

Brandon Lingle

TOURNIQUET

The Iraqi boy beside me
reaches down to slide his fingertip in Retro Colonial Blue,
an interior latex, before writing
T, for *Tourniquet*, on my forehead.

—Brian Turner, “At Lowe’s Home Improvement Center”

Pre-deployment training, Camp Bullis, Texas:

During the block on combat first aid, or Care Under Fire, our instructor pulled out a new tourniquet—a candy-bar shape vacuum-sealed in clear plastic—and called for a volunteer. The instructor handed our classmate the package and yelled, “BOOM! Your right arm’s blown off! Get the tourniquet on! You’re bleeding out.” The simulated casualty, a righty, wrestled the wrapped tourniquet, bit and pulled at the plastic with his left hand. The instructor counted time with a Southern twang, “ten, eleven, twelve seconds.” Now, the student—a flat-topped NCO—bit at the tourniquet and pulled at the Velcro. “Twenty, twenty-one seconds, twenty-two, twenty-three.” He balanced the strap on his right biceps, reached under his arm to grab the end, but it fell. “Thirty-eight, thirty-nine, forty.” He tried again, the strap dropped again. Along with sixty others, I watch as the man struggled against the black strap in a pretend battle for his life. He frowned, his face reddened, sweat clung just below the hairline on his crinkled forehead. The instructor slapped the desk, said, “Stop, you’re dead.” He continued, “Learn this here. Learn this now, dammit. Keep your tourniquets ready. I know the supply guys tell you not to open your first aid kits unless you need ’em, but I’m telling you different. When you need ’em it’s too late.”

Despite all the training and preparation, the mind runs wild in the days before deployment. I always think of the different ways my commander could explain my death to my wife and children. No matter the circumstance that story will always positively portray the fallen. Siegfried Sassoon wrote in “The Hero” that an officer told a dead soldier’s mother “some gallant lies / That would nourish all her days no doubt.” I didn’t want anyone to be forced to concoct a story about me. I paid

attention in training because my life depended on it, and I knew that all the training and equipment in the world couldn't stop a bomb or bullet meant for me.

WARNING:

This is a single use product. The use of any tourniquet is A LAST RESORT and should only be employed when bleeding cannot be stopped and the situation is life threatening.

Instructions for Use: Two-handed Application

1. Apply tourniquet proximal to the bleeding site. Route the band around the limb and pass the tip through inside slit of the buckle. Pull the band tight.
2. Pass the tip through the outside slit of the buckle. The friction buckle will lock the band in place.
3. Pull the band very tight and securely fasten the band back on itself.
4. Twist the rod until bright red bleeding has stopped and the distal pulse is eliminated.
5. Place the rod inside the clip, locking it in place. Check for bleeding and distal pulse. If bleeding is not controlled, consider additional tightening or applying a second tourniquet proximal side by side to the first and reassess.
6. Secure the rod inside the clip with the strap. Prepare the patient for transport and reassess. Record the time of application.

In '04, before the Battle of Fallujah, Marines wore tourniquets wrapped loosely around their biceps and thighs as they rolled into battle. That way, when an RPG took an arm or suicide bomber stole a leg, the Marine was ready. Tighten, twist, secure—mere seconds meant the difference between bleeding out and survival under the bright Iraqi sun. I wonder what it was like to willingly walk into a fight, ready to surrender a limb. In many ways all of us had already placed that bet when we set foot in our Mideast warzones.

I've searched for images of soldiers sporting pre-positioned tourniquets. More often than not, I find images of tourniquets strapped or rubber-banded to body armor. In 2011, during an interview with

former Army surgeon Dr. Ron Glasser, *National Public Radio* reported “Marines, without anyone ordering them to do so, have begun heading out on foot patrols with the tourniquets already loosely strapped around their thighs, so they can be tightened quickly if a foot or a leg is blown off.” And, “Officers don’t like it.” According to Glasser [as quoted by *NPR*], “They view it as a kind of defeatism on the part of the troops.” He continued: “But the Marines don’t care. They basically say, ‘The hell with it. We’re going to wear it anyway. If our legs get blown off, at least we’ll survive.’” And, in ’09 the *Wall Street Journal* published a photo of Marines from Lima Company wearing tourniquets loosely on their ankles in Zad, Afghanistan. I know those tourniquets, I’ve seen their black straps sandwiched between ammunition and holsters or body armor and unit patches of skulls and Latin phrases.

