

BATTLEFIELD ANGELS



*Saving Lives Under Enemy Fire
from Valley Forge to Afghanistan*

SCOTT McGAUGH

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

Chapter 4

Fighting Infection

• • • • •

World War II: The Pacific

The wail of the air raid siren froze the work detail on the deck of the submarine. Exposed topside on the USS *Sealion*, the knot of sweat-soaked men in blue dungarees squinted into the noonday sun. They swept the blue sky for specks that might grow into Japanese bombers, even though for two days they had jumped at sirens that had yielded nothing. Pulses quickened when the drone of enemy aircraft washed over them. Several sailors glanced over at another sub, the USS *Seadragon*, and a minesweeper, the USS *Bittern*, alongside to see if their crews also had been caught in the open. All three ships were lashed together at the Machina Wharf at Cavite Navy Yard in the Philippines on December 10, 1941.

Two groups of twenty-seven enemy bombers converged on the largely undefended Navy base and leisurely formed up for bombing runs

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

at defenseless ships and buildings. The first stick of enemy bombs missed the two submarines by one hundred fifty yards. The enemy bombers circled, seemed to pause, and then made another run. The *Sealion* shuddered when the bombs hit. One destroyed a machine gun mount that had been vacated only seconds earlier, exploding just outside the sub's control room where most of the crew had gathered. Another bomb hit at almost the same instant, exploding deep inside the sub, killing four men. Shrapnel skittered through the *Sealion*, slicing skin and scalp.

Within seconds, the *Sealion* listed hard to starboard as seawater filled the ruptured aft engine compartment. As the sub settled into the mud, a short, skinny corpsman from New Castle, Virginia, escaped through the forward torpedo hatch into the bay as explosions rocked the burning Navy yard. Wheeler Lipes treaded water in a circle, shocked at the near-total destruction of the Navy base. When a rescue party finally pulled him out of the water and took him to one of the few remaining piers, Lipes treated soaked, bleeding, and burned men.

That night, after a hot dog and sauerkraut dinner, Lipes collapsed on a cot aboard a tender that had survived the attack, oblivious to the smell of burning rubber and rubbish that wafted through the ship. As he closed his eyes, "Wheeler Lipes, report to sick bay" blared from the ship's loudspeakers. The sound of men arguing pierced Lipes's exhaustion as he approached the compartment. The USS *Seadragon*'s corpsman had been wounded during the attack, and the Navy needed a replacement before the submarine put to sea. Several men shouted over each other, trying to convince a confused officer that they deserved the transfer.

"Look, I've been here longer than you! An' you know I got more medical training than you," said one.

"Yea, and how many times you been late from liberty? Just last Saturday the MPs had to drag your sorry ass aboard," said another.

"Enough!"

FIGHTING INFECTION

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

The senior medical officer looked Lipes up and down as he entered. “How would you feel about another submarine?” he asked Lipes, whose scalp laceration still ached.

“I’m ready now, sir,” said Lipes.⁸

Over howls of protest from men senior to Lipes, the matter was settled. Wheeler Lipes, a young man who always had his nose to the grindstone, was the only candidate present who had completed all the qualifications for transfer to submarine duty as a corpsman. Soon he would head out to sea.

America’s military medical corps was poorly prepared and undermanned when the Japanese attacked Pearl Harbor and the Philippines in 1941, even though President Franklin D. Roosevelt had begun mobilizing for war two years earlier. The Army’s medical department totaled 11,000 doctors, 7,000 nurses, and 107,000 enlisted personnel. The entire U.S. Navy medical department numbered only 13,500. Rapid medical corps expansion became paramount as America sent 16 million men and women to war over four years. That required the military medical corps to more than quintuple in size, ultimately numbering more than 800,000 by 1945. That expansion created a variety of options for bright and ambitious young men.

Wheeler Bryson John Charles Lipes had always been a serious young man. Standing five feet, six inches tall and weighing about one hundred twenty pounds, Lipes had small feet and small hands. He had wanted to be a doctor for as long as he could remember, especially after working in a Norfolk, Virginia, naval air station dispensary, where he served patients their evening meals, punched capsules in the pharmacy, and typed patient records.

