Diving regulator gas method
nitrogen/helium inhalation via diving regulator

This is the sophisticated version of the well known exit bag method, so to speak.

As an introduction to the original exit bag method I recommend the addendum to the book "final exit 3rd edition" (www.kopete.cc/web/Final_Exit.pdf)

The various problems and uncertainties of the original setup (plastic bag + gas tank with permanent gas flow) are addressed in numerous other threads and are not the topic of this post. Instead I merely want to present my results here, which come from the consideration of said uncertainties.

The basic idea to breathe an inert gas (in this case nitrogen or helium) is my starting point as well. I'll just try to rule out the uncertainties of the plastic bag as well as of the permanent gas flow from the tank by following a somewhat more technically involved approach.

First of all, let me point out the advantages of nitrogen/helium inhalation again:

- NO shortness of breath and NO feeling of suffocation since CO2 keeps being removed
- Unconsciousness kicks in very quickly
- Death after a maximum of 3 minutes in pain free unconsciousness

It doesn't matter which of the both gases you pick for the method shown here.

For a clear explanation of the mode of action of nitrogen inhalation, you can download the BBC report "How to kill a human being" from http://xhgc18.blogspot.com/2008/01/bbc-horizon-how-to-kill-human-being.html or watch it directly at http://bizarrereport.com/killhuman.htm

The German translation with the title "Die Wissenschaft des Tötens" (The science of killing) can be watched here: http://de.sevenload.com/videos/BWXpLPs-BBC-Exklusiv-Die-Wissenschaft-des-Toetens

In two chapters (> 30th minute?) the consequences of oxygen deficiency for the brain, as well as explicitly the mode of action of nitrogen inhalation are clearly demonstrated by means of an animal experiment carried out at the University of Bristol under the direction of Dr. Raj.

(Concerning the compatibility of nitrogen inhalation with ethical principles in animal medicine; see also: Euthanasieverfahren in der Tierarztpraxis nach Hubbel (euthanasia procedures in the veterinarian practice according to Hubbel): http://www.vetion.de/focus/pdf/Euthanasieverfahren-Tabelle.pdf)

Indicative of the effectiveness is also the statement of the Safety Advisory Group of the EIGA (European Industrial Gases Association) in their safety newsletter about the effect of inert gases in their extra edition "Kampagne gegen den Erstickungstod" (campaign against asphyxia)

Quote:
Inert gases like nitrogen, argon and helium are odorless, colorless and tasteless and are therefore insidious by nature, because they don't give any warnings about their presence and

the life threatening change of the local atmosphere. For persons who are unaware of this, suffocation through inert gases happens without any prior signal, which can occur very quickly. Just seconds of low oxygen concentration are enough. You just don't notice that you're passing out.

The requirements for the technical implementation of my considerations were:

1. The creation of a nitrogen/helium atmosphere that's as pure as possible and not mixed with exhaled breath (oxygen and CO2)
2. The apparatus must not become ineffective through uncontrolled movements of the body during unconsciousness or relaxation of the muscles and therefore a changed body position
3. Emitted gas must not endanger others when the person is found

Required are:

- Diving regulator, consisting of 1st stage (pressure reducer DIN) and 2nd stage (demand valve)
- Nitrogen/helium tank, 3 or 5 liters, purity at least 2.8
- Adapter for connecting the tank to the diving regulator
- Full face diving mask

This might at first sound complicated to some people, but in principle it's simple and moreover all components can be comfortably ordered online from home. Still, for safety reasons all links to dealers are included in such a way that they cannot be clicked on directly (does not apply to the attached PDF).

Some basic things:

I will explain everything in detail, even if it leads to the text becoming bloated and things being mentioned that actually don't require explanation. But I'm certainly not alone in my belief that planning your own passing requires the utmost diligence.

Nevertheless, there will obviously also be people who believe they don't even have 14 days of time to get a hold of all the required pieces and to assemble them carefully. And of course there will be those who are not willing or not able to invest the necessary amount of about 200€.

Those who don't have the required funds I would advise to explore all possible ways of acquiring them.

The others who don't **want** to invest the necessary time or money can stop reading at this point. Good luck to you, you're going to need it. Because the often described failed attempts using various suicide methods are generally the result of overhasty preparation or a lack of preparation.

