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"The Dream Machine"

By David Ansley

One Man Took Its Secret To The GRAVE. But The Little Engine That Could Change The World Continues To Fascinate --- Or To Fool

This is going to sound loony, but: Sitting in the garage of a house in Daytona Beach, Fla., is an engine that just might be the closest the world has ever come to the miracle of cheap, clean energy. Its inventor died in April. His followers fervently hope someone can figure out how to start the engine.

For the past 20 years they'd been trying to get him to reveal the formula for the mysterious fuel that made his engine run, or at least to give the machine a proper independent test. If he didn't leave his secret with someone, they can kiss goodbye the millions of dollars they spent nurturing this odd man and the engine they thought could change the world.

At first glance, this has all the elements of a perpetual-motion gimmick: Brilliant but quirky inventor Joseph Papp, a Hungarian immigrant with a mean case of paranoia. A wondrous dream machine that could run for thousands of hours on a few cents of fuel and produce no pollution. An apparently impossible power source in the fusion of helium atoms. Scores of devoted followers who elbowed each other aside in their eagerness to give him money, cars, houses. But it's not so easy to prove this engine a scam. Too many sensible people helped him build it and run it. Too many engineers say they couldn't find a hamster inside. The U.S. government gave it two patents. Even famed physicist Richard Feynmann couldn't debunk it --- the best he could do was blow the engine up, which killed a man.

More than one person has suggested that if Joseph Papp doesn't deserve the Nobel Prize for physics, they should create for him a Nobel Prize for legerdemain.

I first crossed Joe Papp's trail in March, when the Utah cold fusion story had just broken. A couple of chemists had stunned the world by claiming to have fused hydrogen atoms in a jar of water. Next day there were a couple of phone messages on my machine. One was from a guy who said he'd invented the same thing in 1986. He'd entered it in the Santa Clara County Fair and won honorable mention. I tried to call him back, but the phone number he left had eight digits.

The next call was from a Jimmy Sabori. "Forget those guys in Utah," he said. "All they have is a glass of water. We have an engine." I found Jimmy Sabori and his brother Jake in a gray warehouse in a corner of downtown San Jose. Tacked to the wall was a detailed blueprint labeled "Joseph Papp Thermonuclear Plasma Engine."

Over lunch they tried to explain the engine's principle and spun a tangled tale of intrigues, kidnapping, Navy tests, greedy partners and lawsuits. So could I see this engine run? Well, it was in Florida. It was out of fuel right now, and that's why they'd called me: They needed someone to put up \$50,000 or so to make the fuel for a proper demonstration. But I could take a videotape home and watch it.

I was caught up in their fascination. There on my TV was a large, quiet man standing in his garage as a 3-foot-tall black engine beside him quietly chugged away, its flywheel spinning. He disconnected the starter batteries. It chugged on. He unbolted its frame from the wood floor and let it slide sideways --- no wires coming up through the floor. He hooked it to a machine measuring RPM and horsepower and torque, and I guessed the readings were impressive. Could this possibly be real? If so, how could it stay under wraps for so long? In my search, which included two conversations with Papp before he died, I found that the Saboris were just the latest generation of investors and promoters strung across the country for 20 years.

Many of these people scarcely knew that the others existed. But they had spookily similar stories to tell, of seduction and disappointment, of investments forgotten but dreams that just wouldn't go away. Don Roser, 62, is a building contractor. In 1968, one of his employees at a Gardena refrigeration company, Hungarian immigrant George Haley, invited Roser to dinner to meet fellow Hungarian Joseph Papp.

Papp was fascinating, spinning a tale of how he discovered an odd nuclear phenomenon. In Montreal he'd built a one-man submarine--he showed the book he'd written, *The Fastest Submarine* --- that used his novel atomic power principle. And --- he had the newspaper clippings --- he'd disappeared one day in 1966 only to show up a couple of days later in a rubber raft off France, having raced his sub across the ocean at 300 mph. Where was the craft? It sank before he was rescued.

It took only three days for Papp to talk Roser into backing a new application of the mysterious power, a car engine modified so it could run for thousands of hours on a sealed charge of his fuel.

In a conventional engine, a few drops of fuel are mixed with air inside a cylinder and ignited with a spark. The explosion pushes down the floor of the cylinder --- a piston --- causing a shaft to turn. The remains of the burned gasoline are pumped out as exhaust.

Papp said his cylinders would need neither to breathe in any air nor to vent any exhaust. A load of fuel --- enough for a year or so --- would cost a few cents, and there'd be no pollution.

