

2014 Ammunition Hall of Fame Inductee
MAJOR GENERAL (RET.) JOHN C. RAAEN, JR.



“I’m frightened to death of ammunition, but love it,” are the words of Major General (Ret.) John C. Raaen, a man who devoted his career to serving for the US Army in ordnance. Maj. Gen. Raaen served 36 years in the military and significantly impacted the design, supply, and management of ordnance material, including ammunition. His devotion provided service members with high quality equipment and munitions in the field. His experience with munitions, weapons systems, and logistical supply operations spans three wars. Significant contributions to the Ordnance Corps include a distinguishing role in establishing the Single Manager for Conventional Ammunition (SMCA) operating structure that persists today. Maj. Gen. Raaen also worked in research and design, supply, and management fields

that provided him the full life cycle perspective of supplying ordnance material to the field. Raaen built upon each of his assignments and experiences to advance ammunition management strategy in his later career. Raaen’s lasting contributions and 36 years of service are highlighted in the following nomination.

Raaen was born on 22 April 1922 in Fort Benning, Georgia into a military family. His father served in the Army and ordnance community for over 20 years. Jack Raaen earned the rank of Lt. Col. in the Ordnance field and guided his son into the Army and ordnance community. Raaen’s teenage years were spent at Frankford Arsenal where he worked in the Pitman Laboratory and learned about testing of ammunition cartridge cases and bullets - particularly the core material on the armor piercing ammunition. He also learned about various testing machines and techniques. It seemed natural that, like his father, his life followed a similar path of dedicated service to the U.S. Army and Ordnance Corps. Raaen officially began his military career with an appointment to the United States Military Academy (USMA) in 1939 at the age of 17. At the USMA he was appointed Cadet Captain and Regimental Supply Officer. He graduated from the Academy in the top 15% of his class ahead of schedule in 1943 and was commissioned as a 2nd Lieutenant for the Corps of Engineers.

As the U.S. entered World War II (WWII), Raaen was assigned to the newly activated 5th Ranger Infantry Battalion located in Camp Forest, TN. With the Battalion he engaged in amphibious and commando training in Florida, England, and Scotland. On 6 June 1944, as the Headquarters Company Commander, Raaen participated in the initial assault onto Omaha Beach, Normandy, France. For his bravery and actions he received the Silver Star and Combat Infantryman Badge. He continued in combat with the Battalion through the Brittany campaign across France, and finally into the Saar Valley where, after earning two Bronze Star medals with “V” device, he was injured in December of 1944 and was evacuated to the United States. Raaen has recounted his experiences in these historic battles in various publications. On June 6, 1944, during the assault landing on the Dog White sector of Omaha Beach as part of the invasion of Normandy, General Norman Cota (assistant Commander of the 29th ID) calmly walked towards Major Max Schneider (Commander of the 5th Ranger Battalion) while under heavy machine gun

fire and asked “What outfit is this?” Someone yelled "5th Rangers!" To this, Cota replied “Well, Goddamn it then, Rangers, lead the way!” This moment created the “Rangers Lead The Way” motto. Raaen recounts these historic events in his paper/after action reports.

After recovering from his injuries, Raaen was appointed an instructor in the Department of Ordnance at the USMA in July 1945. He learned the intricacies and safety required for producing and handling ammunition and instructed ordnance courses at West Point. Teaching ammunition, explosives, and understanding ballistics led to his interest in physics and helped prepare him for future positions. In 1948, he attended the U.S. Naval Academy Post Graduate School at Annapolis, Md. and later received a MA degree in nuclear physics from Johns Hopkins University. In an oral history interview, Raaen vividly recounts his early years in the military and his burgeoning interest and experiences in the ordnance field.

In 1951, Raaen accepted assignment as the Executive Officer in the Ammunition Development Branch of the Office, Chief of Ordnance for three years. Raaen worked with artillery ammunition, small arms, propellants, and several other ordnance materials. Raaen was directly involved in numerous research and development projects and testing of ammunition items like the cast iron shell, combustible cartridge cases, two-shell case prototypes which were meant to provide a faster way to produce artillery shells, and the testing of thin stabilized shells for anti-tank operations and increased armor penetration. Raaen was directly responsible for innovations that improved the lethality of ammunition items. For example, he originated the idea to place piercing rods down the center of certain bullets to allow for helmet penetration. As the Executive Officer, Raaen made significant contributions to ordnance due to his invaluable efforts in the design of ammunition items.

In addition to the above accomplishments, Raaen deserves recognition for his work in the following ammunition designs. Raaen invented methods of shaping the charge of a shape charge projector. By placing an inert substance in the proper position and of the proper geometric design, so that when the way it hit the cone, it hit simultaneously with the exact cone shape, provided increased bullet penetration. The differences were two to three times the penetration of an unshaped shaped charge. Raaen explained, “If you know how explosives work, they lag at surfaces and the wave goes forward. The wave travels faster in itself then it does when it's in contact with a container.” To avoid this effect, Raaen figured out the technical requirements for achieving greater bullet penetration.

