

**John Clarence Herther**  
**50 Greenleaf Way #131**  
**Burlington, Massachusetts, 01893**  
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## **Qualifications and Education**

- Air Force Missile and Space Pioneer Hall of Fame Inductee (2003)
- Registered Professional Electrical Engineer, State of Massachusetts (1960-present)
- Master of Science in Aeronautical and Electrical Engineering, Massachusetts Institute of Technology (1955)
- Bachelor of Science in Mechanical Engineering, North Carolina State College (1953)

## **Employment Summary**

1999-2011 MITRE: Senior Multi-Discipline System Engineer-SATNAV & Superiority  
1998-1999 MITRE: Consultant full time  
1997-1998 Sanders, a Division of Lockheed-Martin: Consultant (full time)  
1983-1997 MITRE: Senior Staff System Engineer  
1969-1982 Iotron Corporation: Founder, System Engineer  
1969-1969 Raytheon Corporation: Contracted Consultant  
1957-1969\* Itek Corporation: Unit Director  
1953-1957\* United States Air Force ROTC Commissioned Officer

## **Experience Overview**

### **2011- Present: AutoMATE Marine Systems- President & Chief Engineer, Burlington, MA**

- Designed re-hosting plan to productionize and reengineer AutoMATE anti-collision technology.
- Recoded Lockheed MAC 16 to C for integration with Apple Mac mini (marine ruggedized/other capable) and iPad. Basic core nearly complete. Granted four US improvement patents in 2012.

### **1999– 2011: The MITRE Corporation- Senior Multi-Discipline System Engineer, Bedford, MA**

- Analyzed GPS III, NAVWAR anti-jamming technology and multiple classified programs.
- Conducted GPS Threat studies for MITRE East-wing and NASIC on GPS and Tactical Radio.
- Tracked and analyzed vulnerabilities effects on CSEL, JPALS and JDAM SDB DoD missions.

### **1997- 1998: Sanders (Now BAE Systems)- Full-time Consultant, Nashua, NH**

- Developed Compass Call radar and communication jammer and additional classified programs.

### **1983- 1997: The MITRE Corporation- Senior Staff System Engineer, Bedford, MA**

- Classified Intelligence Communication Systems (EW, ELINT, COMINT) such as JTIDS, AWACS, ASTECS, ....

### **1969- 1982: Iotron Corporation- Founder, CEO & President, Bedford, MA**

- Developed and produced the world's first computerized, fully automatic, self-plotting radar Collision Avoidance System (CAS).
- Developed AUTOMATE automatic bridge system, which included integrated computerized radio navigation from Transit satellite, Loran C, Decca and a fuel saving adaptive autopilot.
- Pioneered automatic target acquisition in a standalone Collision Avoidance System.

- Directed development of IOTRON's DP-16 computer - a full HW/SW emulator. The DP 16 CPU (similar to military design) included conductive cooling; built with individually tested MIL SPEC reject IC's but re-tested only for relevant marine bridge environment.

**1969- 1969: Raytheon Corporation- Consultant, Sudbury, MA.**

- Developed Loran C (50 to 90 m repeatable accuracy) integrated with US Navy Transit satellites 100 m fixes every 100 minutes to provide 20 supertankers with <100 m continuous positional accuracy for display of superimposed traffic lane charts on DigiPlot's radar PPI 20 years ahead of civil GPS.
- Consulted Raytheon on assignment trouble shooting and technical evaluation of division capabilities during strategic planning phase of a major reorganization.

**1957- 1969: Itek Corporation- Research & Development Directorate Manager, Lexington, MA**

- Director & Manager of the Research and Development Directorate of Optical Systems Division.
- Developed prototype of a large frame \$10M space borne precision earth mapping camera, which was flown by NASA in 1984, whose film was used after Corona as the exclusive source for WGS 84 systems using the US Navy Transit and air force GPS.
- Developed the post flight data reduction concept for the WS 119L balloon camera instrumentation and FORTRAN programming on an IBM 650 digital computer

**1956- 1957: United States Air Force- Lieutenant & Project Officer, Los Angeles, CA**

- Worked on the Atlas booster interface and was responsible for the program's decision to select the MIT Instrumentation Laboratory to develop the ascent guidance and on-board attitude control systems with Lockheed as the producer using the best inertial component suppliers in the field.
- Integrated the design of the Agena—originally referred to as the SAMOS universal payload satellite stage or Truck—with Atlas and engineered the Agena airframe, including propulsion, guidance and control subsystems on WS-117L.
- Approved for a three-year doctorate at MIT.
- Pioneered the three-axis satellite stabilization system.

