EXPERIENCES IN ARMY OPTOMETRY

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ABSTRACT

In this personal account of 26 years of active service in the U.S. Army, the author writes about her experiences in various roles, first as an optician and as a maintenance officer, and then after optometry school, as an Army optometrist, and lastly after completing a Ph.D. degree, as a vision researcher.

KEYWORDS

Military optometry, Army optometry, Humanitarian missions, U.S. Army Aeromedical Research Laboratory.

When I was 17 years old, I decided to take my future into my own hands and find a way to pay for optometry school. It had been my goal to become an optometrist since eighth grade. The dream all started with the process of writing a report about how the eye is the window to the brain when my library browsing led me to a book about optometry as a career. I was instantly hooked on the combination of math and medicine that optometry represented or perhaps I just thought eyes were cool. I certainly had no experience with an actual optometrist, as I was lucky enough to be an emmetrope. So, at 17, partway through a year of community college, I decided to check into the Army's GI Bill program. The plan was to enlist in the Army for three to four years as an optician and then get out and go back to college and optometry school using the GI Bill. That plan turned into a 26-year career in the military where I served as an optician, a maintenance officer, a clinical optometrist and a research optometrist.

In 1976, soon after I turned 18, I headed out to Fort McClellan, Alabama, for Women's Army Corps Basic Training. Just like in the movies, the bus that delivered us to the drill sergeants arrived in the darkness of early morning with a mist that made the Fort seem like its own island. I had secured a slot in the Army as a 42E, optical laboratory specialist, and was looking forward to the training. But first I had to become a soldier!

1976 was an interesting time to join the Army. It was the bicentennial of the country, the Vietnam War and the draft had ended, and we were an all-volunteer service. Integration of men and women within the services was coming. In fact, before I finished basic training, the Women's Army Corps was dissolving and we were now all becoming part of one Army.

There were two enlisted specialties in the Army that I felt would be good lead-ins to a career as an optometrist: optical laboratory specialist and optometric assistant. Both were competitive specialties and it just so happened that the first one became available first. So, after basic training, I was sent to the U.S. Army Medical Equipment and Optical School (USAMEOS) at Fitzsimmons Army Medical Center, Denver, Colorado. Here I learned how to

fabricate glasses from surface generation and polishing to edging and finishing. Some of the most stressful moments of school including (1) dropping a steel ball onto my carefully edged and safety beveled glass lenses and hoping they wouldn't shatter and (2) taking the arm of the generator and hoping I had calculated all my lens curvatures and thicknesses properly.

In each phase of optical lab tech schooling, I was highest in my class. At the time, this meant a promotion and, since there were three phases, I finished 42E school at the rank of Specialist E-4. The Specialist rank of E-4 was equivalent in pay to a corporal rank of E-4. The idea was that not everyone or every career field required a corporal or sergeant rank and that being a specialist signified a more technical position. At graduation, I was also selected to be the first female instructor at the school. The course director, Maj. John F. Pyle, had seen something in my abilities. This sentiment was not entirely shared by the team of male instructors I was about to join. They felt I was only coming on board because of my gender and that, without a few years "in the field," I would not be a good instructor. Naturally, I was determined to prove them wrong. Maj. Pyle was determined, as well, and provided me with amazing mentorship and encouragement. Two years later, one of the senior instructors at the school took me aside and apologized that he had doubted my capabilities and was proud to have served with me at the school.

In order to be stationed with my husband, who was now also in the Army and serving as a warrant officer, I had to make a career change. This involved attending the Basic Medical Specialist course at Fort Sam Houston, Texas and convincing the hospital administration at Fox Army Health Center at Redstone Arsenal, Alabama, that I had enough knowledge to serve in the optometric assistant position, despite not attending the course. Finally, I was getting some experience in an optometric setting! The optician skills were certainly helpful. On one occasion, I adjusted a pair of glasses for a retiree and the next day he returned with a flat of strawberries to show his appreciation.

At this point, I had planned to finish my commitment to the

Corina van de Pol, OD, PhD. Image courtesy the author.

