

“K” for Keys: Dr. Ancel Keys and his “K-Ration”

BY CHARLIE MAGUIRE

DR. ANCEL KEYS, the man who put the “K” in “K-Ration,” was always on the move. He crammed a lot of living into each day, like the combat soldiers he helped to nourish with his revolutionary compact three-meal-a-day servings during World War II.

Keys was born in 1904 in Colorado Springs, Colorado. He survived the 1906 San Francisco earthquake, had insight into the movie business in early Hollywood (his uncle was famous silent actor Lon Chaney in *Hunchback of Notre Dame*), worked in a lumber camp, shoveled Arizona bat guano sold for fertilizer, was an explosives assistant in a gold mine in Colorado, and was married and divorced — all before he was 19 years old.

On a trip to China aboard a steamer, his marriage behind him, Keys started thinking about nutrition. He later quipped: “The crew’s diet was mainly alcohol. I don’t remember eating anything.”

Throughout his life, Keys had plenty to say about nutrition. The book he coauthored with his second wife, Margaret, *How to Eat Well and Stay Well the Mediterranean Way* landed him on the cover of *TIME* January 13, 1961. Indeed, his pioneering research in diet, smoking, and cholesterol was ahead of the curve and was “somewhat heretical” for his time, Dr. Russell Luepker, a colleague of Keys at the University of Minnesota, remembered. “He was an incredible, detail-oriented, compulsive guy,” Luepker said. “You always knew where [he] stood.”

Nutrition in the field

But it was the Field Ration Type K that arguably bore Key’s biggest influence, especially on American GIs during WWII.

“An army marches on its stomach,” a saying by Frederick the Great (also attributed to Napoleon), remains a solid fact of military life. The French *baguette* is said to have originated so that Napoleon’s soldiers could carry the long, thin bread loaves in the legs of their trousers. A Roman legion required 60 hogs and 120 sheep a day on the march. And in 1775 the Continental

Congress authorized Washington’s army “one pound of beef per man, one pound of flour, or bread, and spruce beer or cider.” When those weren’t available, soldiers would beg or steal needed provisions from the local populace, a practice that continues in almost all war zones.

Prior to and during the Second World War, the US Army had a whole alphabet of ration standards to feed the troops. The A-Ration was served at the mess hall or aboard ship — fresh everything — meat, poultry, and produce. Then there was the B-Ration, served behind the front lines in the field, which contained the same ingredients but came in cans. The C-Ration, which evolved until it was replaced by



Soldier samples new concentrated rations designed by Dr. Ancel Keys, 1941. Courtesy Hennepin County Library.

MREs (Meal, Ready-to-Eat) in 1981, was well balanced, but heavy and bulky. The only portable (I did not say “potable”) ration, was Ration D: a bar of bitter chocolate, with sugar, oat flour, cacao fat, skim milk powder, and artificial flavoring — hard enough to serve as a bludgeon and able to withstand



Dr. Ancel Keys, director of the Laboratory of Physiological Hygiene at the University of Minnesota, 1941. Courtesy Hennepin County Library.

temperatures of up to 120 degrees without melting. It was a deliberately unappetizing concoction so soldiers would consume it slowly, and so unpopular with the troops that most of the 52 million bars that were ordered, were uneaten and considered “surplus” by the end of 1945.

Keys confines calories in containers

Still on the move and stubbornly inquisitive, Keys (after several more degrees and a teaching stint at Harvard) went to Peru in 1935 to study the effects of altitude on the human body, before finally settling in at the University of Minnesota in 1937 with his own lab located beneath Memorial Stadium (1924–1981). The stadium was an appropriate location for Keys, whose name would be synonymous with so many GIs in the Second World War. The main archway that was over the entrance, and is now inside McNamara Alumni Center, is inscribed: “This stadium was erected by members and friends of the University of Minnesota to honor the men and women of Minnesota who served in time of war” — a reference to the immense costs of WWI.

In 1941, US Army Air Corps Colonel Rohland Isker walked through Auditorium Gate 27 down to Keys’s lab. His mission: to secure a light, yet nutritious, nonperishable meal for pilots who had lived through a crash landing. “I suppose someone in



ABOVE: Original K-Rations package design, 1943. Courtesy Library of Congress.

TOP: A Boeing B-17 "Flying Fortress" dropping K-rations. Courtesy National Archives and Records Administration.

the War Department had the crazy idea that because I had done research at high altitude, I was therefore qualified to design a food ration to be eaten by soldiers who had been briefly a few meters above the ground," Keys drily explained.

The two men spent time not in the lab, but true to Key's penchant for on-the-move learning, headed out on foot to a nearby grocery store. There they "purchased 30 servings of hard biscuits, dried sausage, chocolate bars, and hard candy" off the shelves. A platoon of GIs at nearby Fort Snelling were ordered to chow down on the groceries but did not display much enthusiasm for the idea or the ingredients. Keys called for a second trial at Fort Benning, Georgia, home of the Airborne. When cigarettes, chewing gum, matches, and toilet paper were added to the package, the paratroopers gave the ration a thumbs up.