Ingredients

1. Diving regulator, consisting of 1st stage (pressure reducer) and 2nd stage (demand valve)

This is a diving regulator like the ones used worldwide by divers or firefighters and which are offered on eBay by the hundreds. For our purposes a very simple regulator will suffice and can be bought for about 70€ in used and certified condition. There are different designs depending on the manufacturer and there are different terms used (<various German terms for diving regulator which seem to have no English equivalents>) but they all mean the same thing.

The regulators consist of two parts which are connected by a hose. The 1st stage is a pressure reducer, which regulates the gas pressure that's 200 bar for a full tank down to about 9 bar above ambient pressure. The second stage, the actual breathing regulator, further reduces the pressure so that the gas can be breathed normally through the mouthpiece. These adjustments happen automatically and require no manual control.

Picture:

- Pressure hose between 1st and 2nd stage
- 1st stage = pressure reducer with DIN connector
- 2nd stage = demand valve with mouthpiece

The second stage works according to the demand principle. This means that there's only gas flowing when breathing in. When no breathing is taking place or during breathing out, the gas flow is automatically stopped and the exhaled breath is directed out of the demand valve via a diaphragm.

From this follows that the gases that are breathed out **never** mix with the gas that's breathed in (-> pureness of the nitrogen/helium atmosphere). Furthermore it reduces the required amount of gas dramatically, because there's not a permanent flow, but just during breathing. The fact that there isn't gas emitted into the ambient air continually also means that others won't be in danger when the person is found.

If you put the search term regulator into eBay, you immediately get numerous offerings of used diving regulators. Often the devices offered on eBay include additional features like octopus (secondary demand valve) or finimeter (pressure gauge). if something like that is included, it doesn't matter, but it's unneeded for our purposes and only makes the thing more expensive.

There are also numerous dealers of diving equipment on the net apart form eBay, all of which sell used equipment. Just google it.

The picture above for example is an item from this company:

http://www.orcawal-berlin.de

for 69€

When making a purchase, make sure the **1st stage has DIN threads for 200 bar tanks**, so it can be connected via adapter to the nitrogen/helium tank. There are also **INT** connectors, but those don't fit the adapter. If it isn't clearly specified in the eBay auction, just ask the seller.

2. Nitrogen/helium tank, purity at least 2.8

The gas should have at least a purity of 2.8. There are several levels which are usually stated by the sellers. The first digit specifies the number of "nines". The second digit is the actual last digit after the decimal point.

So 2.8 corresponds to a purity of 99.8%. The highest commercially available purity is 6.0, which corresponds to 99.99990%. The higher the purity, the higher the price.

To calculate the required amount of gas, the following factors have to be determined:

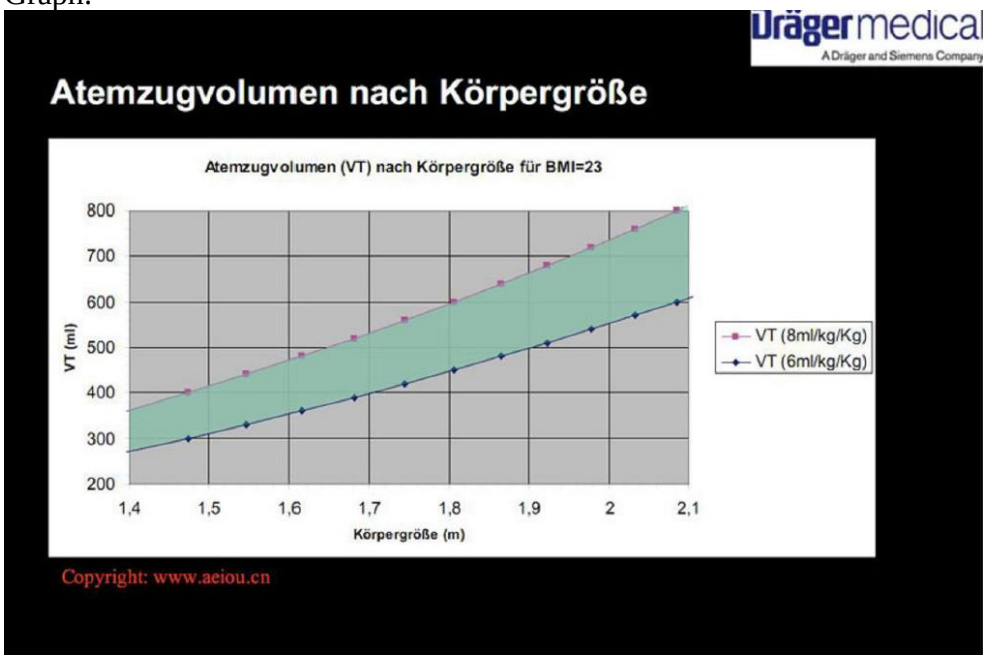
- breathing rate / minute
- tidal volume
- minute volume
- maxmimum duration until death sets in

