

A Force Multiplier

Sleep

by 1stLt James Skeffington, USMCR

After a wearing approach march and entrenching, two rifle companies went into perimeter on adjoining ridges. They were the same strength; the positions were about equal. Both units were dog tired. One commander ordered a 100 percent alert. The other put his men in the sacks and, with a few of his NCOs, kept watch. Thirty minutes later, the Chinese attacked. The first company was routed and driven from its hill immediately. The second bounded from its sleeping bags, fought like tigers, and held the position until finally ordered by battalion to withdraw.¹

These two rifle companies fought in the Korean War, when water discipline was a normal part of training.

Somewhere between then and now, things changed. Marines now understand the importance of drinking water.

Sleep is the new water, and sleep deprivation is the new water discipline.

>1stLt Skeffington is an artillery officer (0802) currently serving with Q Battery, 5th Battalion, 14th Marines, 4th MarDiv.

Like water, we misunderstand the importance of sleep, we don't sleep enough, and we treat sleep more like an annoyance than the vital resource it is. As we did with water, we need

... sleep is the new water, and sleep deprivation is the new water discipline.

to change our customs and practices around sleep. We need to stop treating sleep as an afterthought and start treating sleep as the valuable resource it really is.

The Science of Sleep

Humans spend a third of their lives sleeping, and yet we still do not completely understand sleep. What happens while we sleep? How does sleep rejuvenate our bodies and our minds? What is the evolutionary reason for sleeping? Scientists have hypotheses, but no concrete answers to these questions.

What scientists do understand, however, is the importance of sleep. In one study, scientists kept 10 rats awake for

days. The rats developed lesions on their skin, and, despite consuming additional calories, they lost weight when their metabolic systems failed. The rats eventually died.

Studies on human subjects also demonstrate the negative consequences of sleep deprivation. Everything from attention, to memory, to visuomotor performance, to decision making and judgment (both moral² and logical³) suffers when participants are deprived of sleep.⁴ In summary, our brains become slower and make more mistakes when deprived of sleep.

Some very clever scientists devised a study equating sleep deprivation with alcohol consumption.⁵ After 17 to 19 hours without sleep, the intoxicated participants (BAC [blood alcohol content] of .05) performed as well or better than the sleep deprived participants on various tests in terms of reaction time, memory, and eye coordination. After another hour without sleep, the legally intoxicated research participants (BAC of .10) performed better than the sleep deprived participants. Sleep deprivation



Sleep is the new water, and sleep deprivation impacts his combat effectiveness. (Photo by Cpl Kowshon Ko.)

can be more dangerous than alcohol consumption.

Outside the laboratory, findings are similar. We shoot less accurately,⁶ make riskier decisions,⁷ and involuntarily fall asleep more frequently after a long time without rest.⁸ In one study, soldiers in fire direction centers (FDC) processed fire missions more slowly and less accurately after being deprived of sleep. Considering that an FDC is the brain of an artillery battery, this result mimics the laboratory findings that our brains function more slowly and less accurately when deprived of sleep.

Figure 1 displays a graph of their productivity, extrapolated over 22 days.⁹ Notice how the sleep deprived FDCs were able to produce more at first—those extra hours awake meant additional missions. By day three, however, their counterparts more than made up the difference. By day six, the seven-hour FDC was producing twice as much firepower than the four-hour group. That is a force multiplier; that is economy of force in action.

Despite documented benefits of sleep, we continue to deprive ourselves of it. We need between 7 and 9 hours of sleep every 24 hour period.¹⁰ The average civilian gets 6.92 hours of sleep each day and the average non-deployed service member averages 6.56 hours.¹¹ In environments like Army Ranger School and at Service academies, the average trainee gets closer to 3.20 hours¹² and 5.77 hours¹³ per day, respectively. Anecdotal evidence suggests that combatants may only get just minutes of sleep for

days on end when the enemy situation is precarious.¹⁴

Predictably, such severe sleep deprivation leads to severe mishaps. Perhaps the most famous occurred during the Battle of Savo Island near Guadalcanal.¹⁵ Before the battle began, the Destroyer USS *Blue* (DD-387) received intelligence that a Japanese flotilla was in the area. The captain put his crew on 100 percent alert. Three days later, eight Japanese ships passed undetected within a mile of the USS *Blue*. The lookouts were likely “droning”—involuntarily sleeping—and didn’t see the Japanese ships as they passed through their formation. The Japanese ships went on to sink four allied cruisers and kill over 1,000 sailors, a perfect example of what scientists innocuously describe in a laboratory as “reduced cognitive vigilance resulting from total sleep deprivation” being gruesomely actualized in combat.