The family bragged that his aunt had been Virginia’s first woman pharmacist, but it was his mother, Ida Mae, who set the example he would follow. As a child, Lipes had watched excitedly as some taffy syrup

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

boiled on the stove. When he accidentally stuck his hand in the syrup, he suffered horrific burns. Ida Mae refused to let doctors amputate the badly burned hand, and she slowly restored it to health and dexterity. Another time, while sitting on his mother's lap, Lipes unexpectedly flinched, startling her. She was holding a toothpick and accidentally poked him in the eye. Weeks of daily care slowly but fully rehabilitated his eye. Wheeler Lipes might have grown up with one eye and one hand. Instead, his family's patient ministering instilled a deep sense of responsibility, self-reliance, and ingenuity that would define his life.

Lipes dropped out of high school and enlisted in the Navy in 1936. Within weeks, the former Eagle Scout found himself on the USS *Nitro*, bound for hospital corps school in San Diego. Corpsman training came easily to Lipes. Anatomy classes that confounded others were a snap. The body was a road map and all a man had to do was study it, he often said.

Several months later, Lipes headed for corpsman duty at a Navy hospital in Philadelphia. Over the next three years, he constantly sought physicians who didn't mind teaching young corpsmen. "I want to learn everything I can,"⁹ the single-minded young man told them. Lessons often extended well beyond the boundaries of corpsman duty.

Rain pounded the *Seadragon's* periscope, blurring Captain William Ferrall's view of the South China Sea whitecaps. The sub had departed Fremantle, Australia, sixteen days earlier on August 26, 1942, on its fourth patrol of the war. The next day it reached its assigned station. Secret Operation Order 49-42 directed the *Seadragon* to pursue and destroy enemy shipping.

The *Seadragon* had spotted an enemy sub and a destroyer, evading both as it headed for a shipping lane often filled with Japanese troop transports and supply ships. After completing a watch assignment, Lipes headed for the crew compartment in the battery section of the sub.

FIGHTING INFECTION

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

“Hey, Doc, I don’t feel very good,” Seaman first class Darrell Dean Rector said to Lipes. On the youngster’s nineteenth birthday, a dull ache in his belly made it impossible to stand up straight. For three days the stomach pain had persisted, and now his temperature was 102.4 degrees. “I think I need a laxative.”

Lipes wasn’t so sure. “You lie down, and I’ll go stand your watch for you.” Two hours later Lipes returned.

“Jeez, Doc, my belly’s really hurting. Bad. Gimme me a coupla pills or some mineral oil or somethin’. Maybe I just need to take a dump.”¹⁰

Lipes paused as a frown creased his face. “Why don’t you just get in this bunk and we’ll see how you do.” The corpsman was thinking several moves ahead:

“There isn’t a qualified physician for more than a thousand miles. We’re in the middle of the South China Sea in Jap waters and I’ve got a sailor beginning to act like he has appendicitis. He’s pulling his right leg up toward his chest, trying to ease the pain that looks like it’s localized on his right side.”

When Lipes touched Rector’s abdomen, the crewman nearly jumped out of his bunk. Sailors heard his scream several compartments away.

Lipes left to see the captain. “What do you think is wrong with him?” Ferrall asked.

The corpsman had assisted with appendectomies before transferring to the submarine service. “I think he has appendicitis. He needs an appendectomy.”

Ferrall and Executive Officer Norvell Ward blanched. They were weeks away from a friendly port, and appendectomies even in hospitals were far from routine. Deadly infections were common in the prepenicillin era of 1942. Ferrall, Ward, and Lipes headed for the bunk where the sailor squirmed in pain. No position brought relief as Rector

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

looked up at concerned faces. Ferrall turned to Lipes. “What are you going to do?”

“Sir, I can’t do anything,” Lipes replied.

“Son, we’re out here in enemy waters. We do the best we can every day. When I fire torpedoes, I know sometimes they’ll miss. But we all have a job to do. You tell me this sailor’s got appendicitis. Now, can you do an appendectomy or not?”

