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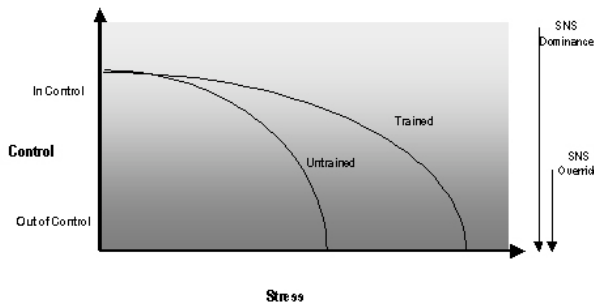
The effect of training on the effects of stress

By Ralph Mroz

There has been a great deal written during the last 25 years about the effects of stress on performance in both the academic and research literature, and in the practical literature such as this magazine. Yet there are still a few ongoing debates in our field-the use of a firearm in critical incidents and the teaching thereof-that are debated at all only because of a lack of understanding of how stress affects performance. And some of these debates are critical to what we teach and how we teach it. Or, from another perspective: lives depend on a proper understanding of the issues debated. We are talking about such things as sighted vs. un-sighted fire, movement vs. freezing, fine/complex motor skills vs. gross skills, and so on.

The debates over these issues are not, surprisingly, dead-neither on the printed page nor in practice. You still see different people teaching sighted and un-sighted fire, and hotly defending their doctrine in print. You still see some people teaching a fine and/or complex motor skill technique as a solution to a problem while others teach a gross motor skill in response to the same problem-and each side defends their actions vociferously in print. You still see people teaching movement (usually to cover) as a universal imperative, with very little thought or ink given to the view that such an action may not be possible under the worst of circumstances.

The reason that these differences still exist, and the reason that there is still confusion over these issues in our field, is because there is an incomplete practical understanding of the effects of stress as they relate to the effects of training. Lets review what we know here-it's not difficult nor particularly complex.



The nervous system is divided into the Somatic Nervous System which controls organs that are under voluntary control (mainly muscles), and the Autonomic Nervous System which directs our bodily functions (like heartbeat and respiration) without conscious thought. The Autonomic Nervous System is itself divided into two basic branches. One, the Parasympathetic Nervous System (PANS), is concerned with conservation and restoration of energy, as it causes a reduction in heart rate and blood pressure, and facilitates digestion and absorption of nutrients, and consequently the excretion of waste products. In contrast to the Parasympathetic Nervous System, the Sympathetic Nervous System (SNS) enables the body to be prepared for fear, flight or fight. Sympathetic responses include an increase in heart rate, blood pressure and cardiac output, a diversion of blood flow from the skin and splanchnic vessels to those supplying skeletal muscle, increased pupil size, bronchiolar dilation, contraction of sphincters and metabolic changes such as the mobilization of fat and glycogen.

While the relative effects of the PANS and the SNS fluctuate as we go through our lives on a minute-to-minute basis, they are usually in balance with one another and within normal bounds so long as nothing unusual is happening to us. However, when we perceive danger, the SNS tends to dominate the PANS, a condition I call SANS dominance. (The term Body Alarm Reaction refers to the same thing-to this shift toward SANS dominance.) But SANS dominance is a relative affair. At its mildest levels, SANS dominance occurs when we anticipate something stressful. Its most extreme manifestation occurs if we find ourselves startled by a spontaneous deadly threat. It is this extreme state of SANS dominance which I call SANS override. In a state of SANS override, we have no conscious control over our responses, and we are completely at the mercy of Mother Nature's genetically programmed reactions. In a state of SANS override we cannot help but lose fine motor control, we cannot help but look at the threat (not our sights), we cannot help but crouch, and we may not even be able to move (we may freeze in place.)

One of the things that's often not understood is that this pattern holds true for each and every one of us. Regardless of training level, the more stress we are under, the greater the SANS dominance, and thus the less voluntary control we have over our physiological mechanisms and even muscle control. Training does not overcome the tendency towards SANS override as the stress we are exposed to increases. The most highly trained operator in the world will target focus, freeze in place, and become incapable of anything but gross movements if placed under enough stress.

