

J. MARTIN CARLSON, CPO, FAAOP: A QUIET LEADER

By Laura Hochnadel
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"Quiet leadership is what moves and changes the world."

-Joseph L. Badaracco, the John Shad Professor of Business Ethics, Harvard Business College, Harvard University, Cambridge, Massachusetts

Every profession and industry has leaders on whom the limelight shines brightly-men and women who are lauded for their successes and looked upon as mentors. However, many, if not most, effective leaders shine even more brightly outside of the limelight-maintaining a low profile and working for the betterment of themselves, their organizations, and even society. These quiet leaders, responsibly doing the right thing without fanfare, are who Joseph L. Badaracco discusses in his book, *Leading Quietly: An Unorthodox Guide to Doing the Right Thing*.



In the O&P profession, one such quiet leader is J. Martin "Marty" Carlson, CPO, FAAOP, owner and chief engineer of Tamarack Habilitation Technologies (Tamarack), Blaine, Minnesota. In his life thus far, Carlson has more professional accomplishments than a room full of people could hope to achieve in their combined lives. In addition to his aeronautics and mechanical engineering degrees and his orthotist and prosthetist certifications, he is an author, researcher, inventor, teacher, manager, business owner, award winner-and the list goes on. And although his techniques, such as the "Carlson AFO Modification," and innovations, such as the Gillette orthotic seating system and Tamarack ankle joints, are widely used, Carlson has achieved all of these things while not calling attention to himself.

Though Carlson has certainly made his mark on the orthotics profession, "it is his warmth and humanity that make him so special," says Wendy Beattie, CPO, FAAOP, who adds that one of her career highlights was playing an instrumental role in selecting Carlson for the American Academy of Orthotists and Prosthetists (the Academy) 2009 Titus-Ferguson Award, a lifetime achievement award that recognizes accomplishments

and contributions that have "made a significant impact on the growth and development of the profession." Carlson also received the Academy's Clinical Creativity Award in 1997.

Mark Payette, CO, R&D Manager at Tamarack, who has known Carlson for 30 years, echoes this sentiment by describing Carlson as a down-to-earth man who loves people. "Marty has always been the kind of leader who quietly allows the people around him to take credit for successes-he puts the spotlight on them," Payette says. "He leads by giving opportunities and allowing people-like me-to explore and experiment with new techniques and materials, and to succeed and fail in our work."

Foundational Influences for a Young and Curious Mind

Working with and repairing farm machinery, hearing about Sputnik, and a high school math teacher with a penchant for science and engineering are among the things that Carlson counts as his early influences. The third of seven sons, Carlson grew up on a small dairy farm in east-central Minnesota. With the technological advances that the world was experiencing-especially in terms of aerospace endeavors and the subsequent push for increased spending on science and engineering educational programs-it was a great time for a curious mind to come of age.

Armed with a mechanical aptitude and a curiosity about concepts and elements that were literally out of this world, Carlson pursued science and the ordered world of engineering at the University of Minnesota, Minneapolis, earning a bachelor's degree in aeronautics and engineering and a master's degree in mechanics and materials with minors in metallurgy and mathematics. After graduation, Carlson says he spent the next six years of his life as "one of science's engineering minions, grinding out more efficient devices for the [aerospace] industry." Dissatisfied with improving instrumentation, no matter how sophisticated, and disturbed that his tax dollars were being spent to fund a war in Southeast Asia, Carlson urgently and deliberately sought out a new career in which he could use his background to help and heal humans. After researching various careers, he determined that designing and providing artificial limbs would be a perfect fit.

While there is little direct crossover between aeronautics and O&P, his studies had given him a solid background in classical mechanics and materials behavior, which Carlson says provides him a perfect basis for understanding the biomechanical aspects of O&P.

Persistence Pays Off



Marty and Peggy Carlson (fifth and sixth from the right) are surrounded by the Tamarack Habilitation Technologies staff.

Once Carlson had made up his mind, he set out to find his ideal situation. Armed with a goal, focused persistence, and the Yellow Pages, he began calling O&P facilities in the Twin Cities. Because he was most interested in working with children, the contacts he made referred him to Gillette Children's Hospital, St. Paul, Minnesota. After convincing the medical director and administrator to meet with him, his persistence paid off. By the end of the meeting, he was Gillette's new "brace shop" manager-the "brace shop" also fabricated prostheses. With absolutely zero knowledge of O&P, Carlson jumped into the fray, forging a new career in pediatric orthotics.

During this time, Gillette, which is a teaching hospital, had a Medical Education and Research Foundation (MERF) and soon Carlson was visiting O&P centers of excellence around the United States and Canada. These visits were designed to educate and challenge Carlson to bring back progressive ideas and forge ahead from these. Through MERF's generosity, Carlson says, he also took the O&P diploma short courses at Northwestern University Medical School, Chicago, Illinois, earning his CO designation in 1975 and his CP designation in 1978.

