herd animals who feel much safer with a buddy around. When cavediving, the consequent lack of attention to detail can cost people their lives. Two examples.

Example 1.1. Little River, ca. a year ago.

Two divers trained to intro level entered the spring with scooters that they weren't trained to use. They went a huge distance back. Then one of them lost control and hit a mudbank with his scooter prop. The resulting huge cloud of mud had nowhere to go so visibility was destroyed with a completeness you'd never get in open water. The buddy then panicked and exited the cave, taking all reels with him. The victim, it seems, kept on trying to use his scooter to get out in the blackness: at any rate, Little River ran pitch dark for many hours after the victim must have died.

- Question 1. If either diver had ben solo, would he have been so crazily overconfident? Would he not have limited his dive to somewhere closer to his level of ability and training?
- Question 2. If you had to fight your way out of a cave with zero visibility, what would you think of a buddy who removed all the reels so you no longer had a continuous guideline to the surface?
- Question 3. What do you think of a buddy who exits without you at the first sign of trouble?
- Question 4. Don't you think that maybe those extra butterflies in your stomach when solo are WORTH something? Maybe, worth MORE than the kind of buddy described here?

Example 1.2. Sak Actun, Mexico, circa 1987.

A group of no less than eight divers, split into 2 teams of 4, entered the system thinking they would do the Cuzan Nah circuit. Due to an error in navigation Team 2 ended up in the Paso de Lagarta, which is not a circuit and does not lead to air. Not wanting to appear wimpish in front of their buddies, none of the divers called thirds. When they eventually turned around they were below halves. In the ensuing desperate scramble for the exit, they were extremely lucky to lose only one life out of the four that were on the line (a spectacular rescue was achieved by the leader of Team 1, who went to look for his overdue comrades and found one of them desperately sucking air from a pocket in the cave ceiling. Meanwhile the two other eventual survivors were air sharing towards the exit, and ran out of air during the final ascent to the surface).

- Q1. You don't like looking cowardly in front of your friends, do you? You wouldn't want to spoil their pleasure by calling thirds on a buddy team of (shock horror) FOUR? After all, that'd make YOU the worst breather of FOUR people!! Better dead than safe!!
- Q2. The herd instinct is strong, isn't it! Strong enough to destroy ALL that training about Thirds (NB these were all full cave certified divers). But if you were solo, you'd have enough confidence in the rules to be a little more CAREFUL.
- Q3. Three other divers can't all be wrong, can they? But, YOU can! That's why you're safer when you're solo.
- Q4. The attitude that Thirds doesn't apply when going round a loop should be treated with extreme caution. But of course, you can trust your buddy, can't you?? Hmm.....
- N.B. off topic of solo diving, but note how circuit dives can be bad for your health. The temptation to cheat on thirds around the half way mark so as to make it round, is strong. Resist.

Example 1.3. Hodge Close Quarry, UK, anytime.

I am astonished that the prevailing attitude among British divers is that this dive is great fun and you don't need any special training for it "provided you're careful". It is a slate quarry that filled with water to 100 feet or more when the quarrying exposed an underground river; and people go and dive the submerged passageways.

It has killed about 30 of them so far, hardly surprising since people go in to an overhead environment with no training nor even knowledge of the basic rules for such an environment.

I was down there practising skills that I prefer to use in warmer climes, and one buddy team came and soberly warned me about the dangers of solo diving there. They didn't seem to know they were supposed to have three lights each. They were going to go in without a guideline to air. I didn't check, but they probably didn't know the Thirds air supply rule either, or if they had heard of it, were probably laid back about keeping it. They were also going in after dark, which slightly increases the danger associated with not having enough lights between them. I *cannot begin to express* how much more danger they were in than I.

That, folks, is prevailing opinion in the UK. Toddle in if you feel like it. I don't recommend that you follow the herd in this case either.

Buddy induced fatalities, 2: the Desire to Impress.

The chance that you neglect obvious safety precautions is multiplied if you are trying to impress someone.

Example 2.1. A genius blinks

Many people feel that Richard Pyle is a diving genius. The one time he got seriously bent is detailed in his magnificently honest account in [Confessions of a Mortal Diver](#). Is it coincidence, I ask, that when he got bent he was in the company of (quote) the eminent Dr. John "Jack" Randall, one of the world's leading authorities on coral reef fishes (unquote), and he wanted to do just one extra dive (quote) I was anxious to take him there, and we decided to go July 14th - the day before his departure (unquote). He insisted in doing an extra dive to 200 feet after he had already been bent the same day. He nearly died of a CNS DCI, but

mercifully recovered to dive again. But the recovery experience included such undesirable features as Learning to Walk Again. Months of Convalescence. And partly, because he had a truly eminent buddy that he WANTED TO IMPRESS (note how it being the last day with this buddy would have made the desire to dive even stronger).

