

Freedive Equalization Training

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In this text I describe how I got my equalization working from naught to AIDA freedive instructor level. In no way I claim this to be the only, the best or even *your* way. Use it as an inspiration and grab yourself Federico's book on Equalization (s. reference in the last chapter). It is understood that I don't assume any responsibility for the outcome of your efforts, neither for ecstatic states of success nor any injuries or depression upon failure.

Before we start, try this:

1. Breathe in and out in a way that it doesn't matter if you pinch your nose or cover your mouth: the breathing goes on unobstructed.
2. Fill your mouth with a little bit of air and close it.
3. Pinch your nose.
4. Push the air up into your ears *without* engaging any muscles in your belly or torso.

If your ears popped, you got it! That was an equalization, most likely a so-called "Frenzel". Stop reading and go freediving!

If your ears didn't pop, well, then here we go with the program.

Introduction

This workshop is for freedivers who have a hard time equalizing or can't equalize at all. I was a member of the second group: When I started freediving, the only way I could equalize was by *swallowing*. Do you hear that clicking noise in your ears every time you swallow? That's the muscles around the Eustachian tubes opening up for a moment, so a little bit of air can move between the nasopharynx and the middle ear to equalize any pressure gradient. That's why chewing gum on a plane helps: You are frequently swallowing saliva, hence, equalizing. Of course this (swallowing, not chewing gum, of course) is a very slow technique and thus my dives were limited to shallow depths. Even worse, for me it only worked when I went down feet first – so, as soon as I did a duck dive to go down head first, I couldn't equalize anymore.

That's when I started looking around for help.

First I found Eric Fattah's Workshop for the "Frenzel Technique" (online available, see reference in the last chapter) and I started to work with that right away. I got the technique pretty quickly, but still I couldn't equalize – now what? Well, in my case, I had to dig a little deeper. I figured out that I am a) more or less constantly congested with more or less chronic sinus infections, and b) I couldn't use the muscles involved in equalization as described by Eric. These muscles plainly and simply seemed to be not mobile and flexible enough!

I found two more sources to solve those problems – the congestions and the lack of mobility of certain muscles – as well and completed my personal training. After weeks of following that home made training regime it was time to proof the case, and lo' and behold, I brought up sand from - 20m on my first day of being back in tropical water.

This program worked for me - fingers crossed it works for you, too!

I would like to point out that that “equalization technique” is not something we are born with, but it is a skill that can be acquired. And so can you!

For my training, I combined three inputs – one each for my problems:

1. Yogic breathing for cleansing of the breathing apparatus: Bhastra-Kumbhaka as my much valued Swiss yoga teacher Reinhard Gammenthaler describes it in his book *Kundalini-Yoga-Parampara* (S.386-389)
2. Exercises to stretch and mobilize all muscles involved in equalization: Tubular Aerobics as Umberto Pelizzari and Stefano Tovaglieri describe it in their bible *Manual of Freediving* (S.202-209)
3. Equalization technique: *Frenzel Fattah Equalization Workshop* by Eric Fattah

In this text I reproduce only short passages from these sources, without going into detail of why you should do certain things. If you are interested in the full story, I encourage you to get yourself a copy of the sources to dig deeper.

To make this training a success, you will have to follow a few basic rules:

- Train on a daily basis. “I can’t” and “I don’t have time“ are no excuses - change your habits and create time. You have to give something to get something.
- Expect to train for at least one month - daily.
- One session takes about 30 minutes.
- Make sure your newlywed doesn’t see you while you do your training - you might appear to act a bit strange, to say the least.
- TRAIN IN WATER ALWAYS WITH A QUALIFIED BUDDY! That means, don’t go alone holding your breath in water (pool, bathtub, open water, lake..) and please join a freedive course with a certified instructor.
- You have to be honest to yourself. If you cheat at any exercise, the only one you cheat is yourself.
- Once your equalization works, keep on training on a weekly basis.

„I think I can see the future – because I repeat the same routine“. Trent Reznor is right, this training repeats itself every day. No changes, only progress.

See next page.

Equalization Training

This is the daily cycle: A) all muscles involved in equalization have to be warmed up, B) get them to work in a coordinated manner, and C), learn the equalization technique!