Army and cash in on the GI Bill to complete my pre-optometry requirements. I had completed my associates degree in ophthalmic technology and quite a few prerequisites through night school classes. Instead, I took the two-year degree and decided to apply for the Army's Officer Candidate School. This led me on a four-year detour that included becoming an ordnance officer (that's "maintenance" in Army-speak) and served as a shop officer for a communications and electronics section of one of the 1st Armored Division maintenance companies and ultimately, a maintenance detachment commander in Germany. I had a great time leading my Detachment on field exercises to prepare for defense against a communist invasion from the east and being the only female officer on an Air Defense and Field Artillery Kaserne. Soldiers would often cross the street just to be able to salute the female Lieutenant!

While all that was challenging and interesting, it was way off course from my goal of becoming an optometrist. So, after eight years of Army service, and as a captain, I decided to leave the Army and my marriage (coincidental) at this point and return to California. I had one year of prerequisites still to complete. Unfortunately, it was just about the entire science portion of the prerequisites. So, I had a lot of work to do. I attended Sacramento State, City College of San Francisco and Hayward State to fit all the courses into that one year, and then I enrolled at UC Berkeley School of Optometry.

Before my last year of optometry school, my mentor from USAMEOS, now Col. John F. Pyle, reached out to me to let me know that the Army's Health Professions Scholarship Program had just been reinitiated and I should apply! After getting him to promise to send me back to Germany upon graduation, I signed up. Great deal for the Army – one year of in-state tuition and I was signed on for a four-year commitment as an Army optometrist.

In 1990, after graduating from optometry school and in the middle of the Medical Officer Basic Course which was to prepare me for a life in the Medical Service Corps, the Gulf War (Operation Desert Shield) started and I wondered whether I would need to pack for snow in Germany or the sands of the Middle East. Col. Pyle assured me that I wouldn't be going to the desert until I had seen at least 1,600 patients! I did some quick math and determined that at a rate of 10 patients a day, I would hit that point in about eight months. When I got to my first assignment at Warner Barracks in Bamberg, Germany, I soon realized that my estimates were a bit off. Patient counts were more like 15 to 20 per day, thanks to the rapid and decisive responses of my military patients to that perpetual optometric question: "Which is better, one or two?" "One, Ma'am; two, Ma'am." My timeline just shrank!

The optometry clinic at Warner Barracks was part of a community health clinic that included all services through urgent care. I was the only optometrist and I was authorized one technician. When I arrived in snowy Bamberg in January of 1991, many of the soldiers assigned to Warner Barracks had been deployed to Iraq in support of Operation Desert Storm (ODS), the next phase after Operation Desert Shield. However, family members and retirees were still very interested in getting their eyes checked. Additionally, soldiers from the Puerto Rico National Guard had been deployed to back-fill the soldiers that had deployed to the desert. So, during those first months of really being an optometrist, my patient load was very mixed. I think I ended up providing eye exams to the entire Puerto Rico NG unit!

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Because of Operation Desert Storm, there were shortages of some soldiers, including for my optometric assistant slot. So, over the course of the first year, I filled the slot with Red Cross volunteers or basic medics or sometimes it was just me serving as technician and optometrist. Finally, after a year, I got my assigned optometric assistant, Spc. Bill Dombrowski, who was energetic and ready to learn. Within a short amount of time, we had improved our efficiency and revamped the schedule to see more patients. We set up a walk-in clinic for active duty soldiers in the morning and allowed retirees to sign up, as well, with the knowledge that they would be seen after the active duty soldiers.

I didn't deploy to the desert, but I did join a medical team on a humanitarian mission to Zambia in 1992. I had already been involved in a few Lions humanitarian vision missions and had some idea of how to set up a remote area clinic. I obtained a field optometry set and an edger, lenses and frames, along with pre-made readers and added them to the pallets of medical equipment that were loaded onto the C-130 transport plane. We flew from Germany to Rota, Spain and then on to Zambia. Once in country, we set up a medical clinic that included community health, dentistry, primary care and optometry. Patients walked for hours and sometimes days to receive our care. We built a retinoscopy "booth" out of piping and black plastic and completed numerous trial frame refractions and health assessments. Most difficult to deal with were the patients who had already lost their sight to corneal infections and ulcers and we had nothing more to offer them. For those we could help, a new pair of glasses brought great joy and many blessings. In fact, the chaplain on the mission decided to volunteer with optometry, instead of dentistry, as he was impressed with how many of the patients just wanted to be able to read their bible.

