Bio Summary - Douglas J. Malewicki, President/Chief Scientist, AeroVisions, Inc.

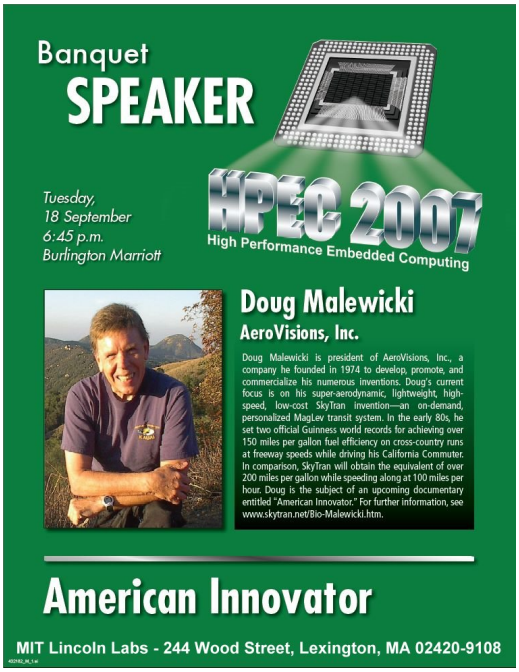
Contact information:
14962 Merced Circle
Irvine, CA 92604
Phone: 949-559-7113

Skype name: dougmalewicki

Email: D.Malewicki@SkyTran.net

Transportation Web Sites:
www.SkyTran.net
www.UniModal.com

Invention Web Site:
www.CanoSOARus.com



Doug Malewicki is President and Chief Scientist for AeroVisions Inc., a company he founded in 1974 and incorporated in 1980 for the purpose of developing, promoting and commercializing his numerous inventions. His current main focus is his super-aerodynamic, lightweight, high speed, low cost **SkyTran** invention – an on-demand, personalized MagLev transit system. In the early 80's he set two official Guinness World records for achieving over 150 miles per gallon fuel efficiency on cross-country runs at freeway speeds driving his **CALIFORNIA COMMUTER**. SkyTran will obtain over 200 miles per gallon equivalent while speeding along at 100 miles per hour!

He is the subject of an upcoming documentary by 3 Launch Media. See trailer at: **www.3launch.com** A **BigThink.com** interview with Doug on ***SkyTran*** as part of their *FUTURE IN MOTION* series is posted at: **www.BigThink.com/dougmalewicki**

Doug was also a judge on The Learning Channel's "Junkyard Wars" TV show.

In addition to being a prolific inventor, Mr. Malewicki is a specialist in the areas of: low-cost design innovation; low speed aerodynamics; engineering structural analysis; automation consulting; and vehicle performance analysis. He has a dozen patents in the fields of aviation, robots, medical products, toys, and transportation.

Mr. Malewicki has authored numerous technical papers, several books and a cover feature article for Scientific American magazine. He is a visionary who enjoys creating "impossible" machines. Check out Doug's **www.CanoSOARus.com** web site to learn about the RB-2000 personal rocket belt; the 248 mph " White Lightning" - official world's fastest electric car; the "F-18 Jet Bike" - an afterburning jet powered dragster motorcycle; and his steam powered X-1 SkyCycle canyon jumping rocket built for Evel Knievel.

Mr. Malewicki is also a skilled craftsman who understands machining, welding, advanced composites manufacturing, plastic injection molding, etc. He understands what can and can't be built and the economics involved in applying these technologies.

EDUCATION

BS Aeronautical & Astronautical Engineering, U. of Illinois, high honors
MS Aeronautical & Astronautical Engineering, Stanford University

Engineering Design & Analysis Background

Apollo-Saturn V – Man to the Moon Program, Senior Structural Loads Analyst, North American Aviation

Lunar module/Service module – Structural dynamic response analysis showed that the units docking ring structure had to be strengthened to withstand a possible hard-over thruster engine failure.

Launch Escape Abort System – Dynamic analysis and software for pyrotechnic event that deployed stabilizing canards.

