

Eat to Kill

The West Point Mess Hall

FIFTEEN TIMES A WEEK, West Point cadets assemble in formation outside their barracks. The 4,500 future leaders of the United States Army stand before a statue of George Washington, the man who won their nation's first war. Then, still in formation, the cadets file into the five-story Gothic hall behind the statue. Inside, lunch is served.

I had come to the military academy to dine with them in Washington Mess Hall.

West Point transforms America's high school football champions and valedictorians into optimized killing machines, the army's superlative soldiers, but to all appearances, they come here to turn into the most robust scholar-athlete undergrads in a nation where a quarter of their peers are too fat to enlist (Christeson et al. 2010). In four years, they graduate as officers, eventually becoming colonels and generals and four-star generals. Their conversion starts with waffles, eggs, and salmon.

Across the ranks of the Army, Navy, Air Force, Coast Guard, and Marine Corps, a food-service apparatus serves 1.4 million military mouths hot chow three times a day. The intake accounts for less than one-half of one percent of the food our nation consumes, but military appetites and diets warrant a disproportionate amount of attention because the food that the soldiers eat gives them the energy to win America's wars.

My quest to taste military food began at West Point for a straightforward reason. At the site where America's teenagers became America's top soldiers, I expected to find meals that induced this metamorphosis, banquets borne of immense research into the nutrition that makes a man or a woman a great warrior. After the academy, my journey took me to interviews with current and former fighters, conversations with a retired colonel who helped launch rations in their current form, and finally to the complex in Massachusetts where scientists develop, test, and taste future military food, the United States Army Soldier Systems Center. Along

the way, I even tried to cook a ration at home, as though from my civilian kitchen—where I write about food and cooking for a crowd of young professionals who think of their daily bread in terms of trends, TV shows, and dinner parties—I could gauge the feeling of eating dinner from a plastic package in enemy terrain.

I shaped my journey based on a belief that there was an intricate science behind military meals, and that evidence of technology and experimentation would be on display at the Soldier Systems Center and on West Point's long wooden tables where the plebes—first years—uphold the tradition of serving the upperclassmen. In the kitchen, a dining services contractor cooks these meals, which are supposed to pass muster not only with cadets' taste buds but also with a Pentagon initiative called Peak Soldier Performance. The program is evidence that the physical optimization of each soldier is a high-level initiative.

It's just not clear in what form.

Since early last decade, rumors have swirled that scientists working for DARPA (the Defense Advanced Research Projects Agency), the Department of Defense's futuristic and mysterious research arm, have invested in knowledge to eliminate food from the diets of some soldiers, conveying nutrition in high-tech forms, such as pills or injections. Wartime logistics would be spared a challenge were there no need to feed all those military mouths, and commanders would have more control over their troops' iron intake than a parent begging his kid to eat spinach. In 2002, the agency's director started uttering a new slogan, "Be all you can be and more," an anthem to human enhancement.

Meanwhile, popular science publications were exchanging conjectures about the latest in military human technology. Writers at *Wired*, *Discover*, and the Center for American Progress's *Science Progress* reported on implanted diet-tracking devices, innovative nutrient cocktails, and body temperature-lowering mechanisms, but they were all pieces from an unclear whole. DARPA is a secretive organization, and the writers could only guess how fully it was trying to

shape the docile bodies of our soldiers by means of their dinner—or lack thereof. According to Michael Burman-Fink at *Science Progress*, the group was accelerating research for an indefinite period, developing nutrient-tracking computer systems and sensors the agency hoped would turn troops into terrorist-destroying, centrally commanded super-soldiers. The gadgets would regulate their sleep habits, manage their fatigue, monitor their appetites, and eliminate their pain (Burman-Fink 2011).

With the conflicts in Iraq and Afghanistan raging on, however, the Pentagon seemed to remember, as Burman-Fink put it, that “war is random, and a super-soldier is just as dead as anyone else if his Humvee rolls over an IED” (ibid.). After that, DARPA and the DOD dialed back schemes to engineer the perfect soldier. At least, the agencies recast their human enhancement goal as the individual improvement of each soldier strictly within the bounds of his or her humanity. That meant prioritizing ordinary comestibles like caffeinated sausage with a three-year shelf life rather than pursuing foodless nutrition, a strategy shift that captures the essence of Peak Soldier Performance. Still, the change allowed for high-tech investigations to continue, as in the project seeking to force cell mitochondria into eating body fat, the metabolic output of which could fuel a body for a week, no rations necessary.

Because of the immense logistical and monetary burdens of feeding armies, futuristic food product development appears to be a sound military investment. Intensely nutritious foodstuffs, transported in the most efficient ways, would benefit both the top brass and the soldiers in the field. But futuristic food products do not stay in the field. The military’s high-tech food creations eventually wind up on supermarket shelves: A sugar shell first coated M&M’s to prevent chocolate from melting in the pockets of World War II soldiers. Frenchman Nicholas Appert invented canning at Napoleon’s request for fresh-tasting rations (Nowak 2010). And heat retorting, a process invented in the 1980s, has allowed the tuna in tuna cans to migrate to lightweight plastic pouches (ibid., 161).