Only the engines’ rumble through the metal deck and a distant clang broke the lengthening silence.

“Yes, sir, I can do it, but everything is against us. Our chances are slim. But if that’s what I’m ordered to do, that’s what I’ll do,” said Lipes as he, Ferrall, and Ward looked down at Rector, his face red with fever.

“Son, what do you think?” Ferrall asked Rector.

“Whatever the doc feels has to be done, it’s okay with me,” said the sweating Kansas native.

Only twenty-three years old, Lipes’s heart pounded as he considered his orders. No one had performed an appendectomy on a submarine before, largely because no surgeons served on them. A corpsman with modest basic training stood between Rector and a ruptured appendix that would kill him. Worse, Lipes realized he lacked the tools he had seen surgeons use when he had assisted in the Philadelphia Naval hospital.

Color drained from his face as he looked around the *Seadragon’s* cramped officers’ wardroom. It was so small, even the diminutive Lipes could not stand up straight. Lipes lacked the necessary equipment to take Rector’s blood pressure. There was no way to do a blood count to assess the patient’s condition. No intravenous fluid. No equipment to administer anesthesia. Wheeler Lipes’s patient faced death unless he operated, yet the corpsman lacked the most basic equipment found in many physicians’ offices.

Lipes, though, possessed an intuitive gift, intelligence, and a passion for learning. Years earlier, he had bought *The Merck Manual*, a massive

FIGHTING INFECTION

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

technical guide to the human body. He considered it one of the greatest books ever published, second only to the Bible.

Captain Ferrall ordered the *Seadragon* down to one hundred twenty feet, to get below the stormy South China Sea swells. The *Seadragon's* helmsmen would have to keep the submarine perfectly level for as long as the surgery required. Lipes began to improvise. A desk drawer pulled out extended the wardroom table to accommodate the six-foot-tall Rector. Sailors rigged floodlights, normally used for night loading, for added illumination in the dim wardroom. Others piled battle lanterns and flashlights on a nearby bench. Lipes pricked Rector's ear and used a torpedo stopwatch to time how long it took the blood to clot to make sure Rector wasn't a hemophiliac.

Pajamas sterilized in torpedo alcohol served as surgical gowns. Five tablespoons with handles bent backward became retractors. Lipes would have to monitor Rector's pulse rate by watching blood vessels pulsing in his opened belly. Sailors ground sulfa tablets into powder for sprinkling into the patient's stomach to fight infection.

Infection had always been a major killer in war. During World War I, 1.8 million Allied soldiers died from battlefield wounds—after reaching a military hospital.¹⁷ Infection accounted for an estimated 10 percent of all German deaths in World War I. Military doctors understood the necessity of cleaning wounds and used a weak bleach solution to sterilize them, but they had no broad-spectrum, systemic antibacterial drugs to fight infection from within the body. As a result, wound infection was so common it often was called a “military disease” and barely rated a mention in leading surgery books written between the Civil War and World War I.

For many soldiers who survived the battlefield, hospital gangrene led to a gruesome death. A fever developed a few days after being wounded. Vomiting and diarrhea followed. After the wound became

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

swollen, it typically turned black and fetid. Then tissue began to fall off, exposing muscles. As gangrene progressed, the muscles separated while vomiting and diarrhea increased. If that didn't kill the wounded man, eventually veins and arteries disintegrated until he bled to death and his pitiful screams ceased. Hospital gangrene was a weeklong hell.

Gerhard Domagk, a German researcher, saw the horrors of wound infection as a medical assistant in the Ukraine during World War I. Under brutal operating conditions, he watched surgeons insert dirty magnets into entry wounds in search of shrapnel. He was powerless as half the men in his postop ward died of gangrene. Domagk survived the war, intent on making medicine his career.

At Bayer, a German pharmaceutical company, Domagk began testing chemical dyes used to stain invisible bacteria so doctors could monitor infections. If a poison could be attached to the dye, perhaps it could become lethal to the many bacteria species that caused a wide range of infections and diseases. Both had killed more soldiers in war than the enemy.

