

REPORT FROM THE FRONT

Tracking the News of the Coming Energy Revolution



A Win for the Little Guy Over Detroit's Big Boys

BY
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The *Breakthrough Power* book tour last month of a few towns—Oregon and northern California—brought us in touch with university students and other savvy people. On the last night of the tour my coauthor Joel Carbon and I and New Energy Congress president Sterling Allan, along with Raphael Morgado gave a presentation to some students at San Jose State University. Morgado demonstrated his MYT (Massive Yet Tiny) Engine running on compressed air.

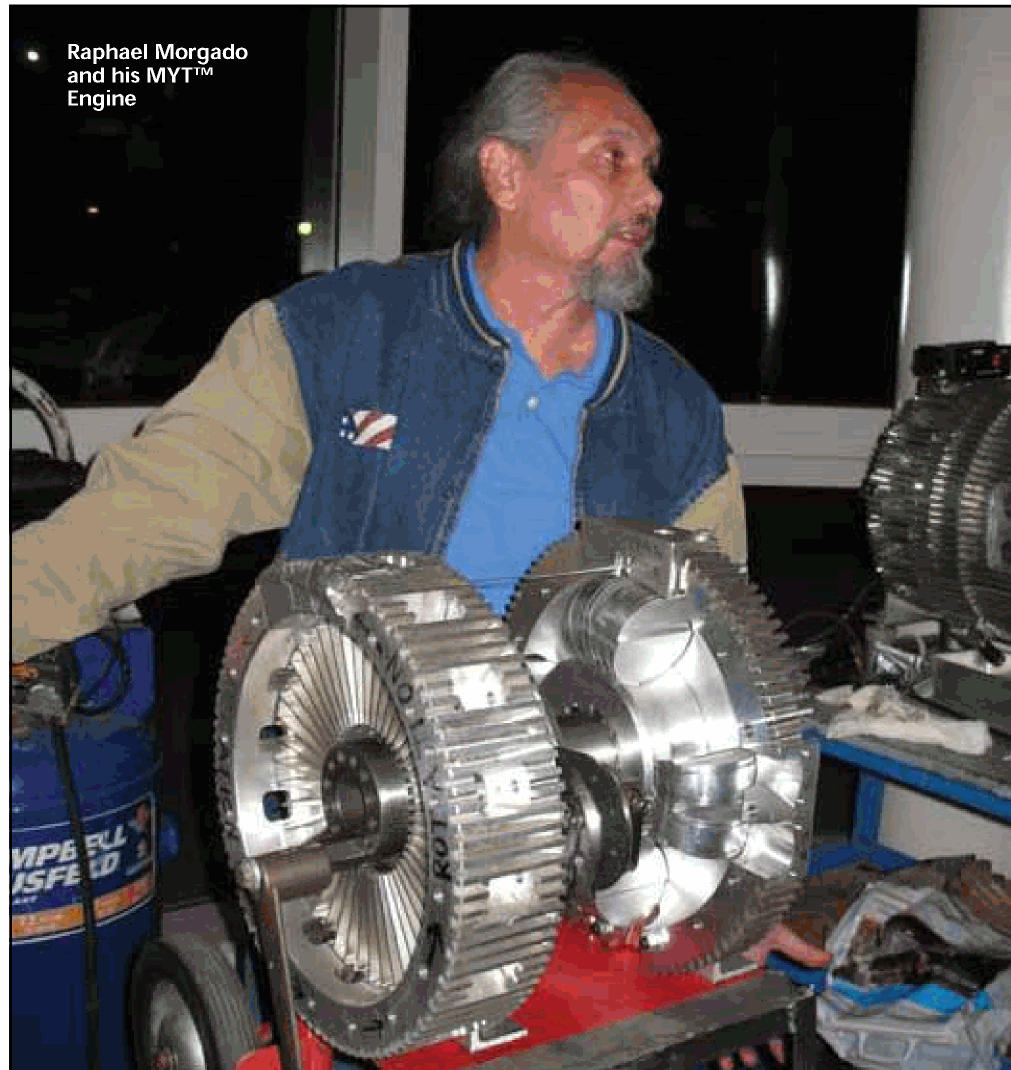
The MYT™ Engine is not “free energy,” but its forty times higher power-to-weight ratio and brilliant simplicity of design are paradigm-changing. Airplanes, big ships, trucks, SUVs, passenger cars, pumps, and even home power generators could have all the power or torque they need, coming out of a dramatically smaller internal combustion engine with very little pollution and significant savings. It's a transition technology, needed to seriously wean our society off of polluting fuels. And with only fifteen parts, it appears easy to manufacture.