But first the M&M’s, the canned tuna, and the modified molecules enter ration packs, field kitchens, garrison refectories—and West Point’s Washington Mess Hall, whose gigantic gray stone gullet I was still studying, from across the field. I yearned for the hall to swallow me whole. I longed to be Jonah in the body of the whale, to join the eggs and meat and vegetables on the plates, trays, and tables in the guts of the cafeteria, in a position to gauge if military food provided the satisfaction to these future soldiers that I got from my meals. I leaned toward the statue of Washington, as though a wave from the calm Hudson might launch me through the arched

windows, each a parted mouth. But at that moment, I heard a tour guide warn that military police prowled the property for civilians missing in action from their groups. “They arrest stragglers,” she said.

The pristine campus shared food with some hungry visitors, fans who came to grill hot dogs before Army football games and parents who brunched at MacArthur’s Restaurant at the on-site Thayer Hotel. Buses of Chinese tourists and grim grandchildren of alumni ended up at the McDonald’s on Highland Falls’ Main Street after they toured the campus’s landmarks.

But not me. I dared not pry open the jaws of Washington Mess Hall, thanks to warnings from the chief of West Point’s media relations, who did not want any part of my story. “They’re eating the same thing that kids eat at other schools—like pizza,” she told me. West Pointian cuisine had no affiliation with military food.

Pizza. I scoffed. There was something the media chief did not want me to see on the plebes’s trays. Pizza sprinkled with cannibalistic mitochondria, calories not just to get a cadet through classes, homework, extracurriculars, and workouts, but also to grant him superhuman powers. This is the US Army, after all. From across the field, the doors of Washington Mess Hall appeared to purse their lips tighter, the stone looking ever more solid even as the food inside took on, for me, an ephemeral cast, becoming as far-fetched a bunch of meals as I could imagine, like chicken stew set out at a make-shift mess in a remote military outpost thousands of miles from any McDonald’s, from West Point, or from my kitchen table.

Thwarted, I turned my back on the dining hall and made my way along Thayer Road toward West Point’s exit. I kept the Hudson to my left, to maintain my bearings. The road forked, and I cut a path inland, toward the football stadium, past the remnants of yesterday’s tailgate: a crushed Coors Light, an empty bag of Ruffles. Two deer scampered down a slope. Five turkeys—fresh food, to someone hungry enough to kill—roused themselves from the porch of one of the faculty houses and squawked at the grass. I climbed up some steps behind the stadium. The river was gone from view. I was lost.

I wandered up a hill and down a hill, past the Center for Enhanced Performance, which, for a moment, I mistook as a sign of proximity to the center of the military food complex, to Peak Soldier Performance, to DARPA initiatives that turned men into supermen by means of breakfast. A car from Dong Fong glided past, transporting takeout orders of chicken and broccoli in brown sauce to cadets who had missed lunch. Campus was quiet. The secret military kitchen was far from here. There was nothing at West Point for me to eat.

But Will They Eat It?

In 1983, Colonel David Schnakenberg, PhD, was sitting in the back of a meeting on military nutrition.¹ In front of him sat rows of two- and three-star generals. General Maxwell R. Thurman, a four-star general and the vice chief of staff of the Army, was leading a forum about the next big thing in feeding, a new individual ration called the Meal, Ready to Eat (MRE). The meeting's agenda: to determine if the ration was ready for battle.

In a time of Cold War skirmishes in Asia and South America, the sophisticated new ration would reduce the number of Americans in support positions abroad, replacing them with more fighters without depleting the Department of Defense budget. With individually packaged meals instead of group dining, 5,000 light infantrymen were going to take the place of 5,000 army cooks.

To the soldiers that day, Gen. Thurman revealed a plan to do away with the old field kitchens and, as Col. Schnakenberg told me, with the whole practice of serving food in trays.

The MRE program would eliminate the field kitchen's inefficiencies—the time it takes a cook to start a fire, the energy of washing dishes, the wasted manpower of assigning a trained warrior to rehydrate pasta with meat sauce. The individual rations would also give commanders more precise authority over their troops' diets. Civilian scientists had already sampled the meals during a decade's worth of lab research. But in 1983, the MREs had not yet fueled a single warrior in battle. High hopes for the ration's success rested on two facts: the MREs weighed less and contained more variety and nutritional benefit than World War I's Trench Rations (bread and sardines), World War II's K-rations (canned meat, chocolate bars, chewing gum) and C-rations (meat, bread, coffee), and Vietnam's Long Range Patrol (freeze-dried chicken stew and escalloped potatoes) (Department of Defense Combat Feeding Directorate 2012: 7).