The fuel was an airy soup of inert gases --- helium, neon, argon, krypton, xenon. Inside the cylinders, Papp said, the combination of a magnetic field, pinches of radioactive substances and a well-timed spark would push the helium atoms so close together that a few would fuse together, releasing great energy, forcing the gases to violently expand and then contract again, over and over for thousands of hours.

Chemists and physicists reading this are shaking their heads. Atoms fuse only under the most intense duress. All the fuss about fusion this spring concerned hydrogen, the lightest of atoms. Even nuclear bombs cause hydrogen fusion for only a fraction of a second. Papp said he was fusing helium atoms. Even the center of the sun doesn't have the wherewithal to do that. But Roser took a gamble, and he pushed Papp hard. The man was a good machinist, he worked incessantly, and "it was like he had done it before. He wasn't groping."

Papp began with an old four-cylinder Volvo engine. In six weeks, he had it running.

(The skeptic asks: What about the car battery that he used to start it? Couldn't that be turning the engine? No, Roser says, because the battery was wired through the starter, which wasn't turning. Besides, Papp often would disconnect the battery and let the engine run alone for a few minutes.) In short order, Roser formed a joint company with Papp, hired armed guards and patent attorneys and called in the press.

Roser's idea was to find a major engine manufacturer to develop and market the thing. He and Papp would own equal shares in the technology. Big companies were interested: TRW, Lockheed, Rockwell. The Army and the Navy made inquiries.

Then came the clash. Roser wanted to put on a public demonstration. Papp was opposed. The old Volvo engine was rusted, he said. It might be dangerous. Instead, he suggested a more impressive demonstration. One Sunday in October 1968 they trooped out to the desert with six or eight engineers and a homemade cannon, to be powered by Papp's invention.

The barrel was four feet long, four inches in diameter, made of 1/4-inch stainless steel and anchored in a concrete block. For the breech they used a spare cylinder head from Papp's engine; for a projectile they machined a piece of steel.

Papp filled the cylinder with his gases and hooked up the power. "We heard this tremendous explosion. It was a low rumble, like a bass sound," Roser says. The projectile had jammed halfway up the barrel and ripped the cannon in half. The back of the gun flared open like a tulip.

The observers were impressed. But if Roser was going to sell the engine to anyone, he needed to have it thoroughly examined. And he still wanted a public show. Papp objected again, but Roser was firm. He had seen Papp and his family standing next to the engine while it purred away; he doubted there was much danger.

The crowd that showed up one Monday in November 1968 included engineers, reporters and, Roser says, an attorney from TRW with a \$3.5 million contract in his pocket. It also included a few students from Caltech and their professor: Richard Feynmann, skeptic.

Feynmann, who died of cancer last year, was a Nobel laureate physicist known to most Americans as the member of the Challenger investigation commission who used a glass

of ice water, a C clamp and a piece of rubber O-ring to cut through all the NASA double talk and dramatize what caused the shuttle explosion.

Feynmann left a manuscript describing his encounter with Papp. He was convinced the engine was a fake before he'd even arrived. Once there, he took one look and charged that the cord delivering power to a control panel was running the engine. Papp pulled the plug, and the engine kept running. Feynmann then figured there was a battery hidden inside the engine, so he held on to the plug a little longer, hoping the engine would run down.

Papp became frantic; the engine was running without any controls, he said. Feynmann relented and gave up the plug. Papp put it back in the socket right away and the engine blew apart.

"My back was to it," Roser says. "I knew what happened immediately because I heard that same rumble as when the cannon exploded. The guy I was talking to dropped in front of me. He had a piece of shrapnel go into the flesh around his skull."

A Mattel engineer died --- a piston blasted through his gut. Eight others were badly wounded. The man from TRW nearly lost a leg; the contract was forgotten. Papp's and Roser's partnership quickly fell apart; Papp wanted nothing more to do with Roser or the engine. Roser sued to get him back to work, but the case dragged on for years. Papp insisted Roser had been greedy, had tried to push the engine too far, had tried to steal the secret.

In the end, the judge gave Roser half the rights to the energy source. The engine, in the meantime, had won a U.S. patent. But none of that was much use to Roser, who had no idea how to make the fuel.

Roser now figures he spent half a million dollars on Papp, most of it in legal fees. For that, he got to watch the engine run maybe 30 hours altogether; the longest stretch was 35 minutes. Despite his low opinion of Papp, Roser still thinks the inventor had something.

Feynmann figured, after the engine blew up, that Papp had loaded a cylinder with an explosive that would damage the engine and delay the formal test but that he miscalculated the charge.

Roser says the engine and the cannon were inspected by police and Stanford Research Institute for signs of a chemical explosion and that none was found. "They were perplexed by it."