Cessna Military-Twin Division, Senior Flight Test Engineer

Cessna T310Q twin turboprop – Complete FAA certification for a payload increase required flight testing to establish take-off, landing, stall, single engine climb and autopilot failure performance.

Cessna Citation Business Jet - Analysis of performance and flight characteristic derivatives for Cessna's first business jet. Was 10th person ever to fly in N500CC prototype.

McDonnell-Douglas, Flutter Analyst

DC8-61 Passenger Jet - Development of Fortran software to establish critical flutter speeds for structural control components.

Northrop Aircraft Company, Senior Technical Specialist, Advanced Composites Manufacturing

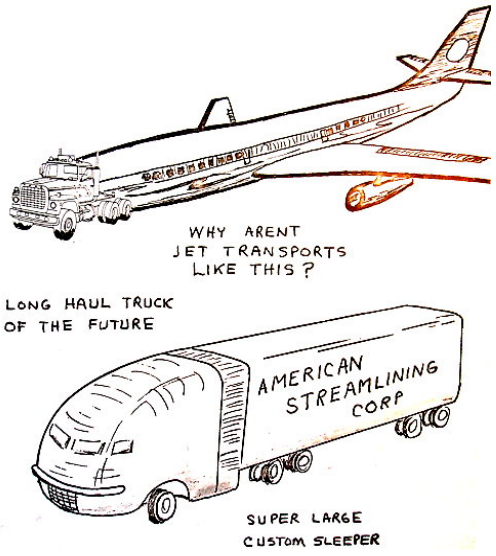
B-2 Stealth Bomber – Codeveloped radar adsorbent composite materials coatings and built automated processing plant for applying same. Performed research to form and weld thermoplastic graphite composite parts.

DARPA Contractor

Malewicki's AeroVisions, Inc. was selected as a DARPA contractor to invent better morphing wing UAV aircraft (Unclassified). 2,000 pound weaponized UAV's like the Predator - but doing a lot more than simple retractable flaps and leading edge slats to enable them to loiter efficiently while doing surveillance over a location for 10 hours. The principle idea was that after sensing & confirming the bad guys (while loitering efficiently) to then instantly drastically change aerodynamic configuration at will and then dash down at Mach 0.9 while pulling 4 to 5 g maneuvers. This would save calling in the F-16's in and waiting 20 minutes for them to arrive. Doug was the Plenary Speaker for the July 2003 Morphing Aircraft Structures Conference in San Diego.

Truck Streamlining

Back in 1976 Malewicki realized the aerodynamic inefficiencies of long haul semi-trucks. Aerovisions, Inc. teamed with Cerveny Enterprises. We were initially financed by Wally Thor's Truckmaster School of Trucking. The THOR BULLET was our first full-sized fiberglass prototype cabin fairing. After successful installation & MPG testing on one of his big rigs, Wally changed his mind & decided he had to focus all his money on promoting his school This same team many years later came together once again to build & operate Robosaurus. We put together a great proposal (back in the days before personal computers, word processing and desktop publication existed). Additional aerodynamic fuel saving truck products are discussed in that proposal.



Recent Speaking Engagements

International

Dubai, United Arab Emirates - April 2010

Malewicki & Dr. Greg Smedley CEO of One Cycle Control, Inc were co-keynote speakers at the Marcus-Evans produced Middle East and Africa Infrastructure and Land Development Summit. Their first co-presentation was on SkyTran entitled "*SkyTran - Creating the Physical Internet Using Silicon Based Transportation"* and the second on the application of SkyTran technology to Wind Turbines entitled "*Wind Turbines Enhanced with SkyTran Technology*".
(Power Points at: **www.skytran.net/20Presentations/Dubai.htm)**

Macau, China - July 2011

Malewicki was both the opening keynote speaker and the closing keynote speaker at the Marcus-Evans produced Asian Infrastructure and Land Development Summit. Doug's first keynote presentation was again on SkyTran and the second on the application of SkyTran technology to Wind Turbines.
(Power Points at: **www.skytran.net/20Presentations/Macau.htm)**

California

Chinese Consulate in Los Angeles - February 2011

The Chinese Scholars Association of Southern California celebrated the Chinese New Year with dinner & technical presentations shared with Scholars in Shanghai who watched via video Skype conference technology. Dr. Greg Smedley of One-Cycle-Control, Inc. and Doug Malewicki were co-speakers on SkyTran technology.