When the vice chief of staff asked the room if there were any remaining concerns, Col. Schnakenberg—then a lieutenant colonel—stood up. He was tall, with round rimless glasses that stressed his academic persona over his military role.

"This hasn't been adequately tested with soldiers in the field," he said, "to see if it will meet their nutritional needs for extended periods of time."

The MRE ration functions as a single meal, each containing snacks, entrees, sides, spreads, drink mixes, vitamins, minerals, and other supplements, the whole of which seemed like plenty of food for one warrior.

Yet Gen. Thurman stared at the lieutenant colonel and took his warning seriously.

After the meeting, Col. Schnakenberg got reassigned. He had been working at the Pentagon, organizing field studies to document the minutiae of soldiers' dietary intakes, spending deployments on American aircraft carriers in the Mediterranean and writing down every morsel the seamen ingested. Now he was transferred to the US Army Research Institute of Environmental Medicine at Natick, Massachusetts, to lead the Nutrition Task Force. His assignment was to plan the inaugural MRE field test, in a location of his choosing.

At the Pohakuloa Training Area near Mauna Kea, Hawaii, Col. Schnakenberg and his team handed out little cards to a company of artillery soldiers assigned to eat nothing but MREs for six weeks. Col. Schnakenberg then collated his data and took his findings to the chief of staff of the army for a briefing. "There were some problems with the food items that were not being consumed," he said. At Pohakuloa, his numbers revealed, the soldiers had lost weight on the MREs, despite the meals' caloric adequacy.

In spite of the optimistic lab research and the civilian taste tests, the colonel had discovered that food provision does not always equal food consumption. The Department of Defense could present 3,900 calories of breakfast, lunch, and dinner, and a corporal-in-training could down 3,000 calories. Or he could swallow 1,400 calories, starvation rations even for a civilian. Or he could eat nothing at all. Hungry soldiers suffer from depression. They lose concentration. They react slowly. On the current MRE entrée pouch, a flow chart uses little triangles to explain to combatants that food bestows energy, which unleashes "top performance." Without food, performance wavers.

The 1983 decision to promote the individual ration divined the texture of warfare three decades later. During the Civil War, World War I, and World War II, troops had held positions in known, accessible locations. The misery of World War I's trenches had an upside, a fixed address to which the Americans could deliver Trench Rations, boxes containing fifty half-pound cans of hard bread, ten one-pound cans of corned beef, five one-pound cans of roast beef, four one-pound cans of salmon, four quarter-pound cans of sardines, plus coffee, salt, and sugar—food for twenty-five men for a day (Department of Defense Combat Feeding Directorate 2012: 7). The next day, the troops could expect more provisions.

In Iraq and Afghanistan, troops traversed mountain territory alternatively hostile and friendly. Small companies established remote bases whose pantries were not easy to stock. For targeted missions, tinier groups broke off to head to more

isolated outposts, deeper in the valleys, with kitchen cabinets even more difficult to replenish. The war against the terrorists posed big logistics challenges.

When they emerged from the valleys for respite, the troops set down their MREs and chose what to dine on. The Army and Air Force Exchange Service, an agency of the DOD, operates franchises of Baskin-Robbins, Blimpie, Burger King, Church's Chicken, Cinnabon, Dunkin' Donuts, Einstein Bros. Bagels, Pizza Hut, Popeyes, and Starbucks at posts around the world, including in the Iraq and Afghanistan theaters. The McDonald's at Ali Al Salem Air Base in Kuwait grew famous as the issuer of pre- and post-Iraq mission meals. The outlet's foreign-made burgers tasted different from fast food at home, but they were good.²

On February 3, 2010, former Afghanistan commander Gen. Stanley McChrystal ordered the 141 American fast-food joints operating in Afghanistan to close. He believed that the cappuccinos, chicken, and cinnamon buns distracted troops with their nutrient-deficient fast-food rich with memories of home (Jowers 2010).

Gen. David Petraeus succeeded Gen. McChrystal in the summer of 2010, after fifty-seven of the restaurants had heeded orders, deactivated the deep fryers, and cooled the grills. He brought a friendlier approach to dealing with counterinsurgency and a mandate to let the fast-food joints stay. The deep fryers resumed their sizzling, and short-order cooks once again hurled patties onto the grills.

"These quality-of-life programs remain important to soldiers for stress relief and therefore enhancing military readiness," Gen. Petraeus wrote in an October 4, 2010 order (Jowers 2010). With one clause, he connected comfort food to combat fitness, and he reauthorized the Burger Kings. At least occasionally, the perfect ration could be, above all, delicious.

To Gen. Petraeus, the calorie count and nutritional composition of a meal meant little unless commanders could answer yes to the question Col. Schnakenberg had asked years ago, before the reign of the individual ration, at Gen. Thurman's meeting back in 1983, the one that had launched his career and put the MRE in every warrior's knapsack: "But will the troops eat it?"