When I returned to regular clinical practice in Bamberg, I was asked by the commander of the Vilseck and Grafenwohr Army Training Areas, during his eye exam, to provide his soldiers some sort of optometry services. After getting permission to close my clinic in Bamberg down a few days a month, I created a mobile clinic operation by packing up all my diagnostic equipment and strapping a slit lamp biomicroscope into the back seat of my car. We set up in the community center and ran some parachute cord to hang up the phoropter (I didn't have a mobile stand) and saw between 20 and 30 patients a day.

The effort was so successful that eventually the commander was able to convince the medical command to authorize him a full-time optometrist and, the next thing I knew, I was reassigned to Rose Barracks, Vilseck as a division optometrist (assigned to support a combat unit). This also meant building an optometry clinic where there had never been one. I was given the old laundromat and gym building to convert into my new office, and I created a way to set up two lanes within the same room using an L pattern and maintained a full 20-foot testing distance for both chairs.

Dr. van de Pol at a remote clinic in Vilseck, Germany refracting a patient using a phoropter hung with parachute cords, circa 1993. Image courtesy the author.

In 1994, I was asked to join a medical mission to Nigeria with the Special Forces. The Special Forces team hadn't taken optometry before, but on their last mission they had found that the Nigerian soldiers were having trouble seeing the targets during rifle and pistol training. For this mission, I took a selection of single vision distance and pre-made readers. As it turned out, most of the soldiers were presbyopes and being able to see the rifle sights was more of a problem than seeing the targets on the range.

After five years of clinical practice, I decided to apply for the Army's Long-Term Health Education and Training (LTHET) program to complete a PhD and move into the area of research. The general consensus at the time was that this move might make it harder for me to get promoted to lieutenant colonel. The Army sent me to the University of California Berkeley where I spent 3½ years wearing civilian clothes and working towards my Vision Science PhD in the area of corneal refractive surgery and visual function. With all the work completed toward the PhD except for the final defense of the thesis, I went to my first assignment as a research optometrist at the U.S. Army Aeromedical Research Laboratory (USAARL) at Fort Rucker, Alabama.

A few years later I was promoted to lieutenant colonel and experienced a very exciting and challenging new chapter in my Army life. During the five years I was stationed at USAARL, I was involved in research to assess whether LASIK and PRK should be

authorized procedures for incoming Army aviators and current aviators who had experienced a refractive change with age. The criteria for entry into Army aviation at the time included 20/20 uncorrected visual acuity with no history of refractive surgery. If we showed that LASIK and/or PRK did not impact visual and flight performance, it would increase the pool of applicants and would provide experienced aviators with options other than contact lenses to allow them to have the best interface with heads up display and night vision technologies. The research at USAARL, combined with findings in Navy and Air Force studies, eventually led to the approval of LASIK and PRK for Army Aviation. Other research I was involved in allowed me to evaluate contact lenses and visual corrections for pilots of various helicopters, evaluate new generation night vision goggles in flight alongside Dr. Bill McLean, and interface with researchers working on advancements in head-mounted displays, sleep deprivation studies and human factors.

One of the research efforts in which I participated was in conjunction with the Navy and was an effort to evaluate the impact of altitude on the eyes and vision. Subjects who had gotten refractive surgeries such as PRK and LASIK and a few who had RK were recruited for the study that would be held at the top of Pikes Peak, Colorado (14,110 feet elevation). The main things we learned from the research were that corneas modified with PRK and LASIK don't significantly change at elevation, whereas RK corneas change significantly. Connecting with the Navy in this study opened the door for my last duty assignment in the Army.

For the last few years of my Army career, I served as the director of research for the Navy Refractive Surgery research effort in San Diego, California. I worked with Dr. (Navy Capt.) Steve Schallhorn, who had worked very hard to bring the discipline of Navy research to a number of companies developing new refractive surgery technologies. This was my introduction to medical device research and working with Industry.

I retired from the Army as a lieutenant colonel with 26 years of active service. I'd basically completed four different chapters from optician to maintenance officer to optometrist to researcher. The Army gave me great opportunities to grow and face challenges head on. These skills served me well in my follow-on career in medical device research with AcuFocus, Inc. and now in my role as an optometry school professor bringing a new generation of optometry students into this exciting and diverse career.