Chinese Engineers CESASC in San Gabriel - April 2011

The Chinese-American Engineers and Scientists Association of Southern California (CESASC) is one of the largest and most established Chinese-American professional organizations in Southern California. It was founded in 1962 & is dedicated to promoting the interests, aspirations and professional excellence of Chinese-American Engineers and Scientists. Dr. Greg Smedley of One-Cycle-Control, Inc. and Doug Malewicki were in the Environment and Transportation segment and spoke on *"SkyTran: Silicon Based Transportation"*.

Irvine Valley College - Reactor Cafe - September 2011

The inaugural Reactor Café Speaker Series entitled **"Super Cars, Super Trains & Super Planes"** was held at the Irvine Valley College Performing Arts Center. Reactor Café is a entrepreneurial networking event promoting STEM (Science, Technology, Engineering & Math) for High School students in Orange County. Malewicki's Keynote talk was about SkyTran - as the SUPER TRAIN of the future.

"Qiu-Shi" Symposium - San Diego - October 2011

This is the annual Science & Art Symposium held by the National Chekiang (Zhejiang) University Alumni Association of North America. Again Dr. Greg Smedley of One-Cycle-Control, Inc. and Doug Malewicki teamed up to present an entertaining Power Point presentation on SkyTran.

Technical Articles & Books by Malewicki


POINT OF VIEW

Silicon Is About to Change the World—Again!

By DOUGLAS J. MALEWICKI
UniModal Systems, LLC, Irvine, CA USA

In 1999, this PROCEEDINGS invited me to speculate about the future of transportation [1]. That paper described a leisurely adoption of SkyTran (Fig. 1) over the next half-century. However, today's energy and global warming concerns suggest a faster deployment pace should be considered by the federal government.

I. INTRODUCTION

Electronics has changed the world, but only half-way. Our communications and information technology (IT) are twenty-first century, but our transportation and energy technology (ET) are not. We use Twitter while waiting for the bus, track packages or monitor the electrical grid online, but the physical realities of surface transportation and power electronics have not changed all that much in a hundred years.

This is about to change. What tiny signal transistors did for IT, big power transistors will do for ET. Thanks to high-power transistors, most mechanical prime movers will ultimately be replaced with more reliable and more efficient electrical prime movers.

Just as the automobile replaced the horse in one generation and the Internet quickly replaced snail-mail letters, newspapers, faxes, and libraries in one generation, power electronics will replace mechanical transmissions in your generation. The tools are available now. The key components are the high-power transistor—the muscle—and real-time controls—the brains: reliable, nimble controls that respond instantly to a dynamically changing environment.

This paper describes several examples of benefits derived from replacing mechanics with power electronics, including SkyTran—a silicon-based transportation system. However, the new power electronics has much wider application than SkyTran alone. Mating diverse distributed power sources to the electric grid is challenging, but SkyTran's power electronics partner, One-Cycle Control, Inc., a spinoff of California Institute of Technology (Caltech) and the University of California, Irvine, has shown how agile power control can help.[1] Interestingly, One-Cycle Control accomplishes this with *no* digital signal processing or microprocessor software. (It is hard to beat a zero lines-of-code program for software development time and the resulting low bug count.)