My MRE

West Point had disinvited me to dinner, but I was determined to eat a military meal. The military has prohibited resale of rations, and there are no active bases near New York City. So I decided to cook a ration at home.

Menu 17 from the 2012 selection of MREs sounded normal, if unappealing, and I decided to copy it.

I replaced Menu 17's Maple Sausage with a six-ounce slab of Spam (540 calories), a choice that bumped my plate more than a third of the way toward the 1,300 calories I needed to mimic the contents of one MRE. Each soldier gets three MREs a day, while West Point dining services expects cadets to eat 4,000 calories daily. At high altitudes, deployed soldiers need 4,600 (Department of Defense Combat Feeding Directorate 2012: 11).

The ninth edition of the Operational Rations of the Department of Defense lists the menu selections of the whole family of rations. The MRE is now the flagship, boasting main courses like chicken pesto pasta, beef stew, and maple sausage and accompaniments like au gratin potatoes, pretzels, and carbohydrate electrolyte beverage. By the Surgeon General's decree, soldiers should not eat an MRE-only diet for more than twenty days at a stretch. Commanders are supposed to supplement the rations with fresh fruit and vegetables for health and incorporate UGR-B group rations—basically, MRE food in bigger trays—to encourage a communal feeling at table. But more than any other ration at any time in history, the MRE enables a soldier to survive with the lowest possible logistic burden. It is lightweight, heavy-duty, and requires no cooking, though soldiers can warm their entrée pouches with a water-activated magnesium heating packet.

I tried to make my plate lightweight and cooking-free, and so next to the Spam—and instead of Menu 17's Maple Muffin Top and Crackers—I arranged fifteen Saltines (210 calories). A slice of Jarlsberg (80 calories) stood in for the ration's Cheese Spread, which in a real MRE is fortified with vitamins A, B1, B6, and D, and calcium.

In fiscal 2012, three American packaging companies executed the feeding contracts for the Department of Defense. Through the Defense Logistics Agency, Troop Support, in Philadelphia, the government commissioned three companies to "cook" the year's MREs: Evansville, Illinois-based Ameriquel Group; Mullins, South Carolina-based Sopakco Packaging; and Cincinnati, Ohio-based Wornick Company. They source, process, package, and send the MREs overseas. Military food contract fulfillment proves a hard gig. Standards for the contract require that each product be tested three times a year. Requirements vary as the latest research produces results, and the packaging companies have to react quickly. All MREs must weigh a pound and a half, last three years in an 80°F climate, withstand parachute drops of 1,250 feet, and be available in twenty-four annually updated menus in addition to kosher, halal, and

vegetarian versions (Department of Defense Combat Feeding Directorate 2012: 13).

In lieu of the Raisin Nut Mix in my Menu 17, I scooped three tablespoons of chunky peanut butter (285 calories) onto the rim of my plate near the Spam and added a tablespoon of strawberry jelly (50 calories) in a nod to the menu's Table Syrup. I mixed Gatorade powder (50 calories) into one glass of water and instant espresso (no calories) into another, lifting the total caloric content of my lunch to 1,215, close to my goal and more than two-thirds of the 1,800 daily calories the United States Department of Agriculture recommends for a sedentary 28-year-old civilian.

I shook out a folded cloth napkin, put it on my lap, and sat down to eat.

In 1941, the War Department commissioned the first individual ration, a meal paratroopers could carry in their pockets. The department approached Ancel Keys, who had master's and doctoral degrees in biology, physiology, and oceanography from the University of California, Berkeley and Cambridge but no experience working for the military. He served as director of the Laboratory of Physiological Hygiene, a department he had founded at the University of Minnesota the year before (University of Minnesota School of Public Health N.d.).

Keys left the lab and went to a Minneapolis supermarket. He bought packages of crackers, hard sausage, chocolate bars, and sucking candies—a shelf-stable, calorie-dense shopping basket that resembled my haul. With the pre-packaged products, he assembled a ration that weighed twenty-eight ounces, contained 3,200 calories, and fit into paratroopers' pockets.

"The meals were palatable," said one soldier who took part in testing the new ration at Fort Snelling, Minnesota, "better than nothing" (Oliver 2004).

A pack of portable subsistence offers permanent freedom from hunger. With enough food and water, we can march anywhere, climb any mountain. But in my kitchen, restricting my meal to nonperishables had left me sitting there in front of an eclectic, unappealing picnic that promised little of the satisfaction of even my modest civilian lunches: hummus sandwiches, chicken soup, and leftover spaghetti.

Adolf Hitler understood that war food should taste good. While Germany was winning World War II, he made feeding both troops and civilians effectively and deliciously a matter of policy. The Wehrmacht sat down to rye bread, sausages, canned vegetables, hazelnut paste, coffee, rock candy, and cigarettes.

"To eat well and to eat a lot gives a feeling of power," wrote Ernst Junger, a German officer who participated in the occupation of France during World War II (Collingham 2011: 170).

