

ALAN C. TRIBBLE, PH.D.

Space Environment Effects (SEE) Expertise for the Aerospace Industry

Core Competencies

Experienced in all aspects of Space Environment Effects (SEE) analysis, including:

Contamination Control

- Lead contamination control engineer for several remote sensing spacecraft
- Developed contamination budget and contamination control plans
- Author of the text *Fundamentals of Contamination Control*, published by the Society for Photo-Optical Instrumentation Engineers (SPIE)

Neutral Environment Effects

- Estimates of interactions between spacecraft and the neutral atmosphere including
- Aerodynamic drag, sputtering, spacecraft glow, and Atomic Oxygen erosion,

Spacecraft Charging

- Estimates of spacecraft charging for programs as diverse as the International Space Station (ISS) in Low Earth Orbit, and Geosynchronous spacecraft.
- Developed spacecraft charging control plans and estimated possibility of arc discharging and effects on sensors

Radiation Effects

- Familiar with all aspects of radiation effects on electronics and crew
- Estimated total dose effects such as solar array power loss, and single event effects such as upset, latchup, or burnout
- Instructor for two day professional development course on *Spacecraft Radiation Protection*

Micrometeoroid / Orbital Debris (MMOD)

- Risk assessments due to hypervelocity impact

SEE Expertise

Author

- Author of four (4) books and chapters in six (6) additional books, including the text *The Space Environment – Implications for Spacecraft Design*, which is used at several colleges and universities
- Associate Editor of the AIAA Journal of Spacecraft and Rockets

Professional Development Instructor

- Professional Development course instructor for
 - American Institute of Aeronautics and Astronautics (AIAA)
 - Applied Technology Institute (ATI)
 - Institute of Electrical and Electronics Engineers (IEEE)
 - Society of Photo-Optical Instrumentation Engineers (SPIE)
- On site courses offered at five NASA centers and two Canadian Space Agency centers
- Significant experience briefing senior military and civilian leaders

University Level Instructor

A part-time instructor of science or engineering for the following colleges and universities:

University of Southern California (USC); California State University – Long Beach (CSULB); Woodbury University, Coe College, Cornell College; and University of Iowa

Winner of the
2008 AIAA
James Van Allen
Space Environments
Award
“For outstanding
leadership ...”

Active US Government
Security Clearance

Education

Ph.D., Physics, University of Iowa

B.S., Physics, University of Arkansas

Significant Accomplishments

Principal Program Manager

- Product line manager for the NavStorm+ GPS receiver. Responsible for Profit & Loss (P&L), and ensuring factory output to multiple customers.

Principal Marketing Manager

- Responsible for tracking over \$100M in orders over the period of the Strategic Financial Plan (SFP)
- Subject Matter Expert (SME) for all Rockwell Collins, Government Systems, Communication and Navigation products
- Sales & marketing presentations to senior leaders in the following countries: India, Indonesia, Korea, Malaysia, Singapore, Thailand, Taiwan, and Vietnam.
- Show lead for conferences conducted in India and Singapore.

Technical Project Manager

- Led integration of communications gear with prime contractor equipment, and conducted on site demonstrations of capability, in the following countries: India, Israel, Italy, and the United States
- Guided the technical team in developing all project artifacts, including: Acceptance Test Plan (ATP); Design Documentation; Installation Drawings; Interface Control Drawing (ICD); Master Program Schedule (MPS); Requirements Specifications; ...

Senior Engineering Manager

- Formed and developed a team of one dozen systems engineers responsible for executing international Software Defined Radio (SDR) contracts.
- Oversaw development of all systems engineering artifacts, and delivery of first SDR products to an international customer (Sweden).
- Participated in initial discussions / negotiations for a Cooperative Agreement (CoA) between Rockwell Collins and Thales Communications, France, to launch the FlexNet™ family of SDRs and Mobile ad hoc Networking (MANET) waveforms.

Technical Expertise in the Following Areas:

- Communications & Navigation
 - Responsible for training sales team members on basic principles and the Rockwell Collins value proposition.
- Network Centric Operations (NCO)
 - Instructor for professional development courses on NCO and Software Defined Radios (SDRs).
- Software Safety
 - Instructor for professional development courses on system safety for software intensive systems. Familiar with safety standards such as ARP 4754, ARP 4761, DO-178B, DO-264, ...
- Space Environment Effects
 - Author of first textbook on SEE, and winner of the 2008 AIAA James Van Allen award for leadership in the field. Conducted SEE analysis for dozens of spacecraft design teams.

For additional Information

- A full list of publications and courses is available at - www.alantribble.com