- Q1. If he had done the same things solo, would he not have killed himself outright? My guess is, indeed yes.
- Q2. But WOULD HE have done the same things without a buddy he really liked and wanted to please? PROBABLY NOT.
- Q3. So in spite of the "greater danger" of diving solo, the actual result of having a buddy was months of convalescence in this case? Because if solo, he'd have probably GOT OUT OF THE WATER after his earlier, joint bend, which would have been fixed without the horrors of paralysis etc.
- Q4. Who do you want to impress? Are you going diving with them soon?

Example 2.2: Read makes Idiot of himself at Devil's Ear

On this occasion I was diving with my cavediving instructor, and of course I was anxious to impress him. So I jolly well decided I was going to do the entrance passage in fine style, as indeed I did - in a sense!

By trying to do it too fast against the strong current I wasted a huge volume of air from my tanks and ended up absolutely exhausted, hyperventilating uncontrollably, at the "Lips". Now when solo I might waste air in various ways, but never quite so spectacularly as that. Put simply, I was trying to impress - and failed!

Note that the business of "hyperventilating uncontrollably" is not quite as funny as it sounds, because it is a widely held theory that that is the cause of death (hyperventilation causing CO₂ buildup (hypercapnia) causing unconsciousness (carbon dioxide narcosis) causing drowning) in a number of mysterious cases where the victim was found with air still left in his tanks.

Example 2.3: Another attempt at impressing ones Instructor.

This happened to a friend of mine who normally is very thoughtful and safe. He was training for his stage bottle speciality and was returning to the entrance of Devil's ear, where he tried to switch from his doubles to an oxygen bottle for deco.

The bottle was either not switched on or nonfunctional for more serious reasons. He couldn't get it to work. Trying to go back to breathing off his doubles, my friend was hindered by the fact that, joyful at arriving at the end of the dive, he had thrown away the doubles' main regulator with a suitably expansive gesture and it was now hidden somewhere behind his back. Somehow he couldn't find his doubles' backup regulator either, in the heat of the moment, though it should have been fastened to his right tit. And then, quite simply, he panicked.

From this state he was rescued by his instructor; I didn't hear the instructor's comments afterwards but I'm sure they weren't entirely favourable. Because my friend is normally so safe, I think this must be another example of the strange consequences of diving with someone you want to impress. Which brings me to.....

Buddy Induced Fatalities, 3: The Panicked Buddy.

Be aware of the possibility that your wonderful buddy, who increases your safety margin from zero to infinity (?) may PANIC under stresses that you may think insignificant, or not even notice.

A panicked diver will convince himself he isn't getting enough air out of his regulator and fight you for yours. Your mask and other equipment may go flying. In a cave, he is more than likely to zero the visibility, leaving you struggling in the dark with a lunatic. This is not a reason for not having a buddy so much as for choosing him carefully and keeping a sharp eye on him if his stress level appears to be rising. Indeed, an

overly stressed buddy is, like an overly stressed self, full and sufficient reason for terminating the dive - on your own if need be. See example 3.1 below.

Examples of Panicked Buddies.

You can read about two cases in Sheck Exley's autobiography. Example 1.1 above is probably another, fatal, example - if the buddy had kept cool and tied off to the guideline and used his safety reel, the victim might perhaps have been found, and be alive today.

Example 3.1. The Vortex Spring Incident: A Unilateral Decision to Dive Solo.

Four divers, including a friend of mine, went diving at VS. Two cavedivers and 2 open water divers. Open water divers promised faithfully not to go into the cave after the cavedivers, and as seems to be customary they broke their promise.

Deep in the cave system, the second open water diver became very scared and exited without his buddy. This action, which normally would be frowned on, probably saved his life. The buddy came to a passage too narrow to pass wearing his tank. He thought he would be cool and remove his cylinder. He had not read the fine print which says that this manoeuvre "is much easier if tank and diver are BOTH neutrally buoyant" (I quote from Martyn Farr's "The Darkness Beckons". I think Martyn is indulging in a characteristically British understatement). His tank and BC hit the ceiling, and he hit the floor.

The lead cavediver returned up the narrow passage to find the open water diver desperately sucking air from a regulator connected to a tank that was on the ceiling. As soon as he saw him, the o/w diver panicked and fought the cavediver (my friend), knocking off his mask and of course totalling the visibility in the confined space. When his panicked brain registered again the presence of the guideline, he tried to haul himself along it, raising in my friend's mind the hideous possibility that he would break it and lose them all down there.