I faced my Spam, my peanut butter, and my crackers, and I wondered how to make them resemble a good, power-generating meal.

"You mix the cheese dip in with stuff," I remembered one MRE veteran had told me. "That definitely makes it a little better."

I ripped off a piece of my Jarlsberg and used the corner of a cracker to shovel the meat onto the cheese. The tiny open-faced sandwich was savory and pleasant, and palatable enough for me to chew and swallow.

In addition to the MRE entrée, each individual ration contains sides, snacks, and drinks, and this abundance, a logistical victory, explains the ration's near-monopoly: one package, lots of food. When fighting, soldiers have the ability to deconstruct their MRE pouches, eating some food now and some food later until the meal becomes a series of snacks, like my Spam-topped crackers.

One of the most popular accessories is Tabasco sauce, which arrives in a branded acid-proof pouch in most MREs, since soldiers love it. For authenticity, I doused all of my Menu 17's foodstuffs in hot sauce. Then I marshaled a few last bites into my mouth, upping my entire intake to a mere 200 calories before my appetite waned and I turned away from my attempt at lunch, the peppery Tabasco still tickling my throat. I chugged the Gatorade and downed the watery espresso, and the hydration sloshed down to salute the food in my roiling belly.

I must have neglected some important ingredient, I thought. I had added no high-tech supplements, and I had felt no low-tech satiety. There was some critical factor in the food soldiers ate, something sprinkled on the pizza I hadn't tasted at West Point. Only with the missing component would the meal I had prepared become the food of heroic combatants, the beef stew that made snipers aim true, the chicken pesto pasta that caused gunners to charge at the enemy bare-handed once they had lost their guns, the Asian-style beef strips that steeled the minds of captured soldiers so they did not capitulate during torture.

But after this lunch, I was in no condition to fight.

A History of Supply Logistics

The tremendous difficulty of delivering unspoiled food to soldiers around the globe explains why the food, upon arrival, tastes bad enough that a hungry person might not

devour every crumb. Only the delivery of equipment—guns, shelter, tanks—has posed so great a supply challenge for so long, and ammunition does not decompose like a raw steak in the sun.

But to launch a successful campaign, a general needs both gunpowder and well-fed soldiers. Napoleon called Frederick the Great the greatest tactical genius of all time, and Frederick the Great called an army a group of men who demand daily feeding. He knew a starving soldier could not obey his general's order to kill.

Ancient Greek warriors grasped this before Napoleon or Frederick, and so they carried grain rations with them as they marched. With food—usually flatbread—on their backs, they knew they would never starve. But they would hardly excel on a diet of grain. So when they passed through fertile regions, they added fresh food to their stores.

The warriors abided by principles when it came to plundering this fresh food, according to Xenophon, a warrior and the author of *Anabasis*, an account of the Spartan war march to Persia in 400 BC. In villages, the army ate corn, palm dates, and an acidulated drink made from the dates. But when they left a village, they took little with them. “Let us get rid of all superfluous baggage,” wrote Xenophon, “save only what we require for the sake of war, or meat and drink, so that as many of us as possible may be under arms, and as few as possible doing portage” (Xenophon 2008). A lack of food put men at risk of starvation, Xenophon understood. But too much food had dangers too. The transport of enough food to sustain a whole army for an entire campaign would ruin the proportion of fighters to support men, neuter the army, and quiet its battle cries.

In Europe's dark ages, mealtime and warfare converged. Mercenary soldiers did not need food to sustain grand campaigns; rather, they prowled the enemy countryside with one mission, to steal their next meal. The battlefield became the cafeteria of peasants who did not have enough to eat at home (Van Creveld 1977). Men fought for every supper. When they won, they dined on victory feasts of mutton, leeks, potatoes, and wine. When they lost, they went hungry.

By the nineteenth century, large modern armies on ambitious crusades conscripted a million men to fight, which charged commanders with the nourishment of a million stomachs. Napoleon used the scale of his force to win at Austerlitz, Jena, and Wagram. He fought as hard to procure the legionnaires' meals. The emperor preached the importance of transporting flour, rather than finished bread, to bakeries in the field, to minimize support logistics and reduce plunder as a method for feeding. But his field bakery plan required an extensive supply column, which his logistics coordinators

managed poorly. Crises befell many shipments of flour and the bakeries never seemed to churn out enough biscuits,hardtack-like flatbreads. And so Napoleon's combatants scavenged food from the countryside, just like armies before them.

Yet centuries of warfare had left the countryside barren, a problem for the troops. When they tried to plunder, they squandered much energy in exchange for meager food. On the campaign to Russia, empty fields and botched deliveries of biscuits weakened the French army, priming them for defeat. The emperor marched back to Paris, 800,000 men lost to failed logistics, or starvation.