After this tour, Raaen was assigned to Korea as a Major as the Executive Officer, 8th U.S. Army Ordnance Section to manage ordnance issues in the field. Raaen was responsible for the maintenance, renovation, movement and acquisition of weapons, vehicles, and ammunition for troops. When equipment needed spare parts for repair and the Army could no longer continue to cannibalize old WWII equipment, Raaen helped invigorate actions to procure spare parts and bring new material into the pipelines. After serving in the Ordnance Section, Raaen took command of the 83rd Ordnance Battalion and continued his efforts to improve ammunition management in Korea. Raaen was important in developing initiatives to get the supply lines running in Korea and revamping field stock control systems.

In 1959, Raaen traveled back to the United States to continue his work in the ordnance field. He accepted orders to Germantown, Md. to work for the Atomic Energy Commission (AEC). As a liaison officer he coordinated Army correspondence and subject matters to the AEC departments and officials. The committee he served addressed very technical research and development with artillery warheads and nuclear arming devices. After graduating from the Industrial College of Armed Forces in 1963, Raaen was stationed in West Berlin, Germany and served as the Ordnance Officer, Assistant Chief of Staff, G-1, and Deputy Chief of Staff of the Berlin Brigade. At the time the Berlin Brigade, Ordnance Section, was in essence a small ordnance battalion augmented with many LN (local national) workers. The Ordnance Section had all facets of ordnance light through heavy maintenance, the accompanying supply (Class II & IV) and ammunition. In these Berlin positions, Raaen was critical to ammunition maintenance, stock management and storage issues at a time of high tension in Berlin. Later, as a Depot Commander of the United States Army Ammunition Depot in Miesau, Germany, Raaen paid particular attention to receipt, storage, issue, surveillance and renovation of ammunition. Upon taking this command he recalls the “mess” that ammunition was in. Stock numbers didn’t match up and items were coming into the depot in individual shipments instead of on pallets. He worked immediately to rectify the situation and organize the depot processes. Though his time at the depot was limited, Raaen made significant improvements in depot operations and accountability. He quickly stepped in and solved problems of ammunition shipping practices and storage and would build upon these experiences later in his career.

In September 1965, Raaen accepted a leadership position at the Army Research Office (ARO) in Durham, N.C. The opportunity was different than prior assignments. He was responsible for the oversight of the program and managed researchers and scientists developing applicable processes and items for the U.S. Army. During his time at the University of North Carolina, Raaen recalls the ARO’s achievements in the advancements of polymerization and as a result a step forward in that whole industry of modern plastics.

In 1967, Raaen became the commander over three Army Materiel Command (AMC) Laboratories located at Aberdeen Proving Ground, Md.: the Ballistic Research Laboratories (BRL), the Human Engineering Laboratories (HEL), and the Coating and Chemical Laboratory (CCL). During his tour he consolidated these three labs with the Nuclear Defense Laboratories of Edgewood Arsenal into the Aberdeen Research and Development Center (ARDC). Maj. Gen. Raaen worked closely with each of the lab directors and recalls various stories about important developments. For example:

“The Hawk Missile had to have white paint on it. But unfortunately, white paint reflects radar. And the enemy could send surveillance planes over and pick up that white like a blaring light. Charlie Pickens and his people developed a white paint that scattered radar, so radar was blind to it. And what he did essentially was put tiny little wires, very microscopic wires throughout the paint. And of course, they were randomly oriented. Now, when radar hit them, they activated these wires. These wires then radiated light randomly. So the signature was very, very low. And this was one of the great inventions of the Ordnance Corps.”

Raaen also invented the anti tank shell that contained a long rod penetrator during this timeframe. Raaen had oversight over numerous programs and research and development projects

at each of the laboratories. His knowledge of physics and experience in the ordnance field allowed him to provide insight and assistance to lab projects. His consolidation of the Ordnance Corps prime research labs into one organization, without stifling the free research and scientific development, was critical to future R&D efforts in the US Army. Raaen contributed significantly to ordnance development of new weapons, munitions, and equipment.

