

## G Dale – Bailout Advice

Transcript of the Youtube video <https://www.youtube.com/watch?v=cDXIxHAmSX0>

To talk on how to bail out of a glider safely: There is no way of bailing out of a glider safely. It's an uncontrolled situation. [0:30] This is all about probabilities: If you are better prepared you have a better chance. But I am not guaranteeing that anything I say is right or will work. But in my view it's worth to think about it.

So, my experience, from lots of gliding coaching all over the place I have met lots of people who have jumped out [...], quite a lot. And it has convinced me that the chances of jumping out of a glider are reasonable. [1:00]

So, most of the collisions ... if you haven't been over about 3000 feet you probably won't get out; the reason is it takes too long to get out of the glider. By the time you get out of the glider you are too close to the ground, or you can't get out of the glider at all. If you are above 3000 feet you got more chance. Reichmann died after a mid-air collision just above the ridge. He was coaching and he was taken down by somebody else. Too low.

So, here is something to think about: the performance-arousal-curve. [1:30] I think you are probably mostly familiar with this from sports psychology. If you have a mid-air collision, your arousal level will go through the roof, and you will not be able to think clearly, or perhaps not even be conscious. This is worth bearing in mind, because in this situation you can only really react as you have been taught and trained and rehearsed. It's stuff you know intuitively. [2:00] You are turning on a ridge, the wing goes down, the glider turns upside down, you bang the stick forward, hit top rudder. You don't have to think about it, right?

Okay, so, what happened to me: two gliders in the thermal, a couple of thousand feet, nasty blue day, here and here and here [shows relative position of two circling gliders], and then I did this [shows the glider in front opening up the turn for re-centering the thermal] – I'm flying very slowly, 42 knots on the DG-100 – fat big wing – and this guy didn't catch it, he comes here [shows second glider flying underneath first glider], he is going a bit fast, [2:30] he pulls up into me.

That cracked the fuselage, the glider goes “dudduh” [imitates sound of impact]; not very hard, just a gentle [claps hands twice to imitate sound of impact] and pitches down into a 30 degree dive, and I open the brakes – I'll talk about that later – fully open the brakes, pull the stick back, [the glider] does thiiiiis [shows soft pull-out of the dive back to level flight] and woooooah, like that [shows sudden nose-down pitching movement] and it goes into the vertical and my mind just goes into overdrive. Just – bamm – straight through into the vertical. What happened? The fuselage cracked, it changed shape. The elevator force-acted as a [3:00], like a trim tab to fold the fuselage, and it locked into the vertical and went straight down, for about 800-900 feet in the vertical.

So, get canopy off, canopy then straps. So I pull on the canopy handle – nothing happens. At which point I remember there is an AD out on all the DGs: you have to grease the canopy release [3:30] mechanism every year. First year I had it, I did it. That year I'd been doing it in the workshop on my own; I thought 'ah, I'll do it later, I haven't got anybody to help.' I hadn't done it. So I pull the canopy release knob – it doesn't move. So I put the other hand onto the release knob. When you move a hand onto a control if it's not a 1g environment you have to watch it go, otherwise you miss the control. So I watched it go and as my hand comes over [4:00] the instrument panel I look past my

hand and the ground is doing this [shows ground approaching very quickly]. So I put my hand on it and I pull with all my strength and after about two seconds of pulling it goes 'click' and then the canopy is free. Nothing happens. So, it's a DG, so I kick the canopy really hard, at which point I rip this muscle here [points to his leg] because I kicked the canopy really hard [...] and it comes off. We are going through [4:30] about 1400 feet, 1300 feet, 1200 feet – I don't know. We are going down really fast. The canopy goes off. The headrest, as the canopy pivots upwards like this, because it [the headrest] is attached on the back [of the canopy] quite deliberately so that it can't slide back, so it goes 'boom'. The headrest hits me really hard on the back of the head and puts my lights out. And I'm out for seven or eight seconds. So now I'm going down through 1200 feet in the vertical, glider accelerating, unconscious. The fuselage breaks in half. [5:00] The glider decelerates rapidly and tumbles into an inverted position; sort of flops along like that for a moment. Seven or eight seconds after the canopy goes I wake up, I'm upside down. I know I'm upside down because I'm in the dark. That's the most important thing because you know when you roll a glider on a blue day you go in the dark. I recognize the visual picture and then I think 'Oh, I *am* upside down', because my hands are up here [waves hands above his head], dangling in the slipstream.