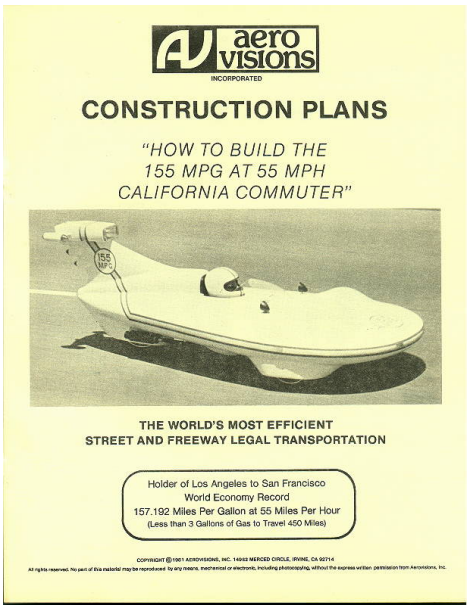
II. EXCITING APPLICATIONS FOR HIGH-POWER TRANSISTORS

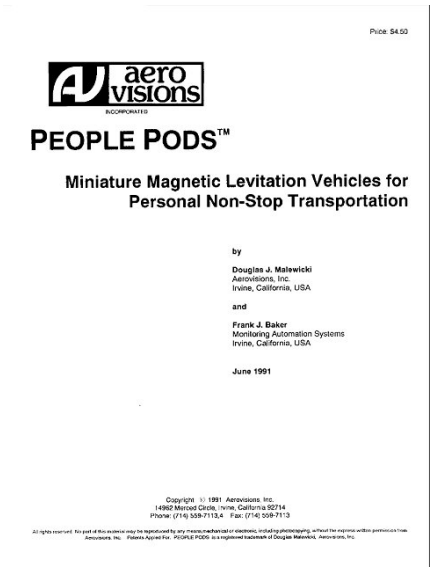
High-power transistors (e.g., insulated gate bipolar transistors) and agile power-conversion technology have profound cascading implications in many important areas besides our high-speed silicon-based SkyTran personal/mass transportation system. The generated power that comes from solar, wind, run-of-river micro-hydropower, geothermal, bio mass, etc., is not produced in any form residential or commercial industry customers can use. It must be conditioned to the proper phase, voltage, and frequency. Advanced power conversion can significantly reduce the need for giant expensive centralized utility complexes to convert power by enabling cost-effective local

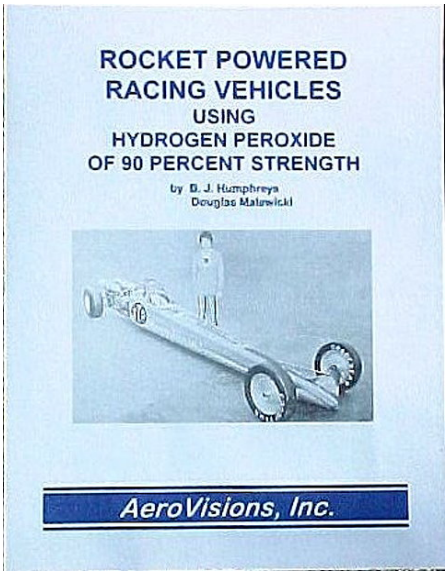
[1]One-Cycle Control was founded by married Caltech Ph.D.s, Greg and Keyse Smedley, who incidentally has more than 100 IEEE papers to her credit.

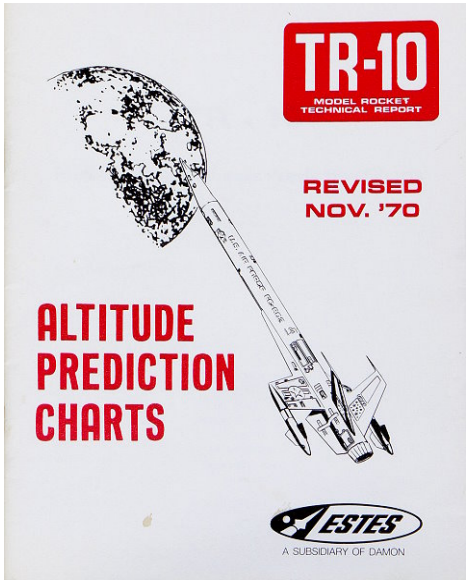
Digital Object Identifier: 10.1109/JPROC.2009.2030226

