



MAN IN THE ARENA

GEOFFREY S.M. HEDRICK, **THE**

April 21, 1942 – January 12, 2022

Geoffrey Hedrick, the founder, Chairman of the board and Chief Executive Officer of Innovative Solutions and Support, Inc and creator of approximately 100 patents in the avionics industry passed away 1/12/2022 due to complications from a sudden illness in Vero Beach, Florida where he has a home.

At age 79, he reflected with contentment on the full and vibrant life he had enjoyed. Mr Hedrick, was the son and nephew of entrepreneurs which undoubtedly instilled in him the pursuit to create striving for what could be rather than what was. Mr. Hedrick's father, Paul Harrington Hedrick and Uncle, Carl Krause, participated in the development of the Sperry Mk 19 gyrocompass design

which enabled accurate under-ice navigation for the USS Nautilus to arrive at the North Pole. Geoffrey spent his entire professional career in the avionics industry contributing greatly and in many ways redefining electronics, optoelectrics, electromagnetic, aerospace and contamination-control fields. His most recent and final invention of an auto throttle was a new technology designed to save lives and prevent small aircraft from flipping over and killing passengers and crew. A graduate of the Trinity School in Manhattan and Cornell University, Geoffrey received a degree in electrical engineering in 1965. Shortly after graduation, Mr. Hedrick sustained severe injuries in Albuquerque, NM while making a cross country trip, rendering him hospitalized for 4 ½ months. While there, with the support of strangers who became heroes and lifelong friends he recovered changing his career trajectory from Law to Aviation, and as a result, the skies are safer for it. Having never forgotten the kindness and care received, years later he donated a state of the art MRI machine to the Emergency Room of the University of New Mexico Hospital (formerly the Bernalillo County Indian Hospital).

As noted by long time friend, investor, colleague and Board Member, Robert E. Mittlestadt, "Anyone who has flown on a commercial airliner is likely to have benefitted from one of Geoff's innovations." Mr. Hedrick's contribution to the world of flight is long and varied. To that end, many of his inventions, innovations and patents were improvements on existing technology to solve a problem in a way that was new or unique.

Altimetry and Air Data Computers

As a young man one of Geoff's first patents had to do with improving the encoding altimeter. Altimeters had been around for 50 years but in the 1970's as the number of aircraft flying increased, it became critically important to send a signal to a radar station so controllers could see the altitude of an aircraft.

Later, in the early 1990's Geoff developed a way to dramatically improve Solid State Barometric Altimeters (SSBA). These devices use pressure sensors rather than an expanding bellows to measure air pressure to convert to altitude. He did not invent the SSBA but developed *new ways to sense barometric pressure extremely accurately. The result was SSBA units built for the military that became 20 times more reliable and three times more accurate than existing altimeters especially in the A-10 attack aircraft – one of the most demanding environments for an altimeter. That product is still sold to the US military.

Even good altimeters have inherent errors as altitude increases because of very low temperature and anomalies related to speed. Thus, at high altitudes aircraft above 28,000 ft were separated by 2,000 ft to insure safe vertical separation. With more and more flights in the US and around the world closer spacing became necessary. As a result, the FAA mandated that by January 2005 any aircraft flying above 28,000 ft had to have a special system and certification for RVSM – reduced vertical separation minimum so that they could fly with 1,000 ft vertical separation. This doubled the capacity of our high-altitude airspace. Geoff and IS&S developed a unique set of sensors, algorithms and air data computer interfaces that resulted in a system that was extremely accurate, with easier installation, and dramatically lower cost than competitors. This product provided IS&S with its best year for market share, revenue, and profitability.

Display Systems

Geoff's interest in electronic displays goes back to the 80's when he filed a patent to dramatically improve the old clunky CRT displays that we used with our computers. This line of business was not pursued, but as flat panels came along, he and the Company looked for ways to improve and use flat panel displays in aircraft. This led to the development of flat panel displays to replace older individual single round instruments for individual functions. These so called "steam gages" failed too often and were expensive to repair. IS&S focused on retrofitting older aircraft that were functional but needed updating. Companies like American Airlines and others retrofitted their 757 primary flight displays (PFD) with the new IS&S integrated panels. IS&S PFD's have been approved by the FAA for installation on Boeing 737, 757, 767, Pilatus PC-12 and Eclipse Jet aircraft. Military aircraft like the venerable C-130 have been equipped with flat panels that replace dozens of engine control instruments. Boeing's new KC-46 Air Force Tanker uses IS&S displays for the boom operator station to refuel other aircraft.

ThrustSense® Autothrottle

Geoff was most proud of his patent of the first auto throttle that the FAA has approved for a turboprop aircraft. The initial certification was for a Pilatus PC-12 single engine turboprop aircraft. This system simplifies pilot operation of the engine as well as enhanced safety features to prevent improper operation of the engine. For twin engine aircraft, the system protects the engines from

damage, but also reduces and possibly eliminates loss of control causing rollover accidents when one engine fails. These accidents are fatal.