The Insidious Nature of Sleep Deprivation

What makes sleep deprivation so malevolent is its “insidious nature.”¹⁶ The more we are deprived of sleep, the worse our cognitive abilities become. Our judgement erodes, so we incorrectly conclude that we’re fine. This conclusion leads to the bad decision to delay sleep further, which starts the whole cycle all over again. (See Figure 2.) As time passes, the sleep deprivation loops tighten as we slowly neutralize the one faculty that can help us escape the cycle—our brain.

Feeding the cycle are a host of compounding dynamics. For one, the ef-

fects of sleep deprivation are usually masked by mitigating factors. The lab rats did not technically die of sleep deprivation; they died when their essential bodily systems failed. The root cause of death—sleep deprivation—was masked by other factors swirling around it. Also, the negative effects of sleep deprivation

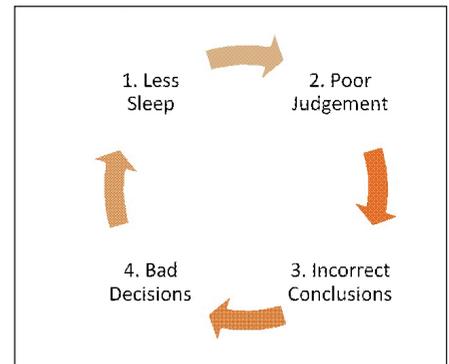


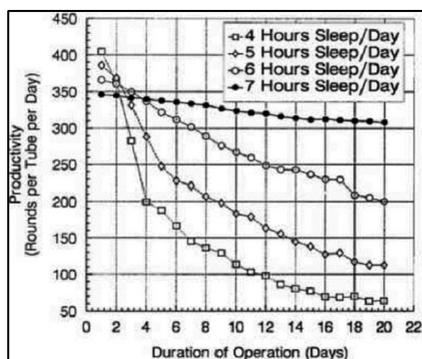
Figure 2. The sleep deprivation cycle. (Illustration by author.)

are not distributed evenly among all our faculties. Sleep deprivation affects us physically but not nearly as much as it affects us mentally. We can still walk, talk, and pull a trigger, so our impaired minds conclude that everything is fine. In reality, we are just a shell of ourselves.

Ironically, the most harmful dynamic is our warrior ethos, which sometimes manifests itself as stoic self-denial.¹⁷ We celebrate when Marines like John Basilone hold off an entire Japanese regiment with nothing more than “a machine gun on the go for three days and nights without sleep, rest or food.”¹⁸ This warrior ethos is the most important tool a Marine brings to battle; it is powerful, and we should use it, but it is not inexhaustible.

We are correct to celebrate great Marines like John Basilone, but we should also celebrate Marines like Gen Oliver P. Smith at Chosin Reservoir.

The remnants of the Army’s 7th Division elements ... had been enveloped by the enemy for the greater part of one week. The cold, the privation and the suffering at the hands of the [Chinese Communist Forces] had been extremely harsh throughout. In the case of these men, Major General Oliver Smith felt that at least 48 hours total rest was essential ... Though the enemy vise steadily tightened, he still



Bareis, Donna. “Evaluation of Sleep Discipline in Sustaining Unit Performance.” Science Applications International Corps. McLean, VA. 1999.

Figure 1. FDC productivity.

rested his troops ... Of this care, came the big payoff to him and to his people [when they marched] out with the column from Hagaru-ri ... A more precipitate, but less bold, leader would have started lunging from the hour when Hagaru-ri and Yudam-ni became enveloped and, 1st Marine Division would never have come down the mountain to the sea.¹⁹

Treat Sleep like Chow and Water

The status quo is to continue treating sleep as an afterthought, a nicety, a comfort. The knee-jerk reaction is to prescribe more sleep for all-hands. The preferred solution is simply to treat sleep as what it really is: a valuable resource.

Once we understand the importance of sleep, we will change our perspective on it. Once we understand the effects of sleep deprivation, we can properly weight its costs and benefits. Once we understand how important sleep is, we will stop treating it as an annoyance and start treating it as the essential resource it is.

The solution does not involve bringing operations to a screeching halt at 2100 every night. Nor does it involve another MarineNet class to complete each year. That may be feasible in the airline or trucking industries, but it is not feasible in ours. Sleep deprivation is a part of combat, and there are legitimate times when we must fight and win on little or no sleep. However, that does not preclude us from marshaling our resources better.

We should equate sleep with chow and water. If we teach Marines about the importance of chow and water, then we should teach them about the importance of sleep. If we include chow and water in paragraph four of our operations order, then we should include sleep too. And if we must sometimes fight with parched lips and empty stomachs, then we must sometimes fight with heavy eyes.