As a fourth-grade Cub Scout, during a meeting at Kellogg Elementary School in Goleta, California, I watched the Cubmaster pull his red paisley handkerchief from a back pocket, wrap it around a skinny kid’s arm, tie a knot, stick his pen through, and twist. He said, “you’ll probably never have to use one of these, but I wanted to show you just in case.” That demonstration followed a lesson debunking legendary snakebite treatments, “Never, never, carve an ‘X’ where a snake bit someone, and never, never try to suck out the venom.”

A tool once considered the work of the devil, today’s tourniquets—black plastic and Velcroed fabric—are nothing more than reimagined ancient technology. *The American Journal of Surgery* reported that “A sixth century BC Hindu medical text described tourniquet use in snakebite care.” When “Alexander the Great invaded the Indus River valley,” the Hindu doctors “introduced tourniquets to the Greeks.” The Greek knowledge flowed to the Romans and both used bronze and leather straps to stem the blood flow. Throughout the 1500s surgeons in Prussia, Spain, North Africa, and Germany described using early tourniquets. And, “the first unambiguous claim of battlefield tourniquet use” came in 1674 when French army surgeon Etienne J. Morel “described a tourniquet used at the siege of Besançon.”

Most credit Jean Louis Petit, a French surgeon, with fashioning the first modern form of the device in 1718. Late in the 1700s many British sailors carried tourniquets, thanks to Sir William Blizard, but doctors remained divided on their effectiveness. Many felt the risks outweighed the benefits. British surgeon George H. B. Macleod debated their use in the Crimean War. During the American Civil War, Confederate surgeon J. Julian Chisholm “noted poor tourniquet results in a war surgery manual,” while Union surgeon Samuel D. Gross advocated that all soldiers should carry the tool. Dr. John F. Kragh wrote, “the most famous casualty in need of a tourniquet was a Confederate commander, Albert Sidney Johnston, who died of a gunshot wound while riding his horse, Fire-eater, at the battle of Shiloh in 1862. He had massive hemorrhage from a partial transection of the popliteal artery, yet an unused tourniquet was in his pocket.”

The debate continued throughout World War I, and some argued “It is no exaggeration to say that many limbs have been lost during indiscriminate use of them.” Following the Spanish Civil War, New Zealander Douglas W. Jolly echoed this sentiment: “More limbs and lives are lost at the front from the improper use of the tourniquet than are saved by its proper use.” During World War II, the “US Army strap and buckle tourniquet lost tension during application, and it was often ineffective on thighs.” The military used the same ineffective design through Korea and Vietnam with dubious results.

The military became interested in tourniquets after improvised versions saved lives in Mogadishu in '93. Special operations medical experts began investigating better tourniquet options, but the military did not have an improved device when Operation Enduring Freedom began in '01. An Army Ranger unit improvised tourniquets from hardware store ratchet and strap devices prior to their deployment to Afghanistan. Kragh wrote, “The first US casualty to die in the war from enemy fire was a Special Forces Soldier, SFC Nathan Chapman, who died during medical air-evacuation on 4 January 2002 from isolated limb exsanguination without tourniquet use.”

In a story that echoes the rise of Apple, former Special Forces medics, Ted Westmoreland and Mark Esposito, along with rigger Eli Gonzalez developed early prototypes of the Combat Application Tourniquet in a North Carolina garage. As demand grew, so too did the family business. Wives and mothers sewed Velcro and rods, folded instructions, and wrapped the devices in plastic. By 2005 every deploying service member received tourniquets and training.

Today's Combat Action Tourniquet or C-A-T looks like a fancy black Velcro belt with a black plastic pencil-shaped rod. One estimate says C-A-Ts have saved three thousand service members' lives since 2006. The first time I held one, I couldn't believe how light it was, how simple. At their core, tourniquets are just something to wrap around a limb with a lever for tension. In a pinch, a cloth and stick will work, but C-A-T's parts, born in the military industrial complex, sound like twenty-first century miracles: Self-adhering Band, Rod Locking Clip, Windlass Rod, Friction Buckle, Rod Securing Strap. They're available online for \$24.50 in military issue tactical black, EMS orange, or trainer blue.

