

Mark Christopher Ventura

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Education

Bachelor's of Science Mechanical Engineering

University of Pennsylvania, Philadelphia PA, 1987
Studied abroad at the Universite de Technologie de Compiegne (FRANCE)
Honors Cum Laude

Master's of Science in Engineering

Purdue University, W. Lafayette IN, 1992
Honors Tau Beta Pi

Professional

Licensed Professional Engineer, Mechanical Engineering, California

Certificate No. M 30698, expiration 6/30/2008

Experience

General Kinetics Inc., Lake Forest, CA – CEO and President
1997 to present

- Original founder of company
- Responsible for overall business management of a multi-million dollar aerospace and defense specialty product development company.
- Oversee and support design, costing, quality, manufacturing control, and testing of gas generators, rocket engines, and combustion devices.
- Created all aspects of the business operation: Finance, Human Resources, Material Control, Procurement, Engineering, Manufacturing, Product Development, Legal, Contracts, Marketing/Sales, Configuration Management, Quality Control, Customer Support, etc...
- Grew the company from zero revenues to a multi-million dollar a year profitable company with associated issues with cash flow, staffing, capital, vendor development, safety, etc...
- Effectively competed with companies several orders of magnitude larger and was able to win contracts on price, schedule, and performance.

- Skilled in all aspects regarding the creation of aerospace and defense products from the initial idea conception through production and deployed support:
 - Pricing
 - Proposal writing
 - Business development
 - Contracts: Negotiations, FAR/DFAR, UCC, writing T/C, SoW
 - Accounting, Commercial and Government audited, Credit Lines, Financing
 - Material, Buying, Receiving, Shipping, Traceability, Leases, Government material
 - Facilities: Leases, modifications, temporary services, temporary structures
 - Human Resources, Finding, Hiring, Training, Supporting, Lay-Offs
 - Engineering: Design, Analysis, Test, Specifications, Configuration Management, Data Control
 - Manufacturing: Travelers, Tooling, Floor Planning, Labor Analysis, Scheduling, Consumables, Equipment (leasing, procuring), Optimization
 - Development, Acceptance, and Qualification Testing
 - Life cycle testing, proof, leak, vibration, analysis
- Significant accomplishments
 - Created new a profitable rocket engine company
 - Competed and beat Rocketdyne, Aerojet, ARC, and various others
 - Sole source supplier for developed flight qualified hardware integral to major advanced weapon systems

Cryoport Systems., Los Angeles, CA – Operations Manager (Consultant)
2000-2002

- Hired to help company start production of it's first product, a reusable cryogenic shipping container
- Responsible for overall operations of the companies production facilities and supported product development
- Created the company's manufacturing procedures, tooling, floor planning, configuration management, quality control, fabrication and assembly procedures, material control processes, trained staff, and oversaw the fabrication of thousands of cryogenic vessels. Production floor was approximately 20,000 square feet with various stations including: welding, cryogenic testing, helium mass spectrometer leak testing, turbo-molecular pump vacuum system, epoxy bonding and curing, machining, cleaning, manual assembly, orbital wrapping (super insulation), and others.
- Identified production issues and implemented corrective actions.
- Optimized product cost through labor analysis, material flow control, tooling changes, and trade studies for material sources and design improvements.
- Significant accomplishments
 - Put company into production of first product
 - Developed redundant quality control system
 - Identified major manufacturing issues and found solutions
 - Procured magneformer which is the current basis of the company's product

*Rockwell International, Downey CA
1987-1996*

- *Commercial Satellite Systems Manager*
 - Worked on a select team trying to develop a commercial version of the GPS satellite. Created an initial satellite propulsion system design configuration based on GPS which met commercial satellite requirements.
- *Boeing Evolved Expendable Launch Vehicle: Upper stage Chief Engineer*
 - Provided subcontract engineering design to Boeing, Seattle for the EELV liquid hydrogen/liquid oxygen upper-stage. Managed the Rockwell engineering design team to create a structural and propulsion system design to meet the Boeing vehicle requirements.
- *X-34 First Stage Propulsion Manager*
 - Lead the Rockwell engineering team for the first stage propulsion system. Started with the initial business concept and participated in the market analysis and proposal writing and winning the competition and executing the contract.
- *Space Shuttle Main Propulsion System Engineer*
 - Operations and launch support of the Space Shuttle. Failure analysis, vehicle testing, and propulsion/fluid system analysis, particularly with cryogenics and high pressure helium.
- Miscellaneous project support for: Mars Global Surveyor, Mars Lander, and Small Commercial Launch Vehicles

*Purdue University, W. Lafayette IN - Hydrogen Peroxide Hybrid Rocket Engine Research
1990 to 1992*

Lead a research team in combustion experiments with catalyst beds and hybrid rockets. Designed, built, and operated a rocket propulsion system.