Within a few years, and "with fantastic support from the medical director, Robert Winter, MD, and his entire staff, the physical therapy staff, and the administration," Carlson says, he transformed the brace shop into the "Habilitation Technology Lab." Under Carlson's 16-year directorship, the Habilitation Technology Lab "got involved in seating and wheeled mobility, augmentative (non-verbal) communication aids, and other things that helped severely handicapped kids function."

Pediatric Specialties Lead to Innovative Solutions

Carlson counts Winter and John Lonstein, MD, two world-famous spine surgeons, among his early mentors at Gillette, saying they "taught, guided, and opened doors of opportunity" for him. Their tutelage helped Carlson segue into his first sub-specialty, spinal orthotics. According to Carlson, Lonstein also ran a cerebral palsy (CP) spine clinic that saw non-ambulatory children, most of whom had spine deformities. His second sub-specialty, pediatric seating, was inspired by the physical therapists at Gillette, who were interested in helping these kids have better sitting posture and be more functional. The Habilitation Technology Lab staff developed sitting-support orthoses that resisted the progression of the children's collapsing spine deformity, thereby improving their posture and helping them to be more functional at home and school. This led to Carlson's development of the Gillette orthotic seating system.

Pediatric seating was a fun sub-specialty, Carlson says, because it allowed for immediate results and it was life-altering for the children with whom he worked. "What you did for these little kids you did for the whole family," Carlson says.

"They [children with CP] would be wheeled in [sitting] in these old wheelchairs, and they would be slumped [over]....," Carlson recalls. "When you tried to look at them, you would see the top of their heads; you didn't see a cute little kid. We would sit them up, position them for better orthotic support and joint positioning and things like that...and then you could...see his face and he would be looking at you. He could interact."

Now able to make eye contact, these kids became more functional and interactive-commanding attention from their families and, in a sense, allowing them to become human *beings*. At school, they could now see their teachers and interact with their classmates. Their chairs were fitted with lapboards, which got their arms up in front of them so they had a good surface to work on and they had good posture.

"That's the big realization that comes out of all these social considerations," Carlson adds. "We can do all kinds of things to help kids walk, walk better, or sit better in their wheelchairs, but the ultimate goal of pediatric rehabilitation is to get these kids to the age of 18 or 19 or 20 with a positive image of themselves...and a good level of independence. That has more to do with their happiness than how well they walk."

Transformation

While Carlson was helping to transform children's lives, his own life and environment were transforming as well. The hospital grew, and during his tenure his department grew from a dozen employees to 30. His position shifted from a technical and patient-oriented focus to a more administrative focus, and the latitude for innovation began to shrink-especially as componentry choices began to be driven by L-Codes and insurance coverage.

Wanting more control over his choices and desiring career flexibility, Carlson founded Tamarack Habilitation Technologies, a full-service orthotic, prosthetic, and rehabilitation engineering facility, in 1990. He expanded his patient services to the adult population, and Tamarack became the referral source for some of the most complex cases in the region and beyond, Carlson says. However, the insurance and reimbursement issues that started to surface while he was at Gillette grew more complicated.

After ten years of increasing struggles with reimbursement difficulties, Carlson did what he does best: he found a solution. He and his wife of 23 years, Peggy, Tamarack co-owner and vice president, gifted the patient care portion of the business to Fairview, a large local hospital-clinic system headquartered in Minneapolis, Minnesota. It was his 1999 New Year's resolution to do so, and negotiations and legalities were completed in late December of that year. In January 2000, Tamarack became strictly a developer and manufacturer of components and materials for orthotic, prosthetic, and pedorthic care professionals, allowing Carlson to focus on his interests in biomechanics and design.

Giving Back in More Ways than One



Carlson accepts the Academy's Titus-Ferguson award in 2009.

Carlson says he has wandered through several orthotic sub-specialties and has made no major contributions, in part because he has dabbled in so many different directions. This statement, however, discounts the fact that he has authored and co-authored at least three dozen publications, and he has given even more technical presentations, traveling to all seven continents, on a variety of orthosis-related topics. Carlson and the Tamarack staff are also responsible for a variety of O&P innovations and products that are in worldwide use.

As for his personal life, Carlson and Peggy live on a virtually self-sustaining, organic, solar-powered farm that generates more power than they can use. Carlson grows oats,

hay, and a bit of corn, while Peggy's vegetable garden feeds them year round. They also raise chickens and sheep.

"[Marty's] creativity is amazing, as is his ability to visualize possibilities," Payette says. "His favorite solutions are always the very simple, clean ones."

Although many colleagues send praise his way, Carlson is quick to shift the focus toward others. He credits his past success to his mentors and coworkers, and his current success on his capacity to recognize and employ talented, hard-working people whose abilities and giving spirit have allowed and greatly helped him accomplish things. He also is quick to extend kudos to those who have taken on leadership roles in the various O&P professional organizations.

"Among the O&P profession, there have been so very many exceptional people who have generously shared their insights and advice," he says. "To mention any names would feel like a slight to the many, many other people in this field that I have learned from and come to admire and respect. They, and the patients, are [my] inspiration and reward."

Carlson, it seems, leads as he was led when he first set out on his O&P journey, giving people the tools and inspiration they need to achieve great things.

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