Several years later, during Boy Scout summer camp at Rancho Alegre—across Highway 154 from Lake Cachuma, in the hills above Santa Barbara—the sixteen-year-old instructor and high school tennis champion said, "Tourniquets are the last option, but let's practice just in case." Under the Coast Live Oaks, half a dozen of us wrapped each other's arm or legs in red scout bandanas, found a stick or pencil, and twisted until our patient said "ouch." This demonstration followed a viewing of a mountain lion that had been hit and killed on the highway. The game warden loaded the body into his truck and hauled the big cat to camp so we could gaze at the yellowed teeth, granite fur, limp muscles, fogged eyes, dime-sized ticks, and hooked claws.

Common slang for tourniquet in the military: TQ.

On my first deployment, to Iraq, I unsheathed my tourniquets and placed them back in the first aid kit attached to my body armor, which rested on a roughshod wooden crucifix shaped stand in my office, along with my helmet and other gear. Rarely did we wear vests or helmets—even when cruising the non-US-controlled parts of the International Zone—which meant I rarely carried my tourniquets or first aid kit. And, even if I did, I would have had to wrestle them from the buckled pouch. One blazing June afternoon, in the aftermath of a rocket attack, I noticed

the Command Sergeant Major—the senior enlisted person on the base—strutting around with a tourniquet lashed to his holster, nestled against his M-9 Beretta. An ironic setup—pistol to kill, tourniquet to save—that suddenly seemed brilliant. The flat-topped sergeant major never smiled and spoke to officers only when they addressed him first. I imagined him kneeling to apply a tourniquet with one hand, and firing his pistol from his other in a scene echoing *Platoon*.

\ˈtūr-ni-kət: The word terrifies me. First referenced in the late 1600s, its French roots carry whispers of guillotines and mud. Three blunt syllables that say “save your life” or maybe “not today.” The soft entry “tour,” the root of *tourner*, means “turn” and brings me to *turn away, don’t look*. And also, turn the goddamn plastic windlass for your life, or your bro’s, or this stranger’s, or this child’s, or this son-of-a-bitch who tried to kill us. If you don’t turn this now, someone dies. Turn it as you’d a faucet overflowing a sink. Turn it fast, to a hard stop. Life is leaking away. The manual says three full turns should be enough.

The middle syllable, “ni,” recalls the sound “neh.” For me, this cousin of “no” is probably all I could manage in a situation requiring a tourniquet. “Neh,” a choice between life or limb.

Finally, the “quet” or kit sound, clipped and violent, reminds me to make sure my kit—slang for gear—is in order. And, “quet” rings too close to the word “quit” for me. A *quet* is also a “seabird of the genus *Cephus*, of northern seas, having a sharply pointed black bill, red legs, and white wing patches.” Black, red, and white—the colors of the Combat Application Tourniquet carried by all service members in our country’s warzones. Black Velcro, red flap or maybe blood, and a white tab to note the time when the tourniquet was applied.

Today in Afghanistan, all soldiers—even those confined to the relative security of NATO mega-bases—carry a tourniquet in their right shoulder pocket. The tourniquet’s blood red half-moon flap hangs under the subdued American flag and recalls a dog’s tongue. The thinking is that if a rocket or mortar swipes a limb, the fallen could tourniquet themselves. Or, a friend could help without using his own tourniquet.

The generals don't want people to die from lacking a tourniquet. And, the shoulder placement makes more sense than the Zad Marine's ankle placement since most IEDs take legs versus arms. A tourniquet has a higher chance of getting blown away on someone's leg. In 2011, a group of military physicians published a report titled "Tourniquets Exposed to the Afghanistan Combat Environment Have Decreased Efficacy and Increased Breakage Compared to Unexposed Tourniquets," and recommended that commanders order their troops to keep their tourniquets protected.

On my first trip to Afghanistan, I saw everyone with these dog tongues on their sleeves. I didn't know what they were, so I asked a colleague. He said, "Dude, those are tourniquets... where's yours?"