Wheeler Lipes was twelve years old on Christmas Eve, 1932, when Domagk made a startling discovery. Four days earlier, Domagk had given a red dye called Prontosil to a group of mice infected with streptococcal bacteria. By Christmas Eve, every mouse treated with Prontosil was free of infection. All the mice in the untreated control group had died. Domagk was stunned. He replicated the test time and again, with similar results.

At one point he gave Prontosil to his daughter who was very ill. She recovered completely. Domagk had discovered sulfonamide, the world's first antibacterial drug. His discovery sparked worldwide research into different types of sulfonamide, which proved to be effective against pneumonia, streptococcal infections, common types of meningitis, and other diseases. On the eve of World War II, newly developed mass production capability made sulfa drugs a potent new

FIGHTING INFECTION

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

weapon against wound infection in the hands of surgeons, corpsmen, and medics.

In 1939, Domagk received the Nobel Prize in physiology, but it was awarded in absentia. The Gestapo had arrested the researcher to prevent him from accepting it in person because Domagk had refused to support the Nazis.

By 1941, every corpsman and medic carried a supply of sulfa. Soldiers' first aid pouches included sulfa powder and tablets. Five grams of crystalline sulfanilamide powder were to be sprinkled over open wounds. Sulfadiazine tablets were taken orally, except in cases of stomach or throat wounds. Sulfa was known to cause nausea and abdominal cramps, but its advantages more than outweighed these nuisances. For the first time, corpsmen and medics had a battlefield weapon against infection.

If Rector survived Lipes's crude surgery, the ground sulfa tablets might give Rector a fighting chance at staving off infection, even considering the primitive surgical tools that would be used in largely unsanitary conditions. Lipes didn't know how long it would be before Rector reached a proper Navy hospital.

Lipes's surgical team included communications officer Franz Hoskins, who would act as an untrained anesthesiologist; yeoman H. E. Wieg, who would hand the bent spoons to Lipes; Ward, who would assist Lipes by positioning the retractors inside Rector to separate tissue and muscle; Ferrall, who would keep track of the sponges and spoons inserted in Rector's abdomen; and the engineering officer, Lieutenant Charles Manning, who would monitor the patient's circulation. The surgical team gathered around Rector in the *Seadragon's* sweltering heat and incessant, vibrating hum.

Lipes pulled on alcohol-drenched gloves whose fingers were too long. He looked like Mickey Mouse in his oversized gloves, a blue blouse taped tightly around his neck, and white duck cap. He inverted a tea

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

strainer and covered it with gauze. It became the patient's mask, through which Hoskins administered ether. A sailor notched the stopper in the ether bottle so Hoskins could dribble the liquid onto the tea strainer. The ether was so caustic that another sailor smeared petroleum grease on the patient's face to keep it from burning.

At 1046 on September 11, 1942, corpsman Wheeler Lipes began operating. The first incision barely creased the skin. Lipes cut deeper, to the fascia, then through the fascia to separate Rector's stomach muscles, and another incision through the peritoneum. Lipes kept peeling away Rector's abdomen until his patient's organs appeared.

The air in the crowded wardroom grew stale. Then Lipes noticed an odd smell enveloping the surgical team. He looked at Rector's face and immediately saw that the notch in the ether bottle's stopper was too large. The ether overdose threatened to anesthetize the surgical team where they stood, while the patient received inconsistent doses. As ether fumes wafted through the compartment, Lipes felt Rector's stomach muscles tighten, then go limp as Hoskins struggled to drip more ether into the tea strainer. "Give him more!" Lipes ordered as Rector grimaced.

Once Hoskins had the ether administration under control, Lipes made the last incision. He expected the appendix to pop up, probably blackened with inflammation, but nothing happened. It wasn't there. *Oh, God, thought Lipes, does this guy have situs inversus? Is his appendix on the opposite side of where it's supposed to be? Just my luck,* as he frantically searched for Rector's gangrenous appendix. Finally, there it was, coiled, engorged, black, and attached in three places to the caecum, a pouch that forms the first part of the large intestine. Rector's appendix had adhered to the inside of his abdomen.