Morgado's engine brought him first prize in a 2005 Emhart—NASA “Create the Future” design contest. The competition attracted more than 1,000 entries from 31 countries. His winning prototype exerts 850 cubic inches of displacement—converting as much power as the engine for an 18-wheeler truck—even though the MYT™ Engine is only 14 inches by 14 inches. Its secret is frequent firing—16 times on one rotation—making the tiny engine equivalent to a 32-cylinder, four-stroke engine.

When Morgado showed up in New York on the all-expenses-paid trip to the awards dinner some months later, two associates accompanied him. The greeter at the elegant Water Club asked, “Which group are you?” They told him, but the greeter couldn't believe it. “Where's your team?”

Morgado's partner Dr. Jin Kim gestured toward Raphael. “He's the inventor.”

“But where's your team?” The greeter still had doubts if these three belonged at the awards banquet or if they were making fun of him. How could anyone develop anything as complex as a totally new internal combustion engine design—not just an improvement—without a huge auto company backing them? No one individual could be an expert on crankshafts as well as expert on valves and all the other engine aspects. He pointed to various tables in the room. “There's the Boeing team, forty of them.



Raphael Morgado and his MYT™ Engine

There's the Lockheed team, fifty on that project...”

Eventually the doubter realized that one multi-talented person had indeed accomplished more than what corporations hire large groups of various specialists, and spend millions of dollars, to do.

This week I interviewed the 57-year-old innovator. His life story and advice for fellow inventors contain wisdom for the rest of us.

As a young man, Raphael Morgado wanted to become a rock star, race car driver, or a boxer—but definitely *not* an inventor. He had watched his father develop one invention after another but receive little more than a corporate pat on the head from the company that employed him and profited from the inventions. Raphael researched biographies of many inventors including Nikola Tesla and decided that dying penniless

was not his ambition.

He pursued his ambitions—became lead guitarist and singer in a rock band in high school, was a boxer, and a race car driver. Somewhere along the way, however, Raphael Morgado's destiny caught up with him. Looking back at his early years, he realized that many influences and experiences steered him toward becoming a full-time inventor who has the ability to benefit humankind.

Raphael was born in Hilo, Hawaii. His parents had met during the Second World War when his father was stationed in the Philippines. The family moved back there when Raphael was seven, and he lived there until he was 19 years old. Since his father was shop superintendent for a large bus company which built its own buses, oldest son Raphael could hang around any part of the shop. He

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learned how to overhaul a diesel, fix a fuel injection system, do metal work, and operate a broad range of other equipment. Mechanically inclined and possessing the ability to draw plans, he always had a project underway.

As with many gifted children, young Raphial's quick mind often landed him in trouble at school. Science teachers in the Catholic school he attended kicked him out of the classroom and sent him off to be punished because he wouldn't stop asking questions that they couldn't answer.

Too often such stories end sadly with the gifted child being mistreated, quitting school, and becoming cynical and even embittered. Raphial, however, was lucky. When a frustrated teacher would send him to the principal's office, he received soothing advice from the priest in charge. Father Gabriel said, "I know you're a special kid, just like your father has special wisdom. God gave you gifts. But be more careful with your teacher; don't ask all those questions." Instead of a whipping with a stick, the boy received understanding, validation, and some chore to do in the principal's office.

Later, a chaplain in the Armed Forces was the source of advice which Morgado remembered when he got out of the service. "Get busy or go crazy." For the next two years Morgado was a sheet-metal worker and pursued his hobby of drag racing in off-work time. Drag racing is hard on engines, and he tired of engine after engine blowing up; so he worked on improving them in whatever spare time was left.

One day he realized, "My garage is full of projects. How did this happen?" His expertise with engines had led race car owners to ask for his help; and eventually, the demand for his services caused him to quit the day job and go into business as a mechanic. While servicing expensive cars, he made house calls even at night, and met clients who became personal friends. Jim Givens, for instance, was still in law school when he hired Morgado to work on his Mercedes. Givens introduced Morgado to patent attorneys, gave him valuable advice, and has been with Angel Labs from its beginnings to the present.

He had long ago decided that no matter how exciting the idea seemed, he wouldn't develop any invention unless there's a market for it. The new engine concept arose out of the need to redesign racing engines. In a flash of insight and twenty-minutes time, one day he drew the toroidal (donut) shapes and how the new piston arrangement would work. There would be no need for valves. Perfecting the design for the timing mechanisms, however, took two years.