My friend somehow got past the o/w diver in the confined space and tried to defend the guideline. He exited. Somehow his buddy did the same thing. And finally, SOMEHOW, the idiot whose fault it was managed to get out too. So no fatality. But, if the second o/w diver had not exited solo and there'd been TWO desperate divers down there --- what then??? If a buddy is foolish enough, there are times when it's right to leave him behind. (why not just call the dive? I'm not sure, maybe either (a) the first o/w diver ignored whatever signal was given or (b) he was known to be much too macho to respond to mere signals or (c) maybe the second o/w diver, though rightly scared to death, was still too shy to call the dive or (d) maybe the distance between them had increased to where communication was impossible - this can happen with better divers than those two.)

4: Buddies You Have To Watch: The buddy with poor sense of direction

This will probably not be fatal to you, though it may be to them; but buddies with poor sense of direction do exist, and if you have one you should study where you're going twice as hard as if you were solo - once so that YOU know where you are, and once so you can convince HIM, if necessary, at a moment of crisis.

Example 4.1: Little River

Everyone knows how to get into Little River. You go down the entrance shaft, round the corner, along the passage and then down the chimney to the lower, 95 foot level. Once, I and my buddy were larking around in the room at the top of the chimney before going down, and I signalled him to lead on. To my astonishment he started to go back along the passage towards the entrance from which we'd just come: just a few seconds of hey-isn't-this-cute at the top of the chimney had been enough to scramble his sense of direction, though he'd been there MANY times before.

Example 4.2: Fatality at Orange Grove Sink

[This incident was reported to me as an anecdote so I'm not as certain of the details as with the others. But it sounds sadly rather plausible.] A boy/girlfriend pair entered upper Orange Grove cave system, went along to the junction half way towards Challenge Sink, and turned right, then jumped off left again at the Martz Offshoot.

When they returned to the jumpoff the girl was totally confused about which way was out and wanted to turn LEFT instead of right, which does not lead to air. The boy argued with her in divers' sign language but she was perhaps panic stricken, and certainly not about to turn RIGHT unless physically forced to. They went their separate ways. He survived, she died. She must have gone "against" one or two line arrows, but was not persuaded to turn around until it was too late. There are not huge numbers of line arrows in that passage..

Example 4.3: Orange Grove again: More confusion.

Another small incident at the junction half way from Orange Grove to Challenge. I was with my buddy, the buddy in front, and I noticed she'd gone past the jump, which we had planned to take. Signalling, I swam up and to the right to the jumpoff line, which is not at all far. Pointing at the new line - which was just out of sight from my buddy - I did NOT manage to get my message across. Trying to signal more clearly, I incautiously stirred up a cloud of silt. So she got out her safety reel on the grounds that I was just disappearing out of sight of the guideline into a cloud of silt, and was clearly lost. Glad to see a reel coming at me I tried to get her to put it on the jumpoff line but she wouldn't - it being her absolute policy that "that ain't what safety reels are for". That confused me a bit because I hadn't noticed it was a safety reel not a jump reel. After a few seconds of this standoff I got out a jump reel of my own and ran it from the jump back to the main line. Wrong way round but still, a continuous guideline back to air. My buddy wound up her safety reel. Off we went and enjoyed the side passage.

But on returning to the jumpoff, my buddy had been sufficiently confused by the earlier nonsense that she thought "out" was to the right not the left. [This illusion is consistent with the line arrows because you've got "out" arrows pointing both ways at that point, being exactly half way from Orange Grove to Challenge.] Unknown to me, as I swam back out of the side passage and turned to the left ahead of her, my action in turning left not right provoked a sudden surprise, and presently a change of orientation as she realised I was right. We discussed this afterwards - I was surprised at how much confusion had been happening without my being aware of it - and basically put it down to experience. But in terms of what I learned, it was to trust a buddy's sense of direction a NEGATIVE amount - assume things will be THREE times as confused as when solo unless you're very, very careful.

The experience of arriving by mistake, confused but alive, at Challenge Sink due to navigation errors, is one I do not wish to have. Though I know at least one diver who has done it, coming from the other (Olson) direction.

5: Buddies You Have To Watch: Vanishing Buddies.

It is axiomatic that if you really need help from a buddy, he will be somewhere around the next corner where you can't see him. This is especially true when the buddy swims three times as fast as you do and disappears from sight within five minutes of the start of the dive. (It may also be true of a very SLOW buddy, though really you should solve that by putting him in front, or just spotting the problem and slowing down). But returning to the fast, or Vanishing, buddy, obviously one tries to signal to him to slow down before he disappears. Success rate varies with this approach. An alternative strategy is to make sure you are diving in a manner that would not alarm you were you solo, and if you become solo due to amazing speed of your buddy - no problem! You'll probably catch him up in about half an hour's time! He'll pretend to be apologetic!