So I go [moves hands to belly][5:30], twist: nothing happens! Why is nothing happening? Because I am under one, one and a half negative g. My weight is on the straps; I can't release the straps. The buckle is tight. No real tests have been done on this. We don't really know what the loads are in inverted flight for releasing the straps. So I put a thumb on each side of the butterfly. It's one of those double butterfly arms – is it Gadringer – and I go 'boom' [shows turning movement with both thumbs to open buckle] at which point I'm in mid-air and I think to myself: [6:00]'Gosh, this is really nice, this is freefall, this is gorgeous, I can see why people do it'. And then I think: 'Am I tumbling?' Yes, I'm tumbling, completely tumbling, because it's going sky-ground-sky-ground-sky-ground. Should I maybe go [imitates the typical free-fall body position called 'the arch']? And then I think: don't be a twat, pull the chute! So, then the chute is open and I am still chuting around for a bit, and then I pass out again. They found me fifteen minutes later in a field, unconscious. Bad whiplash, impact vertigo, [6:30] damage to the leg muscle here. The only thing that hasn't gone away is the damaged leg muscle, of course.

So I was fine, just fine. It was all right. PTSD [post-traumatic stress disorder]? Yes, but not really in terms of fear, although it took a couple of flights to get over being scared. On the second flight I thought: well this going straight down is frightening. So I just went up in a K21 [enacts pushing the glider over into a vertical dive, looking around and pulling out to level flight again]. Yeah, I could do that, okay, fine. But I was very aggressive and difficult to live with for about two years [7:00], while I was trying to get through the situation.

Okay, so what I learned from that is that when you have a mid-air you will go right all the way out here [points to right-hand side of performance-arousal curve] instantly. Now I'd like to talk about bailout seminars [?]. The Aussie bailout seminar [?] frightened me worse than the mid-air. So you sit in the front of a Blanik with a [...] front canopy. So you sit in there and you strap in [7:30] and you get a parachute, you are strapped in and the instructor sits next to you and he says: Okay, here you go, wing up, rope on, brakes locked, take off, okay [...] lift off, over the hedge, down, it's a low tow, watch the slipstream, you are bouncing a bit, get up to the right, and he talks you through the flight, very calm and peaceful. And you turn off tow, you come off tow, and you turn into a thermal, and suddenly the instructor goes [08:00][suddenly shouts, bangs hands on table] GET OUT GET OUT GET OUT, OUTOUTOUTOUT

Every time I do this it gives me the wobbles, you know, a panic attack; that's how you raise it [...] So the result is: when that happens to the student in the bailout seminar [?] what you see is this: the instructor is screaming [8:30]; screaming at the student. The student goes [pantomimes student fiddling frantically with canopy, straps, parachute] – instead of what you need to do, obviously, is: [very calmly pantomimes the following steps] Canopy. Straps. Out. Look-Reach-Pull-Arch.

Now, right now, we are right here [points to right-hand side of performance arousal curve][09:00] Partly from the memory of doing it, and partly, well – if you actually go through this and you do it to somebody yourself, you know, screaming at somebody gets you right up. So whenever I do this briefing it's very difficult to finish it because it's very difficult to come back down. But this is real, this is how we behave. This is where you will be if you have to jump.

So, this is what you need to know: you have to be able [9:30] to do this without thinking. Therefore you have to be prepared and in some way practiced to deal with it. Obviously, canopy first, straps second, not the other way round. You need to know that the canopy will come off [...] If you don't maintain it yourself you need to make sure it's maintained. But I would suggest you maintain it yourself. Know that it will release. [10:00] Know that it's going to go. Know what is likely to happen as you get out. Long canopies released at the front have a habit of coming back and hit the pilot sliding up like this [shows a canopy sliding backwards over the fuselage sides] or going sideways and smack the pilot in the face as they go. Nice if you can arrange the canopy to go like that [shows a canopy rising nose first, swinging round a point at its back] but you can't guarantee it. The Röger hook is supposed to help. If you have an old DG with the headrest here [pads back of his head] take it off and put a roll behind your head instead, because if the canopy does that [again shows a canopy rising nose first, swinging round a point at its back] it will swipe you [10:30] really hard. So, make sure the canopy can go. Make sure you know how to undo the straps. So, if I'm in the back of the ASH, it's clack-clack-clack-clack [shows appropriate actions]. If I'm in the Libelle, it's [shows appropriate actions]. You have to know your glider. You really have to know your glider.

So canopy, then straps. Over the side, pull the chute. Pull the chute [11:00]: look, reach. Thumb through the ring. Grasp it, put your other hand on top of it. You do not want to lose the grip on the D-ring. This is a common problem in parachuting. Because you look, you're half-pulling, you lose your grip on the D-ring and then it's doing [shows half-pulled D-ring flapping about in the airstream]. The ground is coming up and you go [searches for the lost ring]. Look, reach, other hand, pull. Arch. That's what I was trained to do by my rigger. [11:30] Look-reach-pull-arch. Look-reach-pull-arch. And he spent his life parachuting in [...] so he must know what he's doing. He is still alive.

So canopy, straps, open the chute. How much delay between getting out of the glider and opening the chute? None whatsoever! Just open the bloody chute, because this is a time pressured situation. You are unlikely to get tangled up in the glider. That's what I've been told.