**MITRE and United States Air Force Publications**

Herther, J.C., Influence of Excess Propagation Loss on Super-High Frequency Standoff Support Jammer Concepts (U), WP-92B0000174, June 1992 (SECRET)

Herther, J.C., & M. Weiner, Johnson-Gierhart Program Predictions of Excess Propagation Loss for Super-High Frequency Air-to-Ground Paths Volume 1: Theory and Numerical Results, United States Air Force, ESC-TR-93-161- (I), Defense Technical Information Center (DTIC) # AD A267020, June 1993

Herther, J.C., & M. Weiner, Johnson-Gierhart Program Predictions of Excess Propagation Loss for Super-High Frequency Air-to-Ground Paths Volume 2: Appendices, United States Air Force, ESC-TR-93-161- (II), Defense Technical Information Center (DTIC) # AD A267021, June 1993

Herther, J.C., A Computer Analysis Program for Comparing Ground Based Aircraft Radar Jammers (U), MTR 9527, March 1986 (SECRET)

Herther, J.C., & C. Lewis, Combined Requirements and Task Definition Document for the Baseband Processor, MTR 93B0000051, April 1993.

Herther, J. C., ASTECS Sensitivity Tradeoff Analysis, MITRE Working Paper 93B0000189, July 1993

Herther, J. C., Theater Missile Defense: VHF Environment Study, Overview and Methodology, United States Air Force, ESC/IN-2660-07-93-Volume 1, 15 Nov 1993

Herther, J.C., Theater Missile Defense: VHF Environment Study, Appendices United States Air Force, ESC/IN-2660-07-93-Volume 2, and 18 Nov 1993

Herther, J. C., Theater Missile Defense: VHF Environment Study, Database, United States Air Force, ESC/IN-2660-07-93-Volume 3, 7 Dec 1993

Herther, J. C., Theater Missile Defense: VHF Environment Study, Briefing Charts, United States Air Force, ESC/IN-2660-07-93-Volume 4, 15 Nov 1993

#### **Non-MITRE Technical Publications**

Herther, J.C., The Potential of Automatic Radar Plotting Aids for Maneuvering in Dense Traffic and Restricted Waters, FCC Radio Technical Commission for Marine Services Symposium, May 1980

Herther, J.C., Co-authored the Annex: Collision Avoidance Systems-Automatic and Computerized Systems, to The Use of Radar at Sea edited by Captain F. J. Wylie RN (Retired) of the Royal Institute of Navigation, Published by Hollis and Carter, 1978

Herther, J.C., F. Warnock, K. Howard, and Van der Velde, W., DIGIPILOT, - A Self Adjusting Digital Autopilot for Better Maneuvering and Improved Course Keeping, International Symposium on Ship Steering Automatic Control, Genoa Italy, June 1980

Herther, J.C., V. Prushan, A Modular Integrated Bridge System, Ship Operation Automation (Second Annual Symposium) Washington, D.C. September 1976

Herther, J.C., L. Pearson, USNR, (Retired), Why Auto-acquisition for the Ship Collision Avoidance System, National Marine Meeting, United States Institute of Navigation, October 1973

Herther, J.C., J. S. Coolbaugh, A Fully Automatic Marine Radar Data Plotter, The Royal Institute of Navigation, Vol. 24, No. 1 January 1971

Herther, J.C., and Wylie, Captain F. J. R.N. (Retired), DIGIPILOT - Fully Automatic Marine Radar Plotter, Radio Holland NV Symposium, October 1970

:  
JOURNAL OF GUIDANCE, CONTROL, AND DYNAMICS Vol. 29, No. 6, Nov–Dec 2006  
*Genesis of Three-Axis Spacecraft Guidance, Control, and On-Orbit Stabilization*

International Loran Association 2006 Convention and Technical Symposium-ILA-35  
*Genesis of Loran Augmented Satellite Navigation, ILA Journal 2006*