Geza Szabo, 64, is Chief Engineer for a metal tube company in the Los Angeles area. Like many people I spoke with, Szabo assured me he was Papp's right-hand man during the years they were together. Unlike most of the others, he actually got grease on his hands, helping build a six-cylinder engine.

"For six years I worked with him every day, eight to 10 hours... I know exactly how it's hooked up. I know how it works," Szabo says.

Does he believe in Papp's engine? No doubt. "I know it sounds incredible," he says. "Believe me, I'm no dummy. I have two engineering degrees and a truckful of common sense."

All this doesn't mean Szabo knew how to mix the fuel. With a dense thicket of pipes and hoses, vacuum pumps and ionizers, all flashing and hissing like a mad scientist's lab, Papp would produce a cylinder full of his gaseous mixture --- as long as no one was watching closely. "I was so decent," Szabo says. "When he did mixing and ionizing, I walked out."

Papp's expatriate Hungarian friends also didn't know much about his background. Where he came from seems to have depended on when you asked.

The most likely reliable source I could find was Ohio car mechanic Joseph Tatrai, a friend from Papp's home town who decades later visited him in Florida.

Joseph Papp was born in 1933 in Tatabanya, Hungary, where his father was an electrician for a coal mining company, Tatrai says.

After school, Papp joined a "civilian" flying club, the first step toward being a military pilot. "He was a young chap then, a skinny little nothing. He had ideals and dreams but had no resources to develop these things," Tatrai recalls. "He was always a tinkering person." He went on to an elite air force academy, where he flew bombers and studied mechanical engineering.

Later he worked at a research institute that had something to do with atomic power. That's where, Papp later said, he first thought about trying to make a "mini-fusion" engine.

Then came the Hungarian uprising in 1956. Papp made his way in 1957 to Canada, where he met and married Helen Maczko, another Hungarian immigrant. They had their only child, Susan, in 1967, and a year later moved to California. Papp's family life looked uncomfortable to friends. "He lived in a very, very bad area, a small, tiny house... His wife was miserable," one says.

"An absolute loner, in spite of the family," Haley calls him. "He was an obsessed scientist, even a mad scientist --- you can say that."

"He was, with all respect, a little flipped," Szabo says. Papp's emotions were intense and varied, to put it politely --- "friction all over the place," Szabo recalls.

Depression, too: "He would talk about his misery, how he was so badly treated," says John Phillips, an attorney who spent years trying to repair Papp's and Roser's old partnership.

And paranoia, especially: "He was scared from his shadow," Szabo says. He feared the oil companies or the Mafia would come after him. "Nobody could explain that nobody wanted to shoot him."

In one of the depositions he gave during his suit with Roser, Papp left a glimpse of this. "I am a scientist and I try to fight for United States and I am willing to work with United States, you understand, because I lost my country... But you have to think who is the troublemaker and who tried to cut my throat."

His pride seemed on the line, too.

"He believed fervently that if he ever gave up the secrets, he would be totally out," Phillips says. "... If he lost that, nobody would ever be interested in Joe Papp."

Why did he work so hard at an engine he could never give up?

"He felt it was valuable. He knew it worked," Szabo says. "But he worked by this foggy belief that the trap, the danger, somehow, someday, would disappear. He kept on working, improving --- oh, boy, working like a dog --- filing, drilling, melting... But his mind said there always is a trap."

Working with Papp was exhausting, but the potential seemed to make it all worthwhile.

"If he'd trusted me," Szabo says, "I could have worked out the technical details and we would have been trillionaires."

Papp added them to his list of people who had tried to screw him. Jim Adamson, 71, is an old hand at getting projects off the ground. For 40 years he worked in San Diego for Convair, helping build airplanes and missiles. He heard about Joe Papp through a friend who was Papp's latest lawyer. In June 1973 he invited Papp, Szabo and Haley down from Los Angeles. He got his boss's OK to bring the engine down and test it.

Papp's new engine was a Leyland six-cylinder truck engine, heavily modified, with elaborate wires and gauges and gizmos.

Papp and friends had given it an unusual setting: inside an old school bus. Not under the hood --- it was too big for that. The immense, gleaming engine sat on a gaudy carpet several feet behind the driver.

Papp's friends had concocted a plan where, with great flourish, they would fire up the engine (it had never actually propelled the bus) and drive the bus to the White House to show the world that the energy shortage was over.