What does differentiate the trained person from lesser trained person is the amount of stress they can be under and still function acceptably well. In fact, realistic training is often fittingly called "stress inoculation." While such training does not actually completely immunize you from the effects of SANS dominance and SANS override, it shifts the curve so that it takes more stress to cause the same amount of dysfunction that a smaller amount of stress would cause in a less well-trained



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person. That is, given a certain situation, a trained person will remain in acceptable control his/her reactions, while a lesser trained person will default to the effects of body alarm. A well-trained operator, placed in a dangerous but familiar situation-one that they have been through many times in training-may well be able to focus on their sights, keep their heart rate under control, and be able to perform fine motions such as weapons manipulations. Another person, placed in the same situation, but one they are less familiar with because they have trained in it less, may well tip over into SNS override.

So when we discuss the relative merits of, say, sighted aiming vs. threat-focused aiming, we have to make sure we are specifying two parameters without which the discussion is meaningless (as so many of these discussions actually are): we have to specify the level of training we are assuming in the operator, and we have to specify the level of stress they will be under. The level of stress is usually proportional to the control the operator has over the situation and the level of surprise he/she is under. A well-trained SWAT officer making a entry or felony stop is both in control of the situation and is not surprised by it (in fact, they are initiating it.) Thus it will not be a surprise if such an officer remembers, for example, clearly seeing their sights if shooting erupts in such a situation. A rookie, on the other hand, placed in the same situation, could well be expected to threat-focus. Likewise, on that same SWAT entry, if things suddenly go in a direction that no-one anticipated-say a bad guy suddenly pops out of a surprise location-then, losing control and surprised, the same SWAT officer could be expected to threat-focus.

I haven't made a hobby out of interviewing prodigious numbers of gunfight participants about what happened to them, whether they saw their sights, etc. I'm in no position to do so anyway. But I have heard or read a number of both first and second-hand accounts from gunfight survivors and victors, and there is definitely a pattern in both these stories and many others that are reported to me. And it is this: when people are taken by surprise, or when things go to hell (i.e., they lose control), then no one see their sights! Events have forced them into a state of SNS override. And I'm talking here about the most competitively selected, highly trained, supremely talented warriors that this earth has ever produced. Ladies and gentlemen: if they threat focus under extreme stress-if even they enter SNS override sometimes-what arrogance makes you think you won't?

So what does all this mean for training? It doesn't give us a one-size-fits-all answer, but points us in two directions. It lets us understand the issues involved clearly so that we can design our training intelligently. The lessons we can take are:

- We should familiarize our people with more stress than they will face in their most likely encounters, so that they will not enter SNS override during them. This means that we need to train exactly as we will have to fight-and maybe harder. Staying out of SNS override, our people will be able to access a variety of techniques, including sight focus and those involving finer motor skills.
- We also-not instead-need to train our people in the few techniques that are available in a state of SNS override-threat focus, gross techniques, etc.-because if the event is spontaneous enough or not familiar enough or when control is lost, our people will for sure enter SNS override...and they still have to fight for their lives there!

Finally, we need to avoid the conceit that because we have trained a number of people to perform a skill under stress, that that skill is "validated" as combat-worthy. The fact is that such skills are validated as useful only so long as the stress level in training is not exceeded. In an actual encounter, stress levels can go much higher than in training for several reasons, and once they do, our people will enter SNS override where only a few hard-wired techniques will work. The reasons that stress in an actual fight can far exceed stress in the training environment include:

- It is for real. No one really thinks they will die in training.
- It is not under our control to a small or great degree
- We may be out-gunned, out-classed, or out-numbered
- It takes us by surprise

Again, the lesson is to train for our likely encounters with the most effective techniques, as realistically as possible. And to train in the few techniques that work is the situation goes to hell and we are at Mother Nature's mercy.

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