Fifty years after Napoleon's defeat in Russia, Helmuth von Moltke the Elder loaded the continent's brand-new trains with breakfast and gunpowder. He marched King Wilhelm I's Prussians into France, supplied by trainloads of flour, meat, and ammunition. The Franco-Prussian War was underway, and, thanks to the railroad, Moltke's army would not need to waste any strength on looting (Van Creveld 1977: 101).

The regiment lay siege to Paris on September 19, 1870. But vandalism and train traffic jams soon held up the delivery of their rations. To avoid starvation, Moltke ordered the Prussian soldiers to put aside their rifles and pick up hoes and pruning hooks. In the occupied suburbs of Paris, they threshed Parisian wheat, they milled Parisian flour, and they baked Parisian bread. Then, they ate. It was brilliant.

“The army had therefore been made largely self-supporting,” Martin van Creveld, a military historian, wrote of the months of siege, “and for this reason could not find the time or the resources to engage on its proper business, war” (1977: 101).

Moltke had saved his army, but he did so with a gamble that the twenty-first-century Pentagon would hate to make, a bet that should have caused the siege of Paris to end in defeat—or peace, as in Isaiah 2:4: “And they shall beat their swords into plowshares, and their spears into pruning hooks: nation shall not lift up sword against nation, neither shall they learn war any more.”

Instead, the Prussians replenished their stores of rations, and their plowshares transformed into swords once again. In January 1871, Paris fell.

Three-quarters of a century later, the Japanese believed, at last, that they had overcome the eat-or-fight duality. Around the time Japan joined the Axis alliance, commanders distributed a pamphlet titled “Read this alone—and the war will be won.”

Here is what the pages said: troops should consider the complexity of their island nation's supply chain and the

expense of keeping all of them in rice and sweet potatoes. With this in mind, the argument went, if no food were available, each man should simply survive on *bushido*, which means “fighting spirit.”

A few years into this diet, after a loss to the Americans, one Japanese soldier wrote: “Spiritually, we are the winners of this battle. . . . Americans cannot live in a jungle subsisting on leaves and grasses; only Japanese can” (Collingham 2011: 271).

Yet in 1945, the atomic bombing of Hiroshima and Nagasaki nuked any notion that *bushido* worked as an approach to feeding a military. As Xenophon knew, as Frederick the Great reflected, as Napoleon learned when he lost in Russia, the soldiers, somehow, would have to be fed.

The Military-Culinary Complex

A 625-acre pond called Lake Cochituate surrounds the United States Army Soldier Systems Center on three of its sides. At the neck of the peninsula, a barbed wire fence blocks off the installation from Natick, Massachusetts, a town fifteen miles west of Boston. A guardhouse sits beneath the arched tent that serves as an entrance, completing the Soldier Systems Center’s moat.³

Inside the arch, I handed a guard my license, which he didn’t hand back. He ordered me to pull over.

“Open up your doors, your trunk, and your hood,” he said.

I stood several feet from the car. A sweeping parking lot stretched to the lake and on toward a village of squat buildings. DARPA hatches ideas, but in the Natick labs, military researchers methodically execute those high-tech notions. They teach mitochondria to subsist on body fat. They test and retest MRE entrées. They hold the secrets to military food that I had been searching for at West Point and in my own attempt to cook rations at home.

Inside the guardhouse, I met Julie Wielatz, a civilian administrator at the US Army Natick Soldier Research, Development, and Engineering Center, the Natick department that houses Combat Feeding. She gave me directions on how to drive within the installation and where to park. Then she got into the car with me.

“You have to be escorted at all times,” said Wielatz.

Wielatz led me past Natick’s cafeteria and a few facilities: the Doriot Climatic Chambers, the Metabolic Kitchen, and the Body Composition Laboratory. Finally, we crossed in front of a gravel lot of new-model modular field kitchens covered in khaki, army green, and white tarps and arrived at Combat Feeding. Wielatz handed me over to Jeremy

Whitsitt, a technology integration analyst, my tour guide, and a combat veteran.

I was here.

Inside Combat Feeding, a pale wood door with a colossal padlock obstructed the Meat Processing Room to our left. To our right, the secret kitchen—the one protected by the moat and the guardhouse and my chaperone—materialized.

In this kitchen, the food that soldiers will eat ten years from now undergoes rigorous examination, withstands six months of storage in 100°F chambers, and survives a simulated airdrop from a fifty-foot pole. The kitchen, a secret to the world, was airy, bright, and open to all of Natick. Only a white do-not-cross line taped to the floor barred entrance. Beneath a high ceiling, enormous stainless steel mixers, blenders, and retort machines caught the room’s fluorescent light and reflected the rays. The radiance landed on five employees—only one in a long blue lab coat, the rest in civilian dress—who huddled around an unlit stovetop in the back, engrossed in what Jeremy referred to as bench-top development.

“Is that cooking?” I asked

It didn’t seem to be. No smells wafted from the kitchen. The only suggestion of food preparation came from a woman in a hairnet who pushed a vat of breaded skinless chicken parts on a cart over to a cold deep fryer and left them there.