After this tour, Raaen continued his service and completed a tour to Vietnam. In January 1969 he was assigned to Headquarters, United States Army Vietnam (USARV), first as the Chief of the G4 Ammunition Division, later as the Chief of the G4 Supply Division and finally as the Deputy Assistant Chief of Staff, G4. Raaen worked numerous issues to include shortages of 2.75" rockets in the field. Though supply of the field exhausted CONUS stocks, Raaen and his staff figured out a way to cover shortages in the field where they were needed most. Because all the stocks were in theater, leaders were very nervous about explosions and losing the stockpile to unforeseen circumstances. Raaen encountered numerous challenges to supplying the field and working ammunition shortages. His quick judgment, previous experience, and actions brought theater ammunition management into a working system and they managed to stay ahead of the challenges and meet all requirements. Because of his superior work in the ammunition field they moved him into other classes of supply to work out identical problems and shortages. After managing all supply divisions, Raaen became the Deputy G4 and was involved in planning of removal of forces and equipment from Vietnam. As the deputy he also computed Army requirements to be submitted to Congress for the budget. He was also involved with Operation Red Hat, the movement of toxic munitions from Okinawa, which involved a tremendous amount of planning. Raaen's contributions in Vietnam ensured that Soldiers in combat always had sufficient ammunition based on mission priorities.

After his tour in Vietnam, Raaen was assigned to the Army Ammunition Office. In this position he continued to manage ammunition stocks for the war effort in Vietnam that included ensuring that ammunition budgets were normalized for both combat and peacetime requirements.

In 1971, Raaen took command of the Mobility Equipment Command in St Louis, Mo. This was the first of three AMC major subordinate commands he led. The Mobility Equipment Command focused on development and sustainment of bridges and automotive items. In December 1972, Raaen moved to Rock Island Arsenal to serve as the Commanding General of U.S. Army Weapons Command (WECOM). It is during this time that the Army/Services began discussions on creating a Single Manager for Conventional Ammunition (SMCA). Raaen was involved with oversight and review of numerous studies to determine what that concept would turn out to be. Buried in the various studies circulating during that time, there was a random thought of a single manager. Though Raaen isn't sure where a single manager concept actually started, he understood it was the whole thesis behind the formation of the commodity command in the Ordnance Corps. He states, "SMCA was to get a single manager for every commodity, which would prove difficult because of the current organization. OTAC had guns, which belonged to the weapons command, and they had ammunition, which belonged to the munitions command. And as they continued to study ordnance management structure, people realized that the Air Force and the Army and the Marines and even the Navy used the same ammunition." While reorganizing AMC major subordinate commands (MSCs), Raaen continued to study and create the SMCA.

In July 1973, Raaen organized and assumed command of the US Army Armament Command (ARMCOM). ARMCOM was a merger of the Weapons and Munitions Commands at Rock Island Arsenal as well as the Ammunition Procurement Supply Center to create a first life cycle management command for armaments and munitions. In this assignment, Raaen was responsible for 25 active ammunition plants and seven arsenals. He completed the consolidation, including closing and geographically moving two major ammunition commands to Rock Island, during close out of Vietnam and without dropping any missions or support to the Army.

In June 1975, the SMCA study committee recommended that a separate Military Munitions Command be established in AMC or an Army Command reporting straight to Department of the Army. The Army forwarded its recommendations in August 1975, but a different option recommended placing the SMCA as subordinate to AMC's ARMCOM. During staffing of the implementation plan Services battled over ownership, funding, R&D, transfers, transportation, and maintenance. Raaen believed that the Services should have an account by quantity, not location, while the Services believed they owned what they paid for and could demand by lot number what they were issued. Many of these issues could not be resolved due to inter-Service agreements, the inability to come to consensus, and the plan tended to take the Army position on many issues. The decision resulted in an Army based management system that had to coordinate inter-Service transfers, transportation, depot locations, etc. The Implementation Plan followed the concept laid out by Raaen with the study committee members. In Raaen's last days of command at ARMCOM, the SMCA operating structure was activated.

Raaen was also part of the first of officers in the Joint Conventional Coordination Program (JCAP) that coordinated the conventional ammunition production base. The JCAP consisted of senior ammunition officers and still presently meets quarterly to discuss joint ammunition issues. Though the complete story of SMCA from conceptualization to operating doctrine is beyond the trajectory of this paper, the SMCA operating environment is still relevant and in existence today. The Joint Munitions & Lethality Life Cycle Management Command (JM&L LCMC) is the SMCA operating agent. The Joint Munitions Command (JMC - Previously was ARMCOM) is considered the field operating agent for the SMCA and has evolved to encompass the broader mission of providing ammunition management from a joint perspective to all military Services in coordination with PEO Ammunition and Army Research and Development and Engineering Center (ARDEC). This is largely due to the initiatives that began under Raaen's command and direction.

After ARMCOM, Raaen took command of the Defense Fuel Supply Center in Washington, D.C., his fourth general officer command. In this role he was responsible for all supply of fuel for military operations. Raaen noted that his command was also responsible for humanitarian efforts during snow storms in the United States. He pushed Congress and Department of the Army authorities to use Department of Defense fuel stocks for emergency response to the situations. After his tour, Maj. Gen. Raaen made the difficult decision to retire.