Every now and then there's a story where someone attributes their Boy Scout training to saving their lives. Recently, I saw this: "LAX shooting survivor says Boy Scout first-aid training saved his life," then "Brian Ludmer, a 29-year-old California teacher and former member of Lake Forest, Ill., Troop 48, used a makeshift tourniquet to stop the bleeding in his leg and keep himself alive." And sometimes Boy Scout training morphs with military training: on June 27, 2011, in Austin, Texas, a "Boy Scout leader (former Soldier) saves student with tourniquet at truck versus bicycle crash."

Increasingly, over the last few years, people have credited tourniquets for saving countless lives away from warzones. More and more, we're seeing stories of how combat medicine leaches into the mainstream. People successfully used tourniquets in the aftermath of shark attacks, tornadoes, car accidents, train wrecks, airplane crashes, and shootings including Fort Hood, Tucson, Oslo, and Aurora. People fashioned improvised tourniquets from surfboard leashes, bras, T-shirts, and belts. Following the Boston Marathon bombings, *USA Today* reported "The most severe injuries in the Boston bombing resemble those suffered by troops in Iraq and Afghanistan whose limbs were blown apart by improvised explosive devices, and the initial treatment was also identical: First responders, and in some instances, spectators—used tourniquets to cut off the blood flow..."

In another interview, Dr. Michael Gibson said, "It was a bit like a war scene, essentially. You know, watching TV, seeing the show *Inside Combat Rescue*, where you see a lot of implemented explosive devices and

loss of limb, it was eerily reminiscent of that. And people were missing lower extremities.”

Boy Scouts taught me to respect the tourniquet. The military taught me to cherish it.

In 2012, I was at Kandahar Airfield with an Air Force Rescue unit and a documentary crew for the filming of *Inside Combat Rescue*. Air Force HH-60G “Pave Hawk” helicopter crews and Pararescuemen were responsible for bringing the most seriously wounded to follow-on care, and I escorted National Geographic during their embed to tell the story. On our initial visit to the NATO Role 3 hospital, the commander, a US Navy Captain, told us that it was mandatory for everyone to carry tourniquets. He told us a story of a quadruple amputee, “He rolled into the hospital conscious and asking his caregivers how their day was.” He continued, “One way people deal with this kind of trauma is to not think of the patient as a person, but more people are coming in awake due to tourniquets and better battle field treatment, so it’s hard to not think of the patient as a person when they are talking with you.”

His story cut short when the pager hanging on his scrubs’ waist sounded. He gazed at the pager, stared at us, and said, “Two alphas coming in, one double amp and one single. Let’s go.” The hospital commander served as our guide during our immersion in trauma care. We walked from his office to the trauma bay. He brought us to a yellow line on the floor. “Turn away if you have to,” he said.

Medics wheeled the soldier who’d lost both his legs first. Propped on his elbow, he stared at me as he rolled by. His face carried no expression outside of his wide, unblinking eyes. His mouth hung slightly open.

“In a bad accident in the US, you may need two to four units of blood. Here, one guy may get forty or fifty units.”

His dark hair, blown back from the blast or helicopter ride, looked as if he’d been riding a motorcycle with no helmet.

“Belmont machine gives a big amount of blood quickly.”

His color struck me as wrong, a light gray that reminded me of smoke.

“Time is important. Blood saves lives.”

I'd expected noise—screams or moans—but, the soldier remained silent. The only noise came from the trauma team... a steady stream of orders, commands, responses, and status updates.

"Ninety-nine percent survival rate, but I don't want to jinx it."

I saw the wedding ring on his left hand clutching the side of the stretcher. Dust coated his shredded Multicam uniform. I noticed small clods of dirt riding on the stretcher. I delayed looking at his wounds as long as I could.

"It blows me away how white the bones are," said one of the cameramen.

Blood dropped from the stretcher; I followed the quarter-sized drops back to the door.

"It's really devastating when they've lost four or five limbs."

The Army Dustoff flight medic baseball tossed his blood covered Nomex flight gloves into a trash can. A nurse slung the patient's bloody and torn uniforms into a red biohazard bag. Canadian, US, and Australian flags and part of a helicopter door decorated the walls. Doctors and nurses shuffled quickly in Crocs, green scrubs, yellow smocks, and blue gloves.

