

IDEA Incorporated, Aspen, CO (May 1994 to Present)

Neal Beidleman is the owner and founder of IDEA which has worked for both large and small companies as well as individual entrepreneurs in all engineering design and support capacities. IDEA has a far-reaching network of engineering and design professionals that it contracts to for additional help and expertise as required by the work to be performed. IDEA provides a wide range of services and products in both the aerospace industry and in commercial product design and development.

In aerospace, IDEA has performed general aviation avionics mechanical design, satellite systems engineering, spacecraft power systems analysis and design, mechanism design and thermal analysis.

IDEA also designs, develops and oversees manufacturing of many consumer products. IDEA was the principal designer of the award winning *Avalung* (an under-snow breathing device for Black Diamond). Neal is a member of the Gore (Gore-Tex) Mountaineering Council assisting with product development.

A partial list of clients includes: Avidyne, Inc., avionics Inertial Reference Unit and aviation Primary Flight Display mechanical design; FiberForge, graphite composite technology development; Radiometrics, Inc., scientific instrument design; Broad Reach, Inc., spacecraft electronics packaging; Composite Technologies Development, space flight hardware design; IdeaLabs Inc., Lunar Rover Mission, mechanical landing system design; Black Diamond Equipment, product design; Burton Snowboards, Backcountry Access, Inc.

Recent Projects include:

- Smart servo motor design and build for commercial aircraft autopilot systems
- Graphite Composite deployable solar array structure design and flight hardware
- Graphite composite tape lay up head design for production application
- Mechanical Aircraft Simulator to check out avionics design and software
- COSMIC Spacecraft Payload Flight Computer and GPS Synthesizer Electronics box design, analysis and testing
- 2-axis, non-magnetic gimbal system for Avionics Magnetometer testing
- Composite tape hinges designed for spacecraft deployable hinge systems
- Test fixturing for composite tape hinges
- Primary Flight Displays for small to medium aircraft
- Inertial Reference Units for small aircraft
- Ground based scientific weather instrument – redesign of all hardware on \$350k unit
- Electronics packaging of numerous aerospace and terrestrial instruments and electronics
- Patented swimming, diving mask and snorkel system
- Several SBIR's (Small Business Initiatives): Concept design and proposal writing for other companies

Previous Experience

Orbital Sciences Corporation, Boulder, CO (Oct 1989 to Mar 94; Contractor Mar 94 to Present)

Senior Mechanical Engineer - Subsystem Manager for the APEX and SeaStar Spacecraft Electrical Power Subsystems, responsible for \$3M and \$4M, respectively, in labor, subcontracts and testing of state-of-the-art spacecraft power system including electronics, software development, solar arrays, deployment mechanisms and power analysis. APEX launched successfully Aug 3, 1994. SeaStar launched successfully 8/97.

Interferometrics, Inc., Boulder, CO (Nov 1988 to Sept 1989)

Acting Division Vice President - Deputy Program Manager for American Rocket Company (AMROC) avionics contract which provided the guidance and control, data acquisition and telemetry, mechanical design and fabrication of rocket avionics, systems test and integration and avionics launch operations management. Other responsibilities included contract administration, personnel hiring, scheduling and division budget determination.

Ball Aerospace Corporation, Boulder, CO (Mar 1984 to Nov 1988)

Mechanical Design Engineer/Thermal Design Engineer - Experience included complex curvature graphite-composite molding and manufacture, materials and processing, materials bonding and many 2D and 3D computer aided design tools.

McDonnell Douglas Astronautics Company, Huntington Beach, CA (Apr 1982 to Mar 1984)

Thermal Analyst - System level thermodynamic design and including radiation interchange, electronic component analysis, conduction and convection heat transfer, orbital heat flux generation for satellites in shuttle bay and on orbit.

EDUCATION

BS, Mechanical Engineering, 1981, University of Colorado

MISCELLANEOUS

Avalung awarded innovative product of the year from both OR and the SIA, 1998

Awarded US Patent for the design of unique multiple spacecraft deployment system, 1992

Authored paper given at small satellite conference, Utah, August 1990.

Patent's pending on several other designs and products.