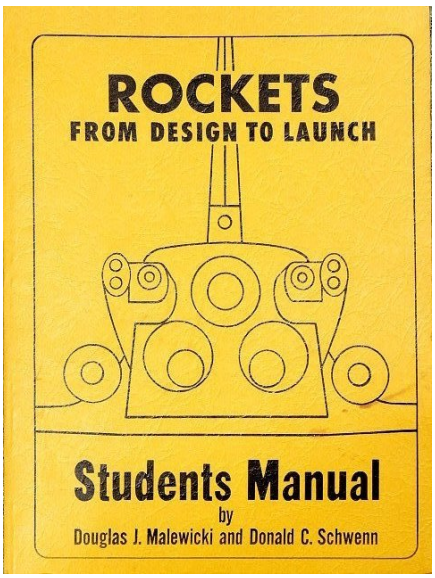
0018-9219/$26.00 ©2009 IEEE



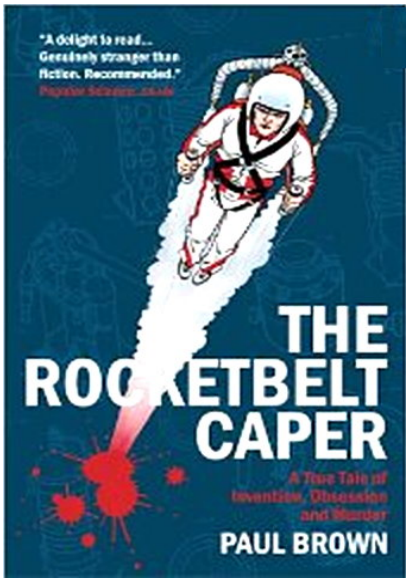


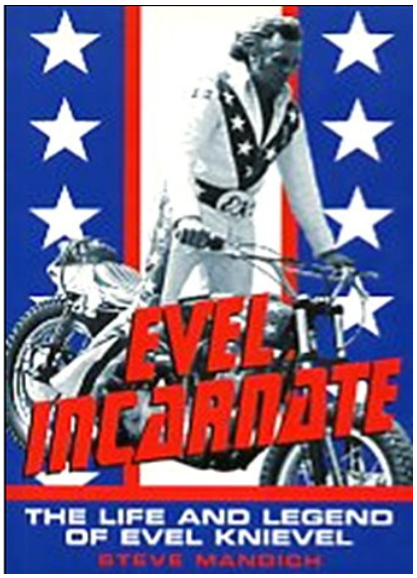


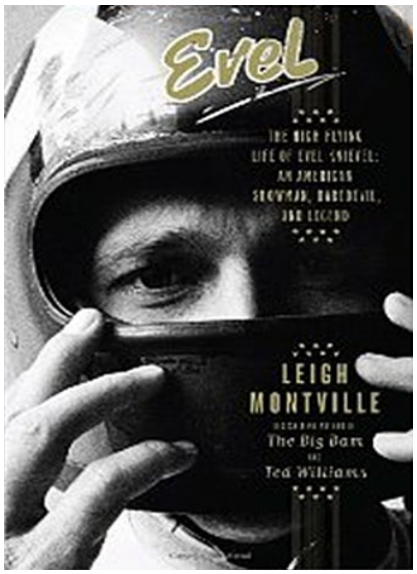




Books where Malewicki is quoted







Some of Malewicki's Inventions & Technical Projects

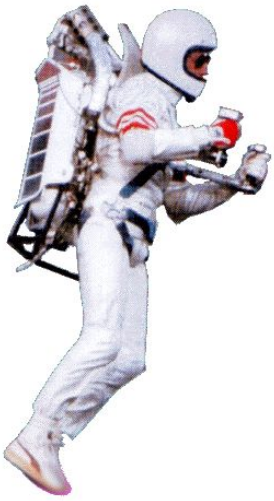
Inventor of and holder of two USA Patents for **Robosaurus**. Founded Monster Robots, Inc. Involved in finding all investors and product sponsors. Complete structural design (loads determinations, weights and stress analysis). All vendor sourcing. Developed innovative wearable control system enabling a single pilot to simultaneously control 18 proportional hydraulic motions. Electronic, hydraulic and control system packaging.