From trial to factory to field

Wrigley, known mostly for its chewing gum, got the contract for the first million rations and, before its inventor could be notified, named it the K-Ration in honor of Keys. The Army called it "the greatest variety of nutritionally balanced components within the smallest space." A day's allotment of all three meals amounted to just under 9,000 calories and weighed less than two pounds. Somewhere along the line, the K-Ration was approved for all military operations, not just survival emergencies.

Indeed, the K-Ration became so engrained in the Army mindset that the newest field uniform designs evolved around them. The M-43 Field Jacket had two upper chest pockets just big enough to hold two 7-inch by 2-inch K-Ration boxes,

one in each pocket. The all-cotton heringbone fatigue shirt and trousers (HBT uniform) had two chest pockets for the rations as well as pockets on the trouser seam for two more. The K-Ration had supplanted the *baguette* for the soldier of the 20th century, but a hundred-some years later they were still carried by soldiers in the same places on their person.

As Allied forces moved from North Africa to Italy, and finally to France on the way to Germany in the European Theater of Operations and closer to Tokyo in the Pacific Theater of Operations, one complaint about the K-Ration kept arising: coffee was included only in the breakfast ration box. The dinner and supper rations contained lemon powder drink (also suitable as floor or oven cleaner, as some wags on KP said). Lieutenant Paul Boesch of the Eighth Infantry Division put it this way: "No one ever understood why the army did not see fit to put coffee in all three K-Ration meals." Boesch saw "times during the course of the war when GIs would reach over and relieve a dead buddy of his breakfast ration, whereas they would leave the dinner or supper boxes untouched. By October 1944, when coffee was finally included in the supper meal, the *New York Times* reported on it in their January 4, 1945, edition.

Despite the improvements, the "K-Rat" was designed only for combat conditions lasting two or three days. In reality, offensives took far longer, perhaps weeks on end, and troopers long sick of the three choices would open the K-Ration meals, take out the candy, cigarettes (four smokes per box), and the instant coffee, and throw away the rest. Canned meat or egg concoctions, cheese, biscuits, dried fruit, halazone tablets for purifying water, toilet paper, and a key to open the cans were discarded. Later, GIs in Korea and Vietnam would sometimes carry their can openers around their necks on the same long chain as their dog tags.



PUT ON YOUR FLASHERS:

University Recreation and Wellness Center, McNamara Alumni Center, and a parking ramp sit on the former site of Memorial Stadium (dotted line).

Gate 27, the entrance to Keys's Laboratory of Physiological Hygiene, was located somewhere between Walnut and Oak along what today is an extended block of Beacon Street Southeast (A). The historic main stadium entrance archway with its inscription was preserved and is inside the alumni center (B).

Dr. Ancel Keys is memorialized on two panels along the U's Scholars Walk stretching between the alumni center and Northrup Auditorium. Bring along a box of Cracker Jack and have a few bites to get the feel of the size of the K-Ration box and to pay homage to one of its manufacturers.

SOURCES

- historynet.com/man-behind-incredible-nearly-inedible-k-ration.htm.
- tomharperkelly.com/breakfastkraton.
- cbsnews.com/news/k-rations-inventor-dead-at-100.
- usarmymodels.com/ARTICLES/Rations/krations.html.
- mnhs.org/mgg/artifact/k_rations.
- dday-overlord.com/en/material/equipment/k-ration.
- continuum.umn.edu/2016/08/memorial-stadium-remembered/.
- digitours.augsburg.edu/items/show/54.
- history.com/amp/news/soldier-war-time-food-rations-battle-napoleon-vietnam.
- defense.gov/Explore/Features/story/Article/1933268/c-rats-fueled-troops-during-and-after-world-war-ii.
- warfarehistorynetwork.com/2016/09/30/k-rations-created-the-worlds-best-fed-army.

Cases of K-Rations being loaded for transport. Courtesy National Archives and Records Administration.

In the footsteps of soldiers and scientists

The heritage of the K-Ration lives on in the backpacking meals hikers and mountaineers can buy today, and if you've ever tasted any product made by Wrigley's, Heinz, Hills Brothers, Kellogg's, Cracker Jack, or even Hiram Walker and Sons, you are in effect marching in step with the soldiers from over 80 years ago who were issued a K-Ration meal manufactured by one or more of those companies.

Dr. Ancel Keys died at age 100 in 2004 in an assisted-living apartment in Bloomington that he shared with his wife. The man on the move, known for food on the move, had eaten wisely most of his life. His daughter Carrie D'Andrea noted that: "His diet was key to his longevity."

We still have deep lessons to learn from Keys. After the war, he conducted experiments in his lab that were designed to mimic the gritty conditions of a postwar Europe under reconstruction. He found that some of his "Starvation Experiment" volunteers "had lost 25 percent of their body weight, their hearts had shrunk, endurance fell, and their personalities changed." The most powerful lesson, Keys concluded, was that "starved people cannot be taught democracy."

Charlie Maguire is a songwriter and musician who loves a good story and a good meal and makes frequent stops for both in Hennepin County.