At the end you'll realize that even the smallest available size of tank is enough to kill you several times over, even with the addition of considerable safety margins.

The **breathing rate per minute** for an adult is given as about 15 at rest and about 22 at medium heavy work or stress in the relevant medical literature. Since unconsciousness sets in after 4-5 breaths, longer phases of stress and with that longer durations of an elevated breathing rate can be ruled out.

The **tidal volume** is not identical with the total lung capacity, but rather is the amount which is breathed in and out during normal breathing and constitutes about 600 to 750 ml for an adult, depending on height and weight. So only about 1/5 to 1/6 of the total lung capacity. To account for a possible increased consumption because of a higher body weight (BMI greater than 23), add a safety margin of 100% for the calculations and estimate 1500 ml as the tidal volume.

Graph:



Headline: tidal volume by height
Graph caption: tidal volume (VT) by height for BMI=23
X axis: height (m)

The **maximum duration until death (brain death)** when continually breathing a highly pure nitrogen/helium atmosphere is estimated as 1-3 minutes in literature. (Also refer to Dr. Raj in the above mentioned BBC report concerning this)

For the calculations I'll assume that we're all extremely though ;) and will hang on for twice the maximum duration, so 6 minutes, and will even be breathing until the last second, which is really very optimistic or rather unrealistic.

From **breathing rate * tidal volume** we can now calculate the **minute volume**:

22 * 1500 ml = 33 l/min

The **minute volume * maximum duration until death** gives us the **maximum needed amount of gas**:

33 l/min * 6 min = 198 l

A 3 liter gas tank, which is only filled to 150 bar due to its low wall thickness, already contains **3 l x 150 = 450 l** of gas. This is 2.3 times the maximum needed amount calculated above, even though I already added considerable safety margins (100% respectively) in the multiplications.

The next larger tank size has a volume of 5 liters and a pressure of 200 bar. Everyone can figure out for themselves that the 1000 l contained within are 5 times the maximum needed amount. The right size for all safety fanatics. :)

Nitrogen/helium can be bought on eBay (including delivery) or directly from a local gas dealer and not least countrywide (meaning Germany) from the following companies:

http://www.ludenbach.com
http://www.techni-gase.de
http://www.fischer-gase.de

A 3 liter tank of nitrogen 2.8 for example costs 75€ + 7.50€ shipping at techni-gase.de. It has a height if 55 cm, a diameter of 10 cm and weighs 4.5 kg. (also available on eBay)

The 5 liter tank from the same dealer costs 109€ + 9€ shipping. It's 58 cm high, has a diameter of 14 cm and weights 11 kg.

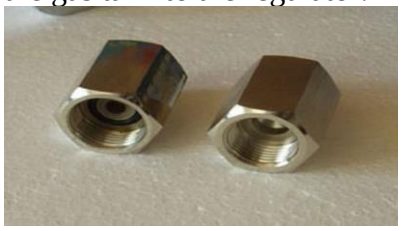
At local dealers you can normally assume even lower prices.

Don't worry about being asked what you need the gas for. Nitrogen has so many applications, like filling tires, use as a propellant in fire extinguishers, conservation of works of art, leak detection in pressure lines and not even mentioning the industrial applications, so nobody is going to care about what you're planning to do with it.

Furthermore it's something that can be freely sold and not a controlled substance so that in extreme cases you can just point out to the seller that it's none of their business. I've sent several inquiries to dealers and was never asked for an intended purpose but was always greeted friendly as a new customer.