Okay, take it one small cut at a time ... don't rush it ... look it over, look again, then make the cut. Slow and careful ... don't hurry it ... just like they did it in Philadelphia. ... Lipes knew that if he punctured the appendix, Rector would die. If Rector died on the *Seadragon*, it would be from an

FIGHTING INFECTION

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

appendectomy performed in slow motion, not at the hands of an untrained corpsman frantic to close Rector as quickly as possible.

One step at a time, take double notes to be sure nothing is left behind. Make sure the seventy sponges we've used are accounted for. Make sure the sulfa is ground finely enough that it can be sprinkled inside Rector as we close. Two hours and fifteen minutes after the first incision, Lipes completed the operation. It had taken nearly three times as long as it would have for a practiced surgeon.

Lipes and the others peeled off their sweat-soaked surgical gowns and sat down with mugs of coffee. Word raced through the crew. It was over. Rector had survived, but now Lipes and the rest of the crew had to wait to see if he would recover.

"I'm still in there pitching," Darrell Rector said forty-five minutes later when he regained consciousness. In the following hours, Lipes regularly checked on Rector. An initial fever spiked and then ebbed as the *Seadragon* resumed its patrol and the surgical team disbanded. Two days later, a pair of sailors helped Rector to his feet. He took his first few tentative steps as the *Seadragon* assumed its assigned position in the South China Sea. Five days after, the sub's cook complained to Lipes that Rector "was eating like a horse." A week later the *Seadragon* engaged a Japanese heavy cruiser and two destroyers and survived a depth charge attack.

"One Merchant Ship. One Oil Tanker. One Successful Appendectomy," read the cryptic report from the *Seadragon's* skipper. To *Chicago Daily News* reporter George Weller, it smelled like a story. The journalist had escaped after being held by the Gestapo for two months in Greece in 1940, and now was assigned to cover the war in the Pacific. Weller was based in Australia, where he had taken refuge after the Japanese had chased him out of Singapore and Java.

Weller paced the dock as the *Seadragon* pulled into Fremantle on October 20, 1942. He had asked Admiral Charles Lockwood for

BATTLEFIELD ANGELS

Battlefield Angels (excerpt)
by Scott McGaugh
(c) 2011

permission to interview Lipes and his surgical team, eager to decipher the sanitized, curt summary of the *Seadragon*'s fifty-nine days at sea.

"I'm sorry, sir. I thought the captain wanted to see me," stammered Lipes to the stranger in the wardroom after the *Seadragon* had tied up.

"Are you Lipes?" Admiral Lockwood inquired.

"Yes, sir."

"Well, you fellows had an exciting time," the admiral said as he wrapped an arm around the corpsman's shoulder.¹² They talked for five minutes, Lipes adding details to the skipper's report. When he finished, Admiral Lockwood asked George Weller to come in. Weller looked Lipes up and down as the two sat in the same wardroom that had been an operating room weeks before. As Lipes recounted his experience, Weller furiously took notes, flagging some he would check when he later met with nearly fifteen crewmen who played various roles in the Rector operation. Weller knew when to give an interview subject plenty of rein and let him run with his story.

*"Somewhere in Australia—'They are giving him ether now,' was what they said back in the aft torpedo rooms. 'He's gone under, and they're ready to cut him open,' the crew whispered, sitting on their pipe bunks cramped between torpedoes. One man went forward and put his arm quietly around the shoulder of another man who was handling the bow diving planes. 'Keep her steady, Jake,' he said. 'They've just made the first cut. They're feeling around for it now.' 'It' was a little group of anxious-faced men with their arms thrust into reversed white pajama coats. Gauze bandages hid all their expressions except the intensity in their eyes. It was an acute appendix inside Dean Rector of Chautauqua, Kansas. The stabbing pains had become unbearable the day before, which was Rector's first birthday at sea. He was nineteen years old."*¹³

End of excerpt.