Much of the Robosaurus structural design involved tradeoffs to enable transformation to a legal trailer for hauling the 58,000 pound, fire-breathing, car crushing electrohydromechanical beast from show to show. Robosaurus meets highway size and weight requirements for all 50 States.
Robosaurus was featured in the 2002. feature movie, "Waking up in Reno", a Miramax Comedy with Billy Bob Thornton, Charlize Theron, Patrick Swayze & Natasha Richardson. Two red neck couples from Arkansas team up to hit the road to see Robosaurus (Doug Malewicki's patented invention) perform at a monster truck show in Reno, Nevada. Info at: **www.canosoarus.com ;** Movie Trailer at: **http://us.imdb.com/Trailers?0219400**

During the fall of 2006, Robosaurus performed 60 Fright Night shows at Universal Studios, Florida.

In late 2006 Robosaurus was featured in a clever Toyota Tacoma pickup truck TV commercial that ran all football season long. Toyota TV ad: **http://ettf.net/archives/4751**

After 18 years of operation, the Monster Robots, Inc. team auctioned Robosaurus off for $475,000 at the famed Barrett-Jackson car collector auction in January 2008.



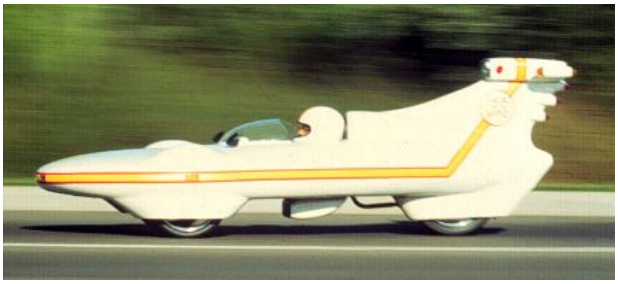
RB 2000 Personal Rocket Belt

(90% strength Hydrogen Peroxide Monopropellant powered)

Malewicki worked as a consultant to American Rocket Belt Inc. of Houston, TX where he did the catalyst pack design; internal flow analysis; non-linear flight duration analysis; nozzle design and sizing to obtain desired thrust levels. Doug utilized modern lightweight materials to give this JetBelt a 36% flight duration increase (30 seconds VS the 22 second capability of the original 1960's Bell Aerospace Belts).

Malewicki gained a lot of insight into **assembly line production and the cost benefits of automation** while working as Manager of Advanced R&D at L. M. Cox Manufacturing (1970-1975), as Chief Designer at Chad Industries (1978 -1979), as VP of Engineering at Industrial Support Solutions (1993-1995).

He gained his insight and understanding of **low speed aerodynamics and the importance of streamlining** through his engineering degree courses; working at the aerospace companies (especially while working as a Senior Flight Test Engineer at Cessna); through his involvement with streamlined human powered vehicles (the IHPVA & the subject of his Scientific American cover feature article December 1983); and from the design, building and driving his **California Commuter** into the Guinness Book of World Records.
Gasoline Record - - LA to SF 157.192 MPG, November 1980.
Diesel record - - LA to Las Vegas 156.53 MPG ,November 1981.



Other diversified involvements

(More info at Doug's invention website: www.canoSOARus.com)

- The Delta two man Submarine rated to 1,200 ft depths.
- The 152.2 MPH Bonneville Salt Flats world record pedal bicycle.
- The X-1 SkyCycle – steam powered rocket designed for Evel Knievel's canyon jump attempt.
- The patented KiteCycle - world record distance jumping motorcycle.
- The JetBike – turbine thrust powered dragster motorcycle.
- The White Lightning – World record Bonneville Salt Flats electric car. 245.524 MPH two way average (1999).
- Malewicki was named the Orange County Register's *"Sportsman of the Year"* on Jan 2, 2012 Story & photos at: www.ocregister.com/articles/malewicki-333709-running-race.html