

Desert Survival Exercise

Expert Ranking and Rationale

Alonzo Pond is the desert survival expert who has contributed the basis for the item ranking. He is the former Chief of the Desert Branch of the Arctic, Desert, and Tropic Information Centre of the Air Force University at Maxwell Air Force Base. During World War II Mr Pond spent much of his time working with the Allied Forces in the Sahara on desert survival problems. While there, and as Chief of the Desert Branch, he encountered the countless survival cases which serve as a basis of the rationale for these rankings.

1. **Cosmetic mirror**

Of all the items the mirror is absolutely critical. It is the most powerful tool you have for communicating your presence. In sunlight a simple mirror can generate 5 to 7 million candle power of light. The reflected sunbeam can even be seen beyond the horizon. If you had no other items you would still have better than an 80% chance of being spotted and picked up within the first 24 hours.

2. **One top coat per person**

Once you have a communication system to tell people where you are, your next problem is to slow down dehydration. 40% of the body moisture that is lost through dehydration is lost through respiration and perspiration. Moisture lost through respiration can be cut significantly by remaining calm. Moisture lost through perspiration can be cut by preventing the hot, dry air from circulating next to the skin. The top coats, ironic as it may seem, are the best available means for doing this. Without them survival time would be cut by at least a day.

3. **One quart of water per person**

You could probably survive 3 days with just the first 2 items. Although the quart of water would not significantly extend survival time, it would help to hold off the effects of dehydration. It would be best to drink the water as you become thirsty, so that you can remain as clear-headed as possible during the first day when important decisions have to be made and a shelter built. Once dehydration begins it would be impossible to reverse it with the amount of water available in this situation. Therefore, rationing it would do no good at all.

4. **Flashlight**

The only quick, reliable night signalling device is the flashlight. With it and the mirror you have 24 hour signalling capability. It is also a multiple use item during the day. The reflector and lens could be used as an auxiliary signal device or for starting a fire. The battery container could be used for digging or as a water container in the distillation process (see plastic raincoat).

5. **Parachute**

The parachute can serve as both shelter and signalling device. The saguaro cactus could serve as a tent pole and the parachute shrouds as tent ropes. Double or triple folding the parachute would give shade dark enough to reduce the temperature underneath it by as much as 20%.

6. **Jack knife**

Although not as crucial as the first 5 items, the jack knife would be useful for rigging the shelter and for cutting up the very tough barrel cactus for moisture. It's innumerable other uses gives it the high ranking

7. **Plastic raincoat**

In recent years the development of plastic, non-porous materials have made it possible to build a solar still. By digging a hole and placing the raincoat over it the temperature differential will extract some moisture from urine-soaked sand and pieces of barrel cactus and produce condensation on the underside of the plastic. By placing a small stone in the centre of the plastic, a cone shape can be formed and cause moisture to drip into the flashlight container buried in the centre of the hole. Up to a quart a day could be obtained in this way. This would be helpful, but not enough to make any significant difference. The physical activity required to extract the water is likely to use up about twice as much body water as could be gained.

8. **.45 Calibre pistol**

By the end of the second day speech would be seriously impaired and you might be unable to walk (6 – 10% dehydration). The pistol would then be useful as a sound signalling device and the bullets as a quick fire starter. The international distress signal is 3 shots in rapid succession. There have been numerous cases of survivors being undetected because they couldn't make any loud sounds. The butt of the pistol might also be used as a hammer.

9. **A pair of sunglasses per person**

In the intense sunlight of the desert, photophobia and solar retinitis (both similar to the effects of snow blindness) could be serious problems, especially by the second day. However, the dark shade of the parachute shelter would reduce the problem, as would darkening the area around the eyes with soot from the wreckage. Using a handkerchief or compressed material as a veil with eye slits cut into it would also eliminate the vision problem.

10. **Compress kit with gauze**

Because of the desert's low humidity it is considered one of the healthiest (least infectious) places in the world. Due to the fact that the blood thickens with dehydration, there is little danger from bleeding unless a vein is severed. In one well-documented case a man, lost and without water, who had torn off all his clothes and fallen among sharp cactus and rocks until his body was covered with cuts, didn't bleed until he was rescued and given water.

11. **Magnetic compass**

Aside from the possibility of using its reflective surfaces as an auxiliary signalling device, the compass is of little use. It could even be dangerous to have around once the effects of dehydration take hold as it might give someone the notion of walking out.

12. **Sectional air map of area**

Might be useful for starting a fire or for toilet paper. One man might use it for a head cover or eye shade. It might have entertainment value but it is essentially useless and perhaps dangerous as it too might encourage walking out.

13. **Book entitled "Edible Animals of the Desert"**

The problem confronting the group is dehydration, not starvation. Any energy expended in hunting would be costly in terms of potential water loss. Desert animals, while plentiful, are seldom seen. They survive by laying low as should the survivors. If the hunt was successful, the intake of protein would cause an increase in the amount of water used to process the protein in the body. General rule of thumb – if you have lots of water eat, otherwise don't consume anything. Although the book might contain useful information it would be difficult to adjust your eyes to reading and remain attentive as dehydration increases.

14. **2 quarts of 180 proof vodka**

When severe alcoholism kills someone they usually die of dehydration. Alcohol absorbs water. The body loses an enormous amount of water trying to throw off the alcohol - estimated loss of 2-3 oz of water / oz of alcohol. The vodka consumed could be lethal in this situation. Its presence could cause someone in a dehydrated state to increase the problem. The vodka would be helpful for a fire or as a temporary coolant for the body. The bottle might also be helpful. All in all, the vodka represents more danger than help.

15. **Bottle of salt tablets**

Widespread myths about salt tablets exist. The first problem is that with dehydration and loss of water the blood salinity increases. Sweat contains less salt than extra cellular fluids. Without lots of extra water the salt tablets would require body water to get rid of the increased salinity. The effect would be like drinking sea water. Even the man who developed salt tablets now maintains they are of questionable value except in geographical areas where there are salt deficiencies.