3. Adapter for connecting the tank to the 1st stage of the diving regulator

For safety reasons, oxygen tanks have different threads than nitrogen or helium tanks. So you don't accidentally connect a diving regulator to a gas tank. Abroad they have a somewhat more relaxed view of this and so you can buy appropriate adapters that allow you to connect the gas tank to the regulator.



Before you order the adapter, you have to decide for helium **or** nitrogen because the tanks have different threads and therefore require different adapters.

Both adapters can for example be ordered here:

Helium adapter (also for other noble gases like argon):
Thread adapter pressured air G 5/8" internal thread - noble gas W21.8 internal thread
http://www.tek-diver-shop.de/de/Gewindeadapter/Gewindeadapter-200-200-bar/Gewindeadapter-Druckluft-G-5-8-Innengewinde-Edelgas-W218-Inn.html

Nitrogen adapter:
Thread adapter pressured air G 5/8" internal thread - nitrogen W24 internal thread
http://www.tek-diver-shop.de/de/Gewindeadapter/Gewindeadapter-200-200-bar/Gewindeadapter-Druckluft-G-5-8-Innengewinde-Stickstoff-W24-In.html

Each costs 19.50€ plus shipping.

4. Full face diving mask

To ensure that the regulator's mouthpiece doesn't fall out of your mouth, you can either attach it to your head using a rubber band (like a dust mask) and at the same time wear a clip on your nose and in addition bind a bit of plastic wrap folded to 5 cm width vertically around your head so your chin doesn't drop when your muscles go limp and you don't start breathing secondary air instead of gas...

Or you can do it the right way and use a full face mask like divers use for ice diving.

It looks a bit menacing, but serves its purpose brilliantly. The mouth opening has the perfect fit to take in the mouthpiece of the regulator.

The masks cost about 45€ new on eBay plus shipping. Manufacturers are **Cressi-Sub** or **Poseidon**.

Available for example here: http://stores.shop.ebay.de/ww-LM-Trade__W0QQ_armrsZ1

A used one will work just as well though and can be bought for about 30€ plus shipping.

That's it, now we can start with the assembly

Picture 1:

- tank
- full face mask
- diving regulator
- adapter

Caption picture 2: Gas tank, to the left the handy package in which it was sent to me, by the way.

