

13 Ways to Run Out of Air & How Not To

Diver's handout with facilitator's notes - 11/19/2022,
Estimated duration: 30 minutes

I. INTRODUCTION:

1. **Divers can avoid most out-of-air emergencies through skillful planning, vigilance, and equipment maintenance, as presented in this discussion and in DAN's *13 Ways to Run Out of Air & How Not To* guide.** These, combined with additional reinforcing studies, teach divers how to manage their breathing gas supply, so they don't run out of air.

2. NEED:

a. Divers need not fear or worry about running out of air. They only need to follow a simple redundant set of procedures or skills taught in this presentation to prevent or mitigate a low-air situation before it becomes an emergency.

b. This presentation teaches or reacquaints divers with the skills that will allow them to enjoy safer, relatively stress-free dives. The references assist divers in expanding their understanding of air management.

II. DISCUSSION:

1. Pre-dive Checks and Buddy Checks can prevent many out-of-air emergencies by checking or verifying:

a. BCD.

b. Weights.

c. Air, tank valve completely open, pressure gauge and computer (setting remaining dive time and low-pressure alarms). Breathe each regulator three times while watching for gauge fluctuation.

d. Final Check: Executable plan with specific air procedures and signals.

2. Prevent running low on air:

a. Maintain your equipment.

b. Be aware and vigilant.

(1) Check air status as you descend and periodically during the dive. Ensure you and your buddy know each other's air status and that you are diving the plan.

(2) Air-integrated computers greatly assist in monitoring air status. Most show gas available in pressure and minutes of dive time remaining with alarms that let you know when you are running low.

c. Check other divers' air status.

3. Use less air by:

a. Reducing body movement/swimming and using an efficient kick.

b. Diving with neutral buoyancy and proper trim.

c. Diving shallower.

d. Minimizing movement and depth changes.

e. Reducing anxiety (see reference c) by:

(1) Building skills and confidence in your buddy.

(2) Executing proper buddy check and dive the briefed plan.

(3) Servicing and inspecting equipment, including a surface marker buoy.

(4) Setting low air & dive time remaining on an air-integrated computer.

(5) Relaxing and gaining experience.

4. Mitigate low air situations by:

- a. Communicating low air status to buddy and dive leader and following the pre-dive briefing.
- b. Swimming higher in the water column (15-foot safety stop depth is ideal).
- c. Staying close to a buddy or diver with more air anticipating sharing air.
- d. Surfacing.

III. DAN's Smart Guide to air consumption, *13 Ways To Run Out Of Air And How Not To*, cites:

- | | |
|--|--|
| 1. Diving too deep. | 8. Frequent depth changes and BCD adjustments. |
| 2. Staying too long. | 9. Omitting pre-dive checks and Buddy checks. |
| 3. Working too hard. | 10. Regulator problems. |
| 4. Not monitoring pressure gauge/computer. | 11. BCD problems. |
| 5. Ignoring anxiety as a factor. | 12. Pressure gauge/computer problems. |
| 6. Starting with less than a full tank. | 13. Burst O-ring or hose. |
| 7. Not opening the tank valve all the way. | |

IV. Exercise: Show the out-of-air video https://www.youtube.com/watch?v=30Dh0W_cPpg (5:55 mins)

1. In the video of the out-of-air diver, the diver added to the problem by:
 - a. The diver exacerbated the situation through poor decisions and:
 - (1) Not diving with a buddy.
 - (2) Omitting pre-dive planning and buddy checks.
 - (3) Lack of awareness.
 - (4) Working too hard (flailing arms and excessive nervous swimming).
 - (5) Staying too long.
 - (6) Ignoring anxiety as a factor (rapid shallow breathing).
 - (7) Frequent depth changes.
 - (8) Not mitigating low air situation

Made 7 of the 13 listed DAN mistakes
 - b. The diver prevented a critical emergency and mitigated the lack of air by:
 - (1) Not panicking.
 - (2) Communicating the situation to Divemaster.

V. REFERENCES:

- a. DAN's online (downloadable PDF) Smart Guide, *13 Ways to Run Out of Air & How Not To*, is available for download at - <https://dan.org/health-medicine/health-resource/smart-guides/13-ways-to-run-out-of-air-how-not-to>
- b. Out-of-air video - https://www.youtube.com/watch?v=30Dh0W_cPpg .
- c. The Complete Panic Prevention Program by Tom Griffiths, Ed.D., NAUI 6448, - <https://sites.google.com/site/divepsych> "is excellent for certified divers who are concerned about their first big dive, who has scrubbed a dive out of stress or who has panicked or nearly panicked underwater and is contemplating giving up the sport and diver who would like to better prepare themselves to react safely in stressful situations."
- d. Estimating Your Air Consumption - <https://dan.org/alert-diver/article/estimating-your-air-consumption/>

Please send comments and suggestions to Westpotter@aol.com