Jeremy and I stopped beside a frozen yogurt machine and a beige rectangle the size of six ovens marked with the sign, “Hazardous Waste Satellite Accumulation Site.” From there, we could see a metal vat at the far edge of the kitchen, set sideways on an unfinished mount of pipes and wires. The machine was a new Allpax brand gentle motion retort machine. Retort processing is how MRE entrees have been preserved since the 1980s.

“Everyone’s excited about it,” Jeremy told me.

So far I had observed no cooking at Natick. Natick, I soon discovered, produces contract requirements, not fried chicken. But here, at the center of the military-culinary complex, the supposedly edible foodstuffs proved bountiful.

A camouflage tablecloth covered a table in the Warfighter Café when Jeremy and I entered to find the Food Processing and Preservation team already seated in the meeting room. They had props: test tubes of discolored pineapple, pouches of polymer beads, and, soon, snacks. A man in khakis and a navy polo came in with five white serving platters: a rectangular tray of cheesy garlic focaccia, a plate of fragrant brown meat strips, two bowls of fruit cocktail—one retort-processed and the other preserved with new microwave-assisted thermal sterilization—and a square

plate on which rested a thin, blush-colored piece of salmon in alfredo sauce.

“Thank you, Brian,” said Jeremy.

The Food Processing and Preservation team researches ways to replace retort processing—preservation by heat—with preservation methods that maintain the color, scent, taste, and texture of a meal so that a plate of macaroni and cheese not only stays safe for soldiers but also remains recognizable to them as an American blue-plate special after submitting to texture- and taste-destroying 250°F heat for sixty minutes.

That line of research fit into Combat Feeding’s founding mission to get soldiers to eat more of their rations, back when Combat Feeding was Col. Schnakenberg’s Nutrition Task Force. Yet the idea that a whole department was still fighting microbes forty years after researchers developed the MRE seemed to clash with the lofty promises of Peak Soldier Performance to elevate each body to its highest potential. Before long, the Food Processing and Preservation team revealed that they could not quite devise the recipe for ration pizza, let alone spike the crust with super mitochondria. They talked instead about early research on edible films, which would separate the cheese from the sauce and the sauce from the crust. “Sauce changes the water activity of the whole pizza,” the team told me, as if that explained how a soldier absorbed strength from his food. I wondered how the Pizza Huts in Iraq dealt with water activity. For years, Houston-based KBR, a supply contractor and subsidiary of Halliburton, provided fresh American food, via Kuwait, to the embassy in Iraq’s Green Zone. Could the team consult with KBR about pizza?

Tom Yang, a food-processing specialist, had nicknamed the meat strips on the table “osmoroni.” To make them, an extruding head feeds seasoned ground meat through film roll dispensers, a vacuum evaporator, and a flash pasteurizer. The machine cools, dries, and presses the meat into a 1.5mm pliable sheet about two feet wide. Because drying, not heating, preserves the meat, osmoroni presents a potential vehicle for DARPA to convey high-tech molecules to fighters’ bloodstreams. This was bigger news.

Yet I hadn’t seen a room-sized metal wave filled with meat in Natick’s secret kitchen.

“Where is it?” I asked.

The meat-sheet processor was in Cayce, South Carolina, at a facility owned by FPL Foods, one of the nation’s largest meat-processing corporations. The team had bought the machine through a grant from the government’s Foreign Comparative Testing Program. Having a commercial food company’s interest portended success—industry enthusiasm could expedite

Food and Drug Administration approval and ultimately reduce production costs. “Subway wants it,” Yang said.

Osmoroni wasn’t confidential, I realized, as I nibbled on a pliable slice, taking in the complexity of the Mexican spices and the savory beef. A private plant in South Carolina wanted to market and sell the meat sheets in all different flavors to consumer food companies, as if it were not cutting edge at all.

The spiciness of my osmoroni had given way to an unwelcome sweetness, and I perched the last two inches on the wire binding of my notebook. The team pointed out that microwave-processed fruit beat out the retort-processed fruit, texturally, and I took bite after bite of alternating canned fruit cocktails, one marginally less mushy than the other, trying to free the wretched remnants of the osmoroni from the crevices of my molars.

At Natick, the scientists and researchers talk a lot about a concept they call acceptability, the legacy of Col. Schnakenberg’s “but will they eat it?” That’s why they want to invent decent macaroni and cheese and spend time experimenting with pizza. When soldiers need calories most, in cold weather or on high-stakes missions that depend on top performance, they receive ration supplements of highly acceptable foods: brownies, French toast, and milkshake powder. Osmoroni was the most futuristic food I had laid eyes on, but osmoroni was unacceptable. I couldn’t take another bite. I found myself craving Spam on a cracker. Or a burger and fries.

Just as the Food Processing team was about to convince me that pizza made with imperceptible plastic films comprised the entire future of military eating, two women from Performance Optimization Research entered the Warfighter Café.