A – Cleansing the Breathing Apparatus

This is a breathing exercise called Bhastra-Kumbhaka, as described by Reinhard Gammenthaler. There's a gazillion ways of doing Bhastrika and Kapalabhati, but I will focus solely on Reinhard's description. Keep a hanky ready!

In this exercise, it is important to visualize your *belly* as a bellows, which you operate with full strength: You pull on the bellows until it is fully open (meaning your belly is full like a balloon), then you push the air out until it is empty again. This creates a continuous and *strong* flow of air.

The purpose (apart from a very energizing effect on your body and mind) of this exercise is

1. To remove excess mucus from the breathing apparatus
2. Strengthen the diaphragm
3. Train to use the diaphragm independently from other muscles involved in breathing

Every hyperventilation needs to be balanced by hypoventilation, so please don't skip the breath hold at the end of every cycle. Sit or kneel on cushions so your spine is straight and erect. Yogis choose Padmasana. Then do the following:

1. Eyes are open, the left hand rests in the lap.
2. Inhale through both nostrils.
3. Close your **right nostril** with the **thumb of your right hand**, exhale and inhale fiercely from your belly through your left nostril.
4. Release the right nostril, close your **left nostril** with the **ring and middle finger of your right hand** (Damaru-Mudra), exhale and inhale fiercely through your right nostril.
5. Repeat 25-100 times
6. Inhale one last time deeply from your **right nostril**, then lock both nostrils, close your eyes, tilt your head forward to rest your jaw on your chest and hold your breath (Jalandhara Bandha, Yogis should add Mula- and Udara Bandha.)
7. Hold your breath as long as you can.
8. Then exhale deeply and gently from your **left nostril**, then keep holding your breath again.
9. Now pull your belly in towards your spine and up into your ribcage (Uddiyana).
10. When your capacity to hold the breath is exhausted, inhale deeply through both nostrils, lift your head and open your eyes.

Now repeat the whole procedure, but in step 3 you start with blocking your left nostril and breathing through your right one.

Reinhard recommends going on for 15-20 minutes before changing leg-position and repeating this exhausting breathing program. I chose to do only two repetitions – starting once with each nostril and going for 25 repetitions.

This exercise did wonders for me by removing any excess mucus from my system. Since the day I started doing this exercise regularly I have been congested only one single time in my whole professional freedivers live. Not bad, I reckon.

B – Mobilize the Muscles Involved in Equalization

To start with, use a simple stretching exercise for your neck muscles:

First stretch: While standing or sitting with a straight spine, allow your right ear to drop down to your right shoulder. Stay there, feel the tension on your left side of your neck, and let go of any firmness you find in your neck. When you are positive that there is no more tension to let go, raise your right arm, reach over your head and place your right hand on your left ear. Don't pull on your head! Just allow the extra weight of your arm to pull your head down a bit further. Stay for 5-7 relaxed breaths in this position. Then let go of the ear first and slowly raise your head back center. Repeat by allowing your head to sink to the left.

Second stretch: Allow your right ear to drop back down to your right shoulder, same like you just did. Then slowly rotate your head forward, until your chin touches your collarbone and your crown of the head points forward. Keep an erect spine and don't pull your head down with your hands – the weight of the head is enough. Slowly move onwards until your left ear is "touching" the left shoulder. Now go vice-versa, allow your chin to touch your collarbone again, before ending the movement where you started. Do that a few times.

The following part is where your daughter will stop taking you for serious after observing you doing this: This sequence of stretches, spoken vowels and application of an "Otovent" will make you look silly. But hey, we were born to bring joy to the world, right?

This is a selection of exercises described in the famous book "The Manual of Freediving". Next to other benefits, these exercises aim at mobilizing & strengthening all muscles involved in equalization technique. Repeat every exercise 20 times.