Now, a couple of situations that you will have heard about:[12:00] Not being able to get out of the airplane. A lot of people, especially middle-aged or elderly people can't get out of the airplane when it's sitting on the airfield. I suggest for everybody a fitness program because it helps your gliding. My fitness program is: tricep dips! [demonstrates the exercise] If you watch me get out of a glider, I just put my hands on the side of the glider and push myself out. Most of you youngsters, you wouldn't even think about that being a problem. [12:30] But for the middle-aged amongst us it becomes a problem because we are fat and old, so: tricep dips.

But you will not get yourself out of the cockpit if you've got substantially more than one g. It isn't happening. Nobody is strong enough to do that. It doesn't work. So here's a little bit about the dynamics. If you lose the back end of the aeroplane the glider will pitch down hard. Getting out of the cockpit is no problem because you are under negative g. [13:00] You might have to work hard to undo the straps but you're going to go through whatever. You know, you just got to come out. So that's not a problem and I would say in a negative g situation, you unlatch the canopy, if it hasn't gone, don't worry: it's going to go with you. Imagine rolling a glider inverted and hoping the canopy will stop you falling out. [13:30] Imagine suspending a canopy here and finding a way of sitting in it so you don't go through the perspex. It's not going to keep you in the glider. You might cut or scratch yourself as you go through, but that's another issue. Frankly, who cares? So, release the canopy, release the straps. If the canopy hasn't gone I wouldn't worry too much about it. I'd just try and go straight through [...] in a negative g situation.

In a positive g situation, how can you get a positive g situation? [14:00] It's a spiral dive. If you lose roll control, you will get a spiral dive because the glider is trimmed to fly at normal flying speed. It rolls, the nose goes down, it pitches up, but of course it's rolled so it just does a spiral dive. G goes up and up and up. You will not get out in that situation. You can't get a spiral dive without a tailplane. Can't happen. You might get some sort [14:30] of low g oscillation but without a tailplane the glider will not fly, will not produce lift because you cannot hold the wind at a positive angle of attack without a tailplane. The centre of pressure pushes the nose of the wing down and you get a negative g situation. So, if you can't get out because the g is too high, undo the straps, undo the canopy – undo the canopy then the straps. Even if the canopy is still there, shove the stick forward. Shove it all the way forward and you are almost certainly out. [15:00] We know this because many people have had big incidents when they have pushed the stick forward by accident. A guy I knew (what's his name) picked up a Peg from the factory, a Pegasus [=Pégase] from Centrair, didn't do the straps up, hit a bump, pushed the stick forward – found himself sitting in the air. That's why we have straps in airplanes. Because as you move the stick forward you go up, as you go up you move the stick forward, you go up, you move the stick forward.

[Question from the audience: can you do this in a spiral dive?] Yeah: shove the stick hard forward, you unload the airplane. [15:30] You won't have experience of doing it because of course you wouldn't do that without breaking the glider. You know, if you are in a proper spiral dive, four or five g and 120, 130 knots on the verge of breaking the glider, if you were going to recover from that, well, you wouldn't shove the stick forward, would you?! Because you'd break it. So we don't have experience in that corner of the flight envelope. But what I'm saying is if you can't get out the chances are that you have elevator power to unload the glider and go out. And if that means going out through the canopy, so be it.

[16:00] Now, this is not safe. This is not predictable. This is not a controlled situation. But if you think about those things, think about that set of dynamics; it might just help. And you'll sometimes see me get out of the glider and I'll get out and go [rehearses look-reach-pull-arch routine]. Look-reach-pull-arch. It's something you should know [16:30] as instinctively as you know 'full opposite rudder, stick gently forward' to stop a spin.

[Question from the audience referring to types of parachutes which require the rip cord to be pulled in a direction different from the downward movement discussed so far.] Some unfortunately go up, and I hate flying with one of those, because my instinct would be to do it the other way. So I try to

make sure all the parachutes I select to use [17:00] - and normally I fly with my own – but if I'm using another parachute I'll pick the one with the D-ring that goes in the downwards direction because that's what I'm used to.

Okay, brief presentation, horrifying subject, worth thinking about. Because it's one of those things where taking the right action could save your life.

[Question from the audience referring to opening the airbrakes after a mid-air collision.] Oh, yes, OK, sorry, I missed something: first thing you do [17:30] when you have a mid-air collision is open the airbrakes. This might take the wing off. However the more drag you have the slower the glider will descend. And time is what you need. So if I found myself in a sailplane with the nose pointing down unexpectedly, if I didn't sort of identify it – if I drop a wing; stall, spin entry, something like that, obviously I wouldn't need to open the airbrakes. But if there was a bang and I found myself like that [shows steep nose-down attitude][18:00] first thing I do is pull the airbrakes open.

[Question from the audience: Did you do that in your accident?] Yes, absolutely. And that reduced the vertical speed. And I don't think it went above about 150 [knots] and then when we went round the outside loop it was doing about 80, because otherwise I would have had red eyeballs, and it would have damaged the glider. So, yes, open the airbrakes, that reduces the vertical speed. Yeah, if it takes the wing off, it takes the wing off. You are in a bad situation, so what do you do. Uhm, yeah, I think that's pretty important.