Morgado had been earning the level of income that later allowed him to develop the prototype of a paradigm-changing invention independently. He bought a five-acre ranch including buildings that he filled with expen-

sive tools and equipment for a production line. After he spent his own money, funding came from family and friends and then friends of friends.

The new engine was not the first project he intended to develop when he took the leap to full-time inventor, however. Ahead of it in Morgado's mental lineup was a project related to ammunition for the military. Again, the right person came into his life. A South Korean investor, chairman of a steel company, showed up at the ranch and saw the potential for Morgado's inventions. He took a special interest in Morgado and said, "I don't want you to be associated with guns for your first project."

The chairman's company happened to be working on high-vacuum pumps and realized that the Massive Yet Tiny Engine happens to be an efficient air pump. It exceeds existing pumps/compressors by providing massive pressure, volume, and flow—in one unit. So the wealthy Korean invested in the engine, and the work progressed.

The abstract of Ralph Gordon (Raphial) Morgado's 2004 patent describes an "Internal combustion engine and method in which pistons on different rotors move relative to each other to form chambers of variable volume in a toroidal cylinder....The shaft rotates continuously while the rotors and pistons move in their stepwise fashion."

On the website for Morgado's company Angel Labs (angellabslc.com) he stands beside a five-foot 3,000 lb. engine for an 18-wheeler and points to his 14-inch diameter, 150-lb replacement. If every internal-combustion vehicle and jet airplane were retrofitted with his engine, would decision-makers admit that oil wars are unnecessary?

In 2006 he caught the public's attention. Between the time he won the Emhart-NASA prize and its awards banquet, he spent his last \$60,000 to show the engine for eleven days at the Los Angeles Auto Show. The big auto companies displayed their wares upstairs, while Angel Labs was downstairs along with booths for tires, chamois and other automotive accessories.

Their booth lacked flashy décor and had no show girls. Nevertheless, the word spread that they were demonstrating something dramatic. Lineups in front of MYT™ Engine demonstrations blocked the aisles. The show manager came downstairs and said he was getting emails from around the world from people who had heard about the new engine design. The show's website as well as Angel Labs' website crashed. Chuckling at the irony, Morgado relates one visitor's comment to him, "You've got the ugliest booth at the show. But I've never seen anything this exciting!"

At the auto show, representatives of Ford, General Motors, and Chrysler Corporations ignored Morgado's team who invited them to come downstairs and have a look—or even



just take an Angel Labs brochure. Morgado took a break and went upstairs to see for himself. He was told by an automobile corporation representative, "We know who you are and we can't take anything from you." No explanation.

So despite Morgado's preference for having his invention rolled out in the United States, he was faced with the fact that only Toyota, Honda, and Hyundai representatives were willing to talk with him. He won't allow the invention to be shelved. "This engine belongs to the world."

People assume that with all the publicity the engine received in 2006, Angel Labs must have all the resources needed to go into manufacturing. However, as of this writing, a large loan of about \$10 million is needed to take the invention to its next level toward the marketplace. Early this year on Sterling Allan's radio show, Morgado announced that the engine is ready to go into production and he aimed to set up franchises for mechanics to replace existing engines with his smaller engines.

Raphial Morgado has more than 100 other inventions potentially useful for land, sea, or in the air. What brought him this far in the world, aside from having multiple skills, being industrious and able to earn and handle money, choosing a project with market potential, having self-confidence, planning ahead, getting good advice about patenting, avoiding exaggeration, and knowing when to keep one's mouth shut? I think it's a combination of all that and attitudes.

Early in life, he decided to do some good in the world when he saw children in neighboring communities going hungry. He knows that his best ideas come from a Higher Source, and he's grateful. And he learned to heed the wisdom of elders such as his parents and Father Gabriel. His mother, shrewd at business, advised, "Listen to your gut feelings." His uncle taught him to accomplish something every day even if he skipped school or partied that day.

Raphial Morgado says he doesn't want to spend the rest of his life dwelling on injustices such as car companies which ignore a breakthrough invention in their field. He advises other inventors, "Keep moving forward, brave and resolute. You cannot and I repeat can *not* be negative."

For his part, Morgado expresses gratitude. "I'm blessed to be surrounded by good people." I think he attracted what he gives out to the world. ■

Jeane Manning's new co-authored book, Breakthrough Power: How Quantum-leap New Energy Inventions Can Transform Our World, is available at or through the Atlantis Rising catalog. Her blog is at www.JeaneManning.com.