Adamson persuaded them to quietly drive it down to San Diego for tests instead. In August 1973, on the night before he was to make the drive, Papp disappeared. Two days later he was found wandering miles away, with a .22-caliber slug in his left shoulder, telling a story of being abducted, escaping and being shot by someone who was after his secrets. No one was ever caught, and several people have always suspected Papp shot himself. If so, he did more harm than he intended. The nerve damage crippled his left hand.

It was almost a year and a half before Adamson could get Papp and the bus to San Diego. It was towed, not driven.

Adamson put the engine in an isolated building. To salve Papp's paranoia, he added a 24-hour plainclothes detail to Convair's already strong security. He assigned a confidential team of engineers and technicians to help Papp. Adamson recalls that the inventor impressed the engineers who were watching him; most figured he was no fraud.

The engine was ringed with monitors, to capture whatever emanations --- pressure, temperature, sound --- it might produce. They even planned to weigh it before and after.

But Papp beat the system. Late on Easter Sunday he went into the lab alone, turned on a camera and started the engine about half a dozen times. People who have seen the videotape say the flywheel ran for several seconds each time. "Go, baby, go," Papp whispered.

It stalled. A piece of metal had slipped loose and gouged the inside of one cylinder.

After Adamson's crew fixed the engine, someone sabotaged Papp's fuel mixer. Papp and Haley blamed the same mysterious forces behind the abduction, but Adamson said it was impossible for anyone but those two men to have gotten to the lab undetected.

About a month later, Papp's wife, feeling abandoned and fearful up in Torrance, tried to kill herself and 7-year-old Susan by cutting their wrists. Papp dropped all his work and went back to his family.

Despite the inventor's blatant reluctance to run his engine under any scrutiny, Adamson is convinced he had something real.

"We took the engine apart" after it jammed. "There were no little mice running around in the treadmill. There was nothing in there, no external connections to anything we could find."

Besides, "when you got inside there and saw the damage that had been done in that cylinder, you would almost have to believe there was significant power there," Adamson says.

In fact, Adamson invested in the engine in its next incarnation. Papp's recollection of the work at Convair? Someone tried to steal his secret from him.

Ernie Engel, 66, of North Platte, Neb., is "semi-retired" today. In the mid-1970s, Engel had just given up a lucrative career selling life insurance in the upper Plains and invested in a three-wheel automobile. At an auto show in Los Angeles in 1976, Joe Papp walked up. "He said, 'You've got a new type of car, and I've got a new source of power.' "

Papp showed his movies and told his stories.

Engel was impressed. He put down \$100,000 for a license to put Papp's engines in his cars. It was to be the first of many \$100,000 checks he wrote, on the behalf of himself and other Nebraska investors, who called themselves Energy Executives.

Energy Executives was given shares in a new corporation called Papp International, or rights to use the company's future engine in some application --- irrigation pumps, trucks, cars. But because Papp owned 82 percent of the corporation, owning a share usually meant you had sent a check to him, to do with as he pleased.

Papp used the first Energy Executives check to buy a fine house in Santa Ana: two stories, four bedrooms, a swimming pool.

Then he left for six months in South Africa. His translator said Papp signed a corporation's \$500 million contract --- but then reneged, complaining that he didn't want to be under its control.

When Papp returned, the investors started shelling out more cash: for the parts to build six new, two-cylinder engines; for a secure fuel lab in a separate town under a different name; for a house-hunting trip to Florida when Papp decided to move; for the \$350,000 Daytona Beach home itself; for a new Cadillac; for vacations to China and Hungary; for the patent lawyers' bills. People noticed that Papp was collecting a lot of money from them and not doing much in return, but they don't seem to have questioned his engine, just his responsibility.

Finally the two-cylinder engine ran, on June 18, 1981.

A videotape of that demonstration was sent to the patent office to shore up the new engine's patent application, which was granted. (The office would nominate his engine as one of the year's best patents, but Papp refused to participate in the ceremony.)

Somehow Papp could never be persuaded to give the engine up for an independent test.

Engel finally got fed up, he says, when Papp accused him of breaking into his lab and snooping through his papers. Someone did break in, Engel says, but it wasn't him. He knew Papp would never leave his engine's secret where anyone could find it.

"I had it up to the eyebrows. I drove back to Nebraska and never went back down there."

Altogether, he figures \$1.5 million went to Papp from him and his friends in Oklahoma. Roughly another \$750,000 came from the investors in Nebraska. Wasn't it a scam? "No, because the engine ran, no doubt about it. There were no secret valves. The engine was picked up and there were no hidden tubes going in, giving it fuel.

"I know Joe. Joe really had it."

Next up: Ken Dollar, of Tulsa, had been following Papp's progress since 1968, when a friend in California told him about the engine.