“Is that the osmoroni?” said Danielle Anderson, a food technologist with Performance Optimization. She and her colleague, Ann Barrett, a chemical engineer, each ingested a meaty rectangle. Then Anderson voluntarily ate a wedge of focaccia.

At last, the Performance Optimization Researchers would tell me about miracle food, food that brightened a soldier’s brainpower and freed him from fatigue.

On cue, Brian brought in a bowl of caffeinated meat sticks and a plate of brand-new omega-3 lemon poppyseed cake. Both looked as if I had come to expect military food to appear—brown, geometric, and dry.

“What do these do to make soldiers better?” I asked.

“Caffeine is definitely a stimulant,” said Anderson, pointing to the meat sticks. Two sticks compare to one cup of coffee. Omega-3 can improve mental health, and the cake is a stab at reducing the military’s suicide rate.

When athletes break world records, they credit their superhuman physical feats to obsessive diets. Some Olympians, like swimmer Michael Phelps, eat as much as they can. Others bolster their muscles by mimicking cavemen, avoiding all food but lean meats and fruits and vegetables. Still others carbo-load. What was Natick's little trick for soldier performance? Would Anderson feed a soldier junk food if the Big Mac optimized him for his duties?

"Though a warfighter is specialized, he's not the same as a highly trained athlete," Anderson said to me. "With an athlete, if you can pump five more pounds of iron, do you win? Yeah, maybe. With a soldier, the question is, if you eat this, can you . . ."

She paused, searching for a metric. I thought, *kill better?*

But she said, "run faster?"

I looked up from my meat sticks.

"And the answer is usually no," she said.

Comfort Sandwich

Down the road from the Soldier Systems Center, a boxy American behemoth overlooks Route 9. After leaving the installation, I rode the elevator to the top level of the Natick Mall and circled the food court.

The menus at Wok Kitchen, Cajun Café and Grill, and Sbarro's read like MRE descriptions, all ersatz stir-fry and chicken burrito and pasta with meat sauce, all fashioned into edibles from ingredients that an awesome global supply chain had transported to Natick. Down the road from the Soldier Systems Center, the C-list fast-food chains of America were the real culinary center. Their food, the comfort food of American-bred soldiers, had inspired the recipes for military meals.

But the military meals had fallen short. American science had so thoroughly deconstructed dinner that dinner had ended up unacceptable: not as tasty as Sbarro, not as nourishing as fresh whole-grain bread, and not as efficient as a futuristic all-satisfying food pill.

As civilians, we want to believe in DARPA, in Natick, in high-tech food that produces fit bodies, that the US military is feeding and clothing and sheltering soldiers—the DOD's "most decisive weapons platform"—not adequately but well (Department of Defense Combat Feeding Directorate 2012: 5). We want to decide that soldiers are superhuman warrior athletes, perfected from the molecular level on up, or that they are humans, worthy of the energy and comfort that a good meal bestows. But between the scientists' cries for enhanced mitochondria and the soldiers' cries for pizza, the

military kitchen has gotten stuck cooking bad beef stew bolstered with nothing more prodigious than vitamin B.

Earlier, around the Warfighter Café table, when I had begged Anderson, the Combat Feeding food technologist, to wow me with the absolute latest in food optimization technology, she had said, "There's a big emphasis on load." She meant that the less a soldier carries, the fewer opportunities his muscles have to collapse beneath the weight of his sack. With the calorie-dense MREs and UGR-Bs and First Strike Rations, Combat Feeding was capitalizing on centuries of wartime experience in which the army least burdened by either starvation or food would win the fight. Sure, technology was helping mitigate tiredness with caffeine, the passing thought of suicide with omega-3 cake, and hunger with milkshakes made from a less-and less-terrible tasting powder. But the war-winning lunch prevailed because of the missing ingredient, what was not in a GI's pack, not in his food, not in his belly, and not in his soul.

"That's a performance enhancer," Anderson had said.

With that bit of logic, Brian had tidied the tabletop. He cleared the caffeinated meat sticks piled high in a bowl too fancy for meat sticks and rid us of the lemon poppyseed omega-3 cake. He took away the strips of osmoroni and the gummy, too-sweet focaccia. Above the emptied table, I noticed an oversized replica of a dogtag that bore Combat Feeding's motto—Coming Soon to a Theater Near You—a sinister slogan, and one that fixed in my mind the directorate as the sovereign hand of an incompetent cook nevertheless set on preparing our dinner.

At the mall, I made a second lap of the food court and ate a sandwich, feeling the 400 calories worth of bread, cheese, and tomato enter my blood stream and slake my appetite, at least long enough to fuel my drive home. 🍷

NOTES

1. The following section relies on conversations with Gen. David Schnakenberg and on the website, <http://www.military-nutrition.com>.
2. According to an interview with Tony Bottigliere, a combat veteran.
3. The following section is based on my visit to Natick Soldier Systems Center, November 29, 2012.

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