I have had several such buddies, being a relatively slow swimmer. The main problem with signalling to them is, you get fed up with it!

It is dangerous to accelerate to vast speeds in order to catch up. Apart from consuming lots of air, you may fail to pay attention to other aspects of your dive, - such as the *way out*.. More than one life has been lost because a buddy team jumped across a gap without noticing the lack of a continuous guideline, and then went the wrong way when they came to the unfamiliar junction on return. We will never know for sure, but I picture such divers going in fast, trying to penetrate further on a finite air supply, and thereby failing to keep a sufficiently sharp eye on the guideline. Excess speed and exuberance can be very dangerous indeed; but of course, when solo, you set your own pace.

Of course the rules for cavediving constantly emphasise that you should set your own pace anyway - that a buddy team should go at the pace of the slowest diver, and turn round when the least efficient diver hits thirds. But with everyone trying to be macho down there, it doesn't always happen. Most of the problems with buddy diving can be avoided by steadfastly refusing to be macho.

And if you cease to be macho, you'll discover one of the great secrets of cavediving, frequently known only to solo divers - it's really *beautiful* down there. It can be a really wonderful, really *peaceful* experience. In short, there are *other* reasons for cavediving than measuring your cojones against those of others.

6: Gear Configuration: Alternatives to Being your Buddy's Keeper

The DIR school of diving holds that you should not dive with any diver who does not conform rigidly to the Hogarthian gear configuration, and indeed, the Hogarthian/DIR attitude to diving generally. The given reason for this is that unless you know your buddy's gear as well as your own, things may go wrong when you need to use it in a moment of crisis; and in any case, there's "only one right way" of doing anything.

Now the second proposition - there's "only one right way" of doing anything - is clearly false, e.g. in my own subject of mathematics there frequently are two valid proofs of the same Theorem, and furthermore both may be interesting and worth knowing - it's not always true that one is merely an inefficient version of the other. And yes, lives sometimes depend on getting the mathematics right. And yes, there are circumstances where DIR gear configuration is entirely inappropriate, e.g. nearly any British cavedive, which will be narrow enough that backmounted cylinders will not fit in the cave.

But the first proposition, that unless you know your buddy's gear as well as your own, things may go wrong when you need to use it, has a certain amount to be said for it. And yet, it is restrictive - am I really my buddy's keeper?

Now if you're terrified of solo cavediving, I think there's no escaping the fact that you must know absolutely everything about your buddy and stick closer to him than a leech. Because if you should happen to lose him, the resulting stress may cause you to panic, which will most likely cause your death. But if you are comfortable diving solo, there are alternatives, and here are a few.

Read's Buddy Postulates

- Proposition 1. You may decide that *you WILL NOT do any dive with a buddy that you would not be perfectly happy to do solo, and with the same gear configuration* . This presumably implies that you will either take a buddy bottle or fully independent doubles when cavediving, so that you - on your own - have full 100% redundancy in your air supply. You must also make sure that the buddy bottle is not too small - it must be able to get you out of there, on its own, at all times. Ideally it should be the same size as one of your doubles cylinders. Proposition 1 also implies a certain caution about the ambitious choice of dive plans - am I happy to do the Titanic solo? If not, why am I doing it with a buddy?
- Proposition 2. Compromising a little, you may decide that *you will sometimes do dives with a buddy that you would be unhappy doing solo, but in that case you will be CAUTIOUS - perhaps (esp. if you think he's a MACHO buddy - that's the worst sign of impending danger), even as rigidly cautious as the DIR diver - in choosing the buddy* . In particular, if you are going to abandon 100% redundancy

and dive wearing linked manifold doubles alone, you must NOT have a Vanishing Buddy, because you may need him in a hurry if you have a serious first stage freeflow. You can NOT rely on closing the manifold off quickly enough - indeed, Murphy's Law states clearly that the emergency will occur in a restriction, where you may not be able to reach the manifold anyway. There are places where reaching over your head and behind your neck involves going through six inches of rock, because your elbow sticks up much higher than the tanks themselves, and out to the side, during that manoeuvre.

- Proposition 3. Or you may decide that the possibility of handling things solo-style is too terrible to contemplate, so you *MUST have a buddy that "sticketh closer than a brother"; he needs to be very reliable, and though his gear configuration need not be your own, you surely need to be familiar with it.* That's getting close to the DIR line, though of course the choice(s) of gear configuration need not be Hogarthian.

And what do you do, Prof. Read? Well, about half my dives are solo, either with independent sidemounted doubles or independent backmounted doubles or linked doubles plus buddy bottle. The other half are done according to Propositions 1 or 2.