Sleep is a valuable resource. It is time to start treating it as such.

They had marched for days and they were hungry and tired—terribly tired. Nothing was known of the enemy. Put yourself in this young battalion commander's place. What would your decision be? This was his ... The battalion will go into

*bivouac for the time being ... Get some sleep and see if you can find something to eat ... One double sentry post stood well concealed in the south edge of the village and observed the forest. Think of this strange situation! A division is resting during its retreat and has charged a battalion, which consists of only 130 men, to secure its safety. Compare this situation with the one in the early days of the war, when 80 excited men guarded 160 other men during their rest.*²⁰

Notes

1. S.L.A. Marshall, *The Soldier's Load and the Mobility of a Nation*, (Quantico, VA: Marine Corps Association, 1980), vi.
2. O.K. Olsen, S. Pallesen, and J. Eid, "The Impact of Partial Sleep Deprivation on Moral Reasoning in Military Officers," *Sleep*, (Bethesda, MD: National Center for Biotechnology Information, 2010), 1086–90.
3. Robert G. Angus and Ronald J. Heslegrave, "Effects of Sleep Loss on Sustained Cognitive Performance During a Command and Control Simulation," *Behavior Research Methods, Instruments, & Computers*, (San Francisco, CA: ResearchGate Corporation, 1985), 55–67.
4. P. Alhola, and P. Polo-Kantola, "Sleep Deprivation: Impact on Cognitive Performance," *Neuropsychiatric Disease and Treatment*, (Bethesda, MD: National Center for Biotechnology Information, 2007), 553–67.
5. A.M. Williamson and Anne-Marie Feyer, "Moderate Sleep Deprivation Produces Impairments in Cognitive and Motor Performance Equivalent to Legally Prescribed Levels of Alcohol Intoxication," *Occupational and Environmental Medicine*, (Bethesda, MD: National Center for Biotechnology Information, 2000), 649–655.
6. Louis E. Banderet, James W. Stokes, Ralph Francesconi, Dennis M. Kowal, and Paul Naitoh, "Artillery Teams in Simulated Sustained Combat: Performance and Other Measures," (San Diego, CA: Naval Health Research Center, 1980).
7. William D.S. Killgore, Thomas J. Balkin, and Nancy J. Wesensten, "Impaired Decision Making Following 49h of Sleep Deprivation," *Journal of Sleep Research*, (Bethesda, MD: National Center for Biotechnology Information, 2006), 7–13.

8. N.L. Miller, P. Matsangas, and L.G. Shattuck, "Fatigue and its Effect on Performance in Military Environments Performance under Stress," (Farnham, United Kingdom: Ashgate Publications, 2007).

9. Donna Bareis, "Evaluation of Sleep Discipline in Sustaining Unit Performance," (McLean, VA: Science Applications International Corps, 1999).

10. National Sleep Foundation, "How Much Sleep Do We Really Need?," (Washington, DC: February 2015), accessed at <http://sleepfoundation.org>.

11. Amber D. Seelig, et al., "Sleep Patterns Before, During, and After Deployment to Iraq and Afghanistan," *Sleep*, (Bethesda, MD: National Center for Biotechnology Information, 2010), 1615–1622.

12. Robert J. Pleban, Patrick J. Valentine, David M. Penetar, Daniel P. Redmond, and Gregory L. Belenky, "Characterization of Sleep and Body Composition Changes During Ranger Training," *Military Psychology*, (San Francisco, CA: ResearchGate Corporation, 1990), 145–156.

13. N.L. Miller, L.G. Shattuck, and P. Matsangas, "Longitudinal Study of Sleep Patterns of United States Military Academy Cadets," *Sleep*, (Bethesda, MD: National Center for Biotechnology Information, 2010), 1623–31.

14. N. Miller, P. Matsangas, L. Shattuck, "Fatigue and its Effect of Performance in Military Environments," (Monterey, CA: Naval Postgraduate School Operations Research Department), 231–249.

15. Jonathan Shay, "Ethical Standing for Commander Self-Care: The Need for Sleep," *Parameters*, (Carlisle, PA: U.S. Army War College, 1998), 93–105.

16. Marshall, vii.

17. Ibid.

18. "Gunnery Sergeant John Basilone, USMC (deceased)," United States Marine Corps History Division, accessed at <http://mcu.usmc.mil>.

19. Marshall.

20. Adolf Von Schnell, *Battle Leadership*, (Fort Benning, GA: *The Benning Herald*, 2012), 793.