Technical Skills

- Nicolet data acquisition and control systems
- Instrumentation: Strain gage pressure gages, thermocouples, load cells, rotary flow meters, pressure gauges, calipers, scales, balances, calibrated pins, micrometers, amplifiers (5B series), back planes
- Metabyte data acquisitions and control PC interface cards
- Webmaster for two websites
 - <http://www.gkllc.com>
 - <http://www.waveequation.com>
- Familiar with HTML, website editing with Web Editor, embedding php scripts for interactive databases, Search Engine Optimization (SEO) by using keyword analysis and placement into HTML, creating site appropriate keyword rich content, and finding links
- Cryogenics
- Rocket propellant tank thermodynamics: Helium, nitrous oxide, liquid oxygen, liquid hydrogen
- Chemicals handled: Rocket propellant grade hydrogen peroxide (50%, 70%, 85%, 90%, and 98%), Monomethyl hydrazine, MON-3 (mixed oxides of nitrogen), liquid oxygen, liquid methane, propane, gaseous methane, kerosene, RP-1, JP-10, gaseous helium, gaseous nitrogen, liquid nitrogen, air/hydrogen blends, nitrous oxide, and others

- High vacuum systems
- Helium leak detection
- Cryogenic dewar thermal systems
- Optimization of engineering problems. Developed software upper-stage and spacecraft optimizing design tool.

Software, Operating Systems and Programming Languages

Microsoft Office Suite, Word, Excel, Powerpoint, Outlook
 Microsoft Project
 Visio (engineering graphics)
 QuickBooks (Accounting)
 Web Editor (HTML)
 CEC85 (thermochemical)
 FORTRAN (various versions), HTML, Visual Basic
 Microsoft XP and prior versions, UNIX

Patents and Inventions

- Vapor Plug for Cryogenic Storage Vessels, 6,539,726, 4/1/2003
- Hybrid Motor System with a Consumable Catalytic Bed a Composition of the Catalytic Bed, and a Method of Using, 5,727,368, 3/17/1998
- Dry Ice Making Machine, patent pending
- Surfboard Lock, patent pending
- Low Cost Passive Solar Still, invention

Publications

Ventura, Mark, “Novel Concepts for an Advanced Non-Toxic Gas Generator,” AIAA-2006-4547, 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Sacramento, CA July 2006

Ventura, Mark, “The Lowest Cost Rocket Propulsion System,” AIAA-2006-4782, 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Sacramento, CA July 2006

Ventura, Mark C., “Long Term Storability of Hydrogen Peroxide,” AIAA 2005-4551, 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 10-13, 2005, Tucson, Arizona

Ventura, Mark C., Durant, Dick, “Field Handling of Hydrogen Peroxide,” AIAA 2004-4164, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004, Fort Lauderdale, Florida

Ventura, Mark, Wernimont, E., “Review of Hydrogen Peroxide Material Safety Data Sheets,” AIAA-2002-3850, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2002

Ventura, Mark, Wernimont, E., “Catalyst Bed Testing for Development of a 98% Hydrogen Peroxide Procurement Specification,” AIAA-2002-3852, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2002

Ventura, Mark, Wernimont, E., “Advancements in High Concentration Hydrogen Peroxide Catalyst Beds,” AIAA 2001-3250, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2001

Ventura, Mark, Wernimont, E., “History of the Reaction Motors Super Performance 90% H₂O₂/Kerosene LR-40 Rocket Engine,” AIAA 2001-3838, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2001

Wernimont, E., Ventura, Mark, “Review of Hydrogen Peroxide Specification MIL-P-16005E,” AIAA-2001-3251, AIAA 2001-3250, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2001

Ventura, Mark, Yuan, Steve, “Commercial Production and Use of Hydrogen Peroxide”, AIAA 2000-3556, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 2000

Ventura, Mark, Garboden, George, “A Brief History of Concentrated Hydrogen Peroxide Uses, AIAA-1999-2739, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 1999

Ventura, Mark, Mullens, Pat, “The Use of Hydrogen Peroxide for Propulsion and Power,” AIAA-1999-2880, AIAA- 1999-2739, AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 1999

Interests and Personal

Surfing – I surf for relaxation. I am making various new products and inventions to improve the surfing experience.

Cooking – I am a highly skilled cook and received training at the Palladium restaurant in Philadelphia, PA. At the time I was working at the Palladium it was rated the second best restaurant in the city after Bookbinder’s. I developed excellent skills in baking with whole foods, the classic French style of preparing sauces, and numerous other food preparation skills including ice cream, pasta (making pasta, not cooking it), stocks (beef, chicken, shrimp), cultured foods, and others.

Autism – My eldest child, Chris, has autism and I have become experienced in many new areas related to autism treatment including organic foods and cooking with whole foods, psycho-education, Applied Behavior Analysis, Discrete Trial Teaching, Picture Exchange Communication System, Verbal Behavior, special education law, and bio-medical methods for treating neurological, gastro-intestinal, and immune system disorders including gluten-casein-soy free diets, heavy metal chelation, Hyperbaric Oxygen Therapy, Biofeedback, nutritional supplementation, etc...