"They're checking for a tension pneumothorax."

Outside, I saw a turbaned detainee on a bench. He wore tan pants and shirt, slip-on shoes, and a salt-and-pepper beard. A hand-painted sign read, "Kandahar Institute of Surgical Science."

The tour continued. We passed the intensive care unit, and I noticed one soldier on a ventilator with only one leg, a broken arm, and a swollen face. We passed the operating rooms. Clusters of surgeons under the bright white lights stood working on patients with their heads bowed.

We eased into the Afghan side of the hospital. A translator tried to teach a local villager to use a door lock. A man in a black turban prayed on a child's comforter with Scooby Doo characters.

We reached the Captain's office. A framed photo of his family sat next to two large computer screens. His blond wife and two college-aged daughters smile in front of what looked like a Hawaiian beach. The doctor's loved ones seemed to stare at the monitors. And the slideshow began. First, a series of faces peppered by shrapnel and rocks. "Eye pro saves eyes," he said. "Imagine catching an explosion mid-stride straight into your groin, chest, and face." Then open skulls, torn chest cavities, ripped bellies, and shredded limbs.

At an airbase in Manas, Kyrgyzstan, I bumped into two helicopter pilots from the Kandahar rescue squadron. I joined their conversation at the base bar. As we swilled our allotment of big-bottled Kyrgyz beer, I asked if they could see much of what went on in the back of their helicopter during casualty evacuation missions. One said, “Not much man, not much. I just know it looks like spaghetti.”

At the time, our oldest son was training to be an Army combat medic at Fort Sam Houston, Texas. When I got back from Afghanistan, I talked with him about the realities of his business. He told me about some of the videos and images he’d seen, and how he had assisted during live tissue training at Camp Bullis. In this controversial training, live pigs or goats are wounded and medical teams work to keep them alive. Medics likely apply TQs to their four-legged patients. The medical community says this training saves innumerable lives. Animal rights activists say the training is cruel and inhumane.

When our son didn’t pass the national Emergency Medical Technician test, a mandatory part of Army Combat Medic training, I was relieved. Of course I felt bad that he didn’t achieve this goal and that he faced a bit of career turmoil, but I realized the transition could save him from becoming a trauma junkie in Afghanistan. He cross-trained to be a combat engineer and now roofs and frames buildings. He just returned from a deployment to Mihail Kogalniceanu, or MK, Air Base, Romania, a Cold War landmark where he helped build a customs building that most US troops coming from or going to Afghanistan will pass through. MK replaces the base in Kyrgyzstan as a transit hub. If I ever pass through this base on my way to or from Afghanistan, I’ll look for my son’s handiwork.

Our youngest kids, nine-year-old twin boys, belong to a Cub Scout pack, which meets on the base where I’m currently stationed. Their den leader, a doctor, recently taught the kids about first aid. We met at the hospital and volunteer Airmen taught the kids about CPR, wound care, splints, and shock. The kids practiced chest compressions on dummies, splinted mannequin’s legs, loaded each other onto stretchers, and bandaged one another’s arms. During the session, I wondered if the doctor would introduce the kids to tourniquets. I figured it would

come shortly after the discussion of direct pressure and the importance of bleeding control, but it didn't. The den leader had just returned from a year-long Afghanistan deployment where he worked at a Role 3 hospital. Just when I thought I'd escaped a tourniquet lesson for nine-year-olds, the den leader said, "I have one more thing to show you."

He pulled out a C-A-T and explained how to use the device. The dozen third graders stared at the black Velcro, and when the doctor asked for a volunteer, a dozen hands flew up. The doctor placed the C-A-T on his son's arm, strapped it down, twisted the windlass until his son winced. He secured the rod with the securing strap and said, "Look at his hand turning purple." The little boys formed a semi-circle around their friend, asked him what he felt, and stared at his arm. The boy said, "It's tingling." The doctor said, "Okay, gotta get it off, who's next?"

My boys raised their hands. I said, "Sorry boys, we have to go." "Come on Dad, please? It'll only take a minute," one said. I didn't answer and walked toward the door. They followed me from the classroom with their heads hung low.