1. Tongue – stick the tongue out as far as you can, without pulling a face, then retract it all the way back, brushing the tip of the tongue along the roof of the mouth (this is slightly modified from the original exercise).
2. Tongue – with the tip of your tongue, draw circles on your lips. One to the left, one to the right.
3. Jaw – open the mouth as far as you can without moving any muscles that are not needed to do so, and then close it.
4. Jaw – move the jaw from left to right. Keep only a little gap between the teeth.
5. Jaw – move the jaw front to back. Keep the little gap.
6. Jaw – rotate the jaw clockwise, then in the opposite direction.
7. Soft palate – three quick and powerful <ah>-sounds, followed by a short break
8. Soft palate – then go on with three sounds each, always with a little break in between: <ee>, <eh>, <oh>, <oo>, <eek>, <ak>, <ok>, <ook>

There's one more exercise that really helped me: Take some water in your mouth, pinch your nose and swallow a gulp. In the beginning, that feeling of my eardrums getting moved around scared me a bit (non-equalizers like me are not used to the feeling of a "popping" eardrum!), but then I found out that this is ok and I started to enjoy it and relaxed into it.



What follows next is the application of an "Otovent". This is a soft balloon with an end-piece that allows you to inflate the balloon through your nose. Get one at your local pharmacy. Alternatively, you can build your own, please check the very informative video of Edmond Kay M.D. (link in the last chapter) how to do that.

DON'T DO THESE EXERCISES WITH AN INFLAMED EAR DRUM OR MIDDLE EAR.

Put the balloon on your right nostril and pinch the left one. Inflate the balloon nicely through your right nostril. Then allow the air from the balloon to flow back in, while you swallow. Repeat with the left nostril. Enjoy the air that goes up into your middle ears to pop your eardrums!

Now that you know how to work with the Otovent, use the inflowing air to pronounce <ag> and modulate it with all vowels (ag, eg, ig, og, ug), then move on to <gha> (ghe, ghi..), <ka> (ke, ki..) and <gla>.

In the end you can just play around with allowing the air from the Otovent to flow into your middle ears. Experience how this is only a matter of “letting go”, rather than doing something special. Just like freediving itself.

C – The Frenzel Equalization Technique

The full workshop, created by Eric Fattah is available online for free at many sources (e.g. here: http://liquivision.com/docs/Frenzel_Fattah_English_r2006.pdf). Please download it and make yourself familiar with the details and walk through all exercises of the “Frenzel” equalization technique as described in Part2 of the document.

A word of caution: Also in this paper you find information on “Mouth-fill” and “Packing”. These two techniques are *not needed* for equalization. Performed incorrectly, or for the wrong purpose, they are *potentially harmful*!

Rules of thumb when it comes to those two techniques:

- If you are not diving deeper than -50m, don’t touch “Packing” but get more relaxed and more flexible!
- If you start using “Mouth-fill”, take it very easy with increasing your diving depth.

Final Comments

We all come from very different corners when it comes to equalization techniques. Some people equalize so called “hands-free” just like that and can’t even explain what they are exactly doing. Others are happy with the “Valsalva”-technique, which means exhaling against a pinched nose by applying pressure with the belly. And then there is the third group, the non-equalizers like me: We simply have to put in a bit more of an effort, but we can learn it, just like the others!

I don’t think it makes sense to teach to non-equalizers the Valsalva-technique – as we have to make the effort anyway, I think it’s worth putting it into learning a technique that is more efficient, more relaxed and safe also for upcoming deeper freedives: The Frenzel technique.

I made the training described in this paper my daily morning routine: First the warm-up and cleansing (Part A), followed by stretching and mobilizing (Part B), and then working on the Frenzel technique (Part C). It was my ritual, my personal trip to discover myself in a new way. Even today I apply the stretching exercises before every freedive session and teach them to my students. It makes such a difference.

I hope it makes a difference for you, too!

Literature

Fattah, Eric (2001): Frenzel Fattah Equalizing Workshop: Step-by-Step Guide to Optimal Equalizing for Freedivers and Scuba Divers. Edited by Peter Scott, 2006. Available online from multiple sources, e.g. http://liquivision.com/docs/Frenzel_Fattah_English_r2006.pdf.

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Mana, Federico (2010): Equalization for Freediving. Magenes. ISBN 9788887376913, www.federicomanas.com, www.movinglimits.com

Healthy-U. The Diver’s Ear: Under Pressure. Video of a speech by Edmond Kay M.D. (2000). <http://www.youtube.com/watch?v=vw9UNcp9IxM>.