In late 1982, sensing that relations were strained between the inventor and the Papp International investors, he introduced Papp to Universal Power Concepts, a company that said it would market the engine.

The effort lasted for about five years before winding up in court. In the meantime, a new slate of investors wrote checks --by one estimate a million dollars worth, most of which Papp said he never received. No new engines were built. The one in Papp's garage ran countless times for would-be investors and for the experts they brought. But it never ran anywhere else, though it spent a couple years in a Tulsa testing lab waiting for the squabbling to settle down. Dollar still is convinced. He ended up as president of UPC, which still stands to gain if the engine ever runs.

"He was the best con artist I ever met in my life," he says, but adds, "The engine wasn't a con. To have something that was real and still do the con game, that I never figured out."

One of his partners, Ralph Keen, an assistant U.S. attorney in Oklahoma, concurs: "I think I'm a reasonably intelligent person; I understand these types of things could very easily be fraud. I did everything within my power to assure it was not a fraud."

Jimmy Sabori, 59, and his brother Jake, 56, heard about Papp about seven years ago, when Jimmy was building wind-power turbines.

The Saboris sent half a million dollars to UPC, they say, for what they thought would be franchises to use Papp's engine to generate electricity.

When no engine materialized --- it was stuck in the Tulsa lab waiting for the tests that never came --- they sued UPC to get their money back. But in July 1988, the judge instead ordered them to work with Papp to bring his engine to market. Jake hauled the engine back to Florida, rebuilt it with Papp and watched it run. Then the Saboris went hunting for more investors, preferably people who would plunk down a few hundred thousand.

But the Saboris quickly discovered Papp's fundamental dilemma: He was reluctant to reveal his secret. He said he was tired of skeptics. He was especially unwilling to spell it all out for anyone, like a physicist, who could understand the concept and steal it.

Then things got worse: In January, Papp had to open the engine to repair it, venting the last of his fuel. The elaborate mixer, unused in several years, was worn out. Without \$50,000 or so to build a new one, the engine could not run again.

In early April, I talked with Papp about this state of affairs by telephone. "I now feel like giving it up. Forget it. It's like pushing the big wall," he said. "I spend 80 percent of my life to convince people it's true." But if he gave up, he said, he couldn't face his family.

"Every time anybody sees my engine they get all crazy and like to have the whole thing and think how they can get it."

He wanted to keep the secret of his fuel to himself, he said, and just sell the engines.

That wouldn't happen. A long-ignored pain in Papp's belly turned out to be colon cancer. Within two weeks, he was dead.

Bruce Crouse, 32, a plant manager for a company that makes wheel trim for General Motors and Nissan, married Papp's daughter, Susan, last November. When Papp died, his penniless widow turned to her new son-in-law. Papp was barely in the ground before the phone and doorbell started ringing. Past investors, present partners, people who had always wanted to invest offered to help get the engine started.

Many people seem to figure that with Papp out of the way, there was a chance to get the engine running in public --- assuming he left his secret with someone. But did he?

Crouse wasn't talking. He wanted to sort through the applicants and cut a quick deal with somebody, and he was holding his cards close to his chest. The remains of Papp International --- an Oklahoma dentist and a Nebraska farm-machinery manufacturer --- insisted they had a backer and a plan, and that if Papp had left the answer anywhere, they owned it.

A former assistant, Mike Studley, hinted that he had learned the secret years ago. He had a six-month plan to get the engine running, which he would share with me if I held off on this story until he needed the publicity.

Another former investor, from Utah, showed up on Bakersfield television last month, with an endorsement from a California state senator, saying that Papp had sold the rights to him.

The Saboris, desperately short of money, say Papp entrusted them with copies of his papers. They don't understand the details themselves, but are reluctant to reveal the

papers to anyone who could. They haven't resolved this dilemma any better than Papp did.

As I listen to the true believers wrangle over the relics, I get a strong suspicion that none of them will make the engine run --- and that this will shake the faith of none of them.

What do I think? Well, I tracked down one more chapter in the Joseph Papp saga: his infamous atomic submarine.

For six years in Montreal, Joseph Papp's Hungarian friends watched as he spent all his time and money building his dream machine: a 28-foot, torpedo-shaped submarine that would use a secret atomic fuel to propel itself at high speeds. Papp built the sub, of steel and aluminum, in a friend's garage under strict secrecy. "Joseph didn't trust anybody, not even his wife," a friend said. In August 1966 it was completed; he showed it off to television reporters. A few days later, Helen Papp called the police to report that her husband and his submarine were missing.

French military authorities found Papp bobbing in a