In 1971, Geoff worked briefly in the aviation instrument subsidiary of Bulova, then founded Harowe Systems, Inc as a joint venture with another company in aerospace hardware. By 1978, Harrow Systems had grown substantially and was acquired by Smith Industries. He continued to run Harowe and later served as President and Chief Executive Officer of Smith Industries, North American Aerospace Companies. In 1988 he founded IS&S where he served as Chairman and Chief Executive Officer. During his business career, he spoke on entrepreneurship, won awards in technology, and served on the Cornell Electrical Engineering Board for eight years. He established a Department Chair at Cornell University focusing on Control Theory.

Mr. Hedrick was a man of great integrity with high ideals and equally high expectations. There were few who knew him well and many who might have misunderstood his impatient demeanor. However, for those who took the time to understand his genius, it was his devotion to excellence while understanding the necessity to develop new technologies in aviation that was the constant weight on his shoulders.

Long before “The Man in the Arena” was popular, a copy of it was printed and framed by a notable board member, and friend. Benjamin Cosgrove, a previous senior vice president from Boeing. It was quite an honor to Geoff that Mr. Cosgrove thought that these attributes applied to him. In fact they were his very essence.

“It is not the critic who counts; Not the man who points out how the strong

Man stumbles, or where the doer of deeds could have done them
better. The

credit belongs to the man who is actually in the arena, whose face is
marred by,

dust and sweat and blood; who strives valiantly; who errs, who comes shot
again

and again, because there is no effort without error and shortcoming; but
who does

actually strive to do the deeds; who knows great enthusiasms, the great
devotions;

who spends himself in a worthy cause who at the best knows in the end
the triumph
of high achievement, and who at the worst, if he fails, at least fails while
daring greatly,
so that his place shall never be with those cold and timid souls who neither
know victory
nor defeat.”

These words were spoken by Theodore Roosevelt, 26th President of the United States during a memorable section in his “Citizenship in a Republic” speech in Paris in 1910. Like Roosevelt these words captured Geoffrey’s inherent philosophy, and epitomized his very essence.

To paraphrase Brene Brown and Tony Fahkry (health and self improvement experts) the willingness to show up changes us, it makes us a little braver each time. It has been said that critics come with the territory of leadership, especially when a person advances in a career or personal life. The person who dares greatly is willing to scale new heights and put reputation on the line. But, when industry leaders referred to him as a legend, titan, or one-of-a kind, he was frankly stunned.

Apart from his business life which was so intimately intertwined with his private life, he enjoyed a life long love affair with aviation holding his private pilot's license since the age of 16. His passion for flight, only partially addressed his love for adventure which also included racing Formula 4 race cars, skiing, and polo. Aside from his love of adventure and travel, Geoffrey was a great fan and supporter of the arts. He loved music of all kinds, from the Philadelphia Chamber Orchestra to rock and roll. On more than one occasion Geoff would break out in song while in the midst of cooking dinner or mowing the lawn. Geoff was an accomplished cook who took great pride in using every pot, pan and dish in the kitchen.

He served as an inspiration and mentor for many family members and business acquaintances, a powerful force to be reckoned with, and tough task master. He believed in helping others and encouraging them to “Pay it forward”.

His “greatness” was not just his contribution to the avionics industry. Geoff leaves behind a devoted family who willingly embrace his attributes which he instilled in his daughter, step daughters, grandchildren, niece and nephews. His daughter, Stephanie Hedrick Connolly recalls that he proudly and admirably was “Mr. Mom” raising her as a single father, while traveling and running a challenging

business. To that end, he never missed a field trip, took pride in his ability to make perfect ponytails and enjoyed getting his Mother's Day card every year. Since his marriage to Susan in 1989, he has been her adoring husband for 32 years. To his step-daughters, he was larger than life, the "go-to" guy, who would be quick to set aside work to answer a question and always sent flowers on their birthdays.

His son-in-law, Christopher Ginieczki, noted that "outside of his professional life, Mr. Hedrick was constantly in motion. He would attack everyday problems with boundless energy, often finding clever solutions. He was relentless in these endeavors and loved to learn precisely how and why things worked, as well as share his answers with others."

Geoff's nephew, Dr. Brian Hedrick of Clearwater, Florida, remembered his remarkable conflict resolution skills; including dispatching bullies, to managing the boardroom. "He could connect on multiple levels: big brother, motivator, second father and hero" he said.

He was very proud of our military and service personnel, but due to medical reasons, he was unable to serve in the Armed Forces. He supported many military organizations, such as T2T.org and Wounded Warriors.

He was a man with a big personality, big heart; generous and compassionate, with a huge commitment to excellence in his profession. He was a strong and tough critic of himself, always adhering to the adage: "To thine own self be true." He will be deeply missed.

In addition to his wife, Susan he is survived by his daughter, Stephanie Hedrick Connolly, step daughters Beth Higgins, and Chrissy Ginieczki. His grandchildren, Evan Thomas Hedrick and Geoffrey Ryan Hamilton Connolly, Nicolas and Anna Ginieczki. His niece, Sandra Miller and nephews Dr. Brian and Douglas Hedrick. In lieu of flowers, donations in his memory should be directed to; "T2T.org" and "Support.woundedwarriorproject.org/Donate".