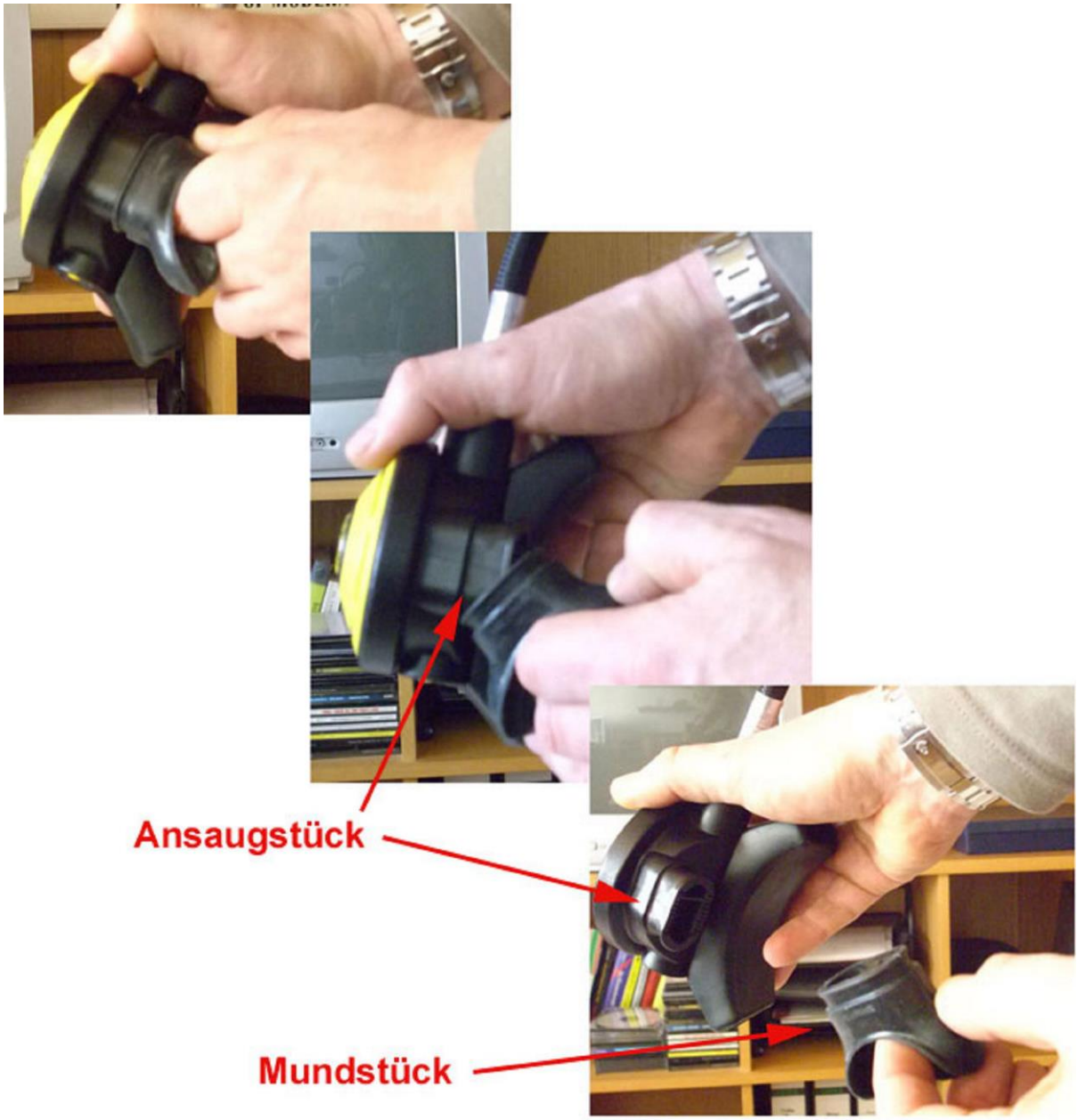
Setup

First you screw the tank adapter onto the tank valve. You can't do anything wrong here because it only fits one way.

Picture: screw adapter onto valve

If necessary, tighten a bit more using a wrench. No great effort is needed since the adapter is equipped with o-ring seals on the inside.

Then on to the diving regulator: Remove the mouthpiece. If it's secured with a zip tie, first cut that using a knife or scissors. It doesn't matter if the rubber mouthpiece gets damaged during this, we're not going to need it anymore.



pictures:

- intake port
- mouthpiece

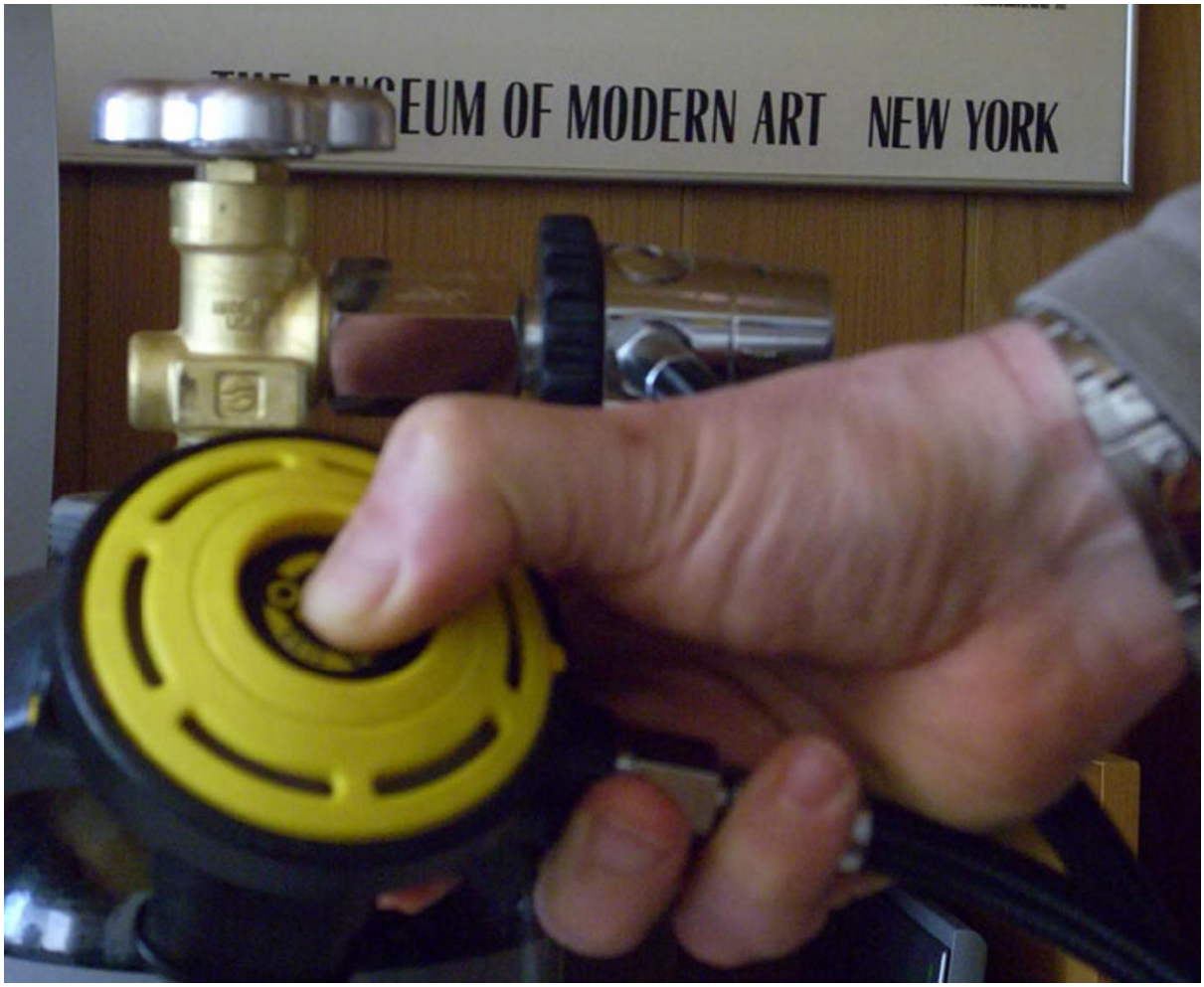
Next, put some fat, butter, margarine (or whatever can serve as a lubricant) on the bare intake of the regulator, so it can be inserted without force into the mask's mouth opening. Of course, alternatively you can lubricate the mask's mouth opening a little.

Now the regulator is screwed onto the other side of the adapter. The threads of the regulator are equipped with an o-rong seal too, so screwing it on hand-tight should be enough.

After that, open the gas tank's valve and test the system for leaks. If we've done everything right, **no gas** should flow now. (Since gas only flows during breathing.)

If you can hear a hiss somewhere:
Close the valve again and tighten all the screw couplings we just assembled a bit.

Next we'll check the regulator function. For that, open the tank and press the purge button in the middle of the demand valve. (Looks different for some models but it's present on ALL regulators.) When holding the button down, gas flows through the intake, when releasing it the gas flow stops.



Finally adjust the mask. For that, adjust the straps to you individual head size. The mask should not sit too tight.

Pic: adjust strap length

You can check if it sits right by putting it on, closing the mouth opening with your palm and trying to breathe in. If the mask pulls a little closer to your face due to the underpressure, it's tight enough.

To preserve my anonymity I'll not demonstrate this step.

That's it

1. Get into a comfortable sitting position, ideally slightly reclined backwards or lie down.
2. Put on mask.
3. Insert intake of the regulator into the mouth opening of the mask

Pic: Insert intake into the mouth opening AFTER putting the mask on

4. Continue breathing normally. Unconsciousness kicks in after a few breaths.

For myself, I've hereby found the optimal method. My search and also my presence in this forum are over.

Thanks to everyone who looked into the problems of the exit bag method and got me to look into a setup that eliminates my fears and insecurities regarding the reliability of the nitrogen/helium inhalation method.

I'm not acutely suicidal, but finally know **what** I have to do and **how** in case I can't or don't want to go on anymore.

I have installed the complete apparatus into a trolley and am thereby capable to realize my idea of a humane, pain free death that meets my ethical requirements everywhere and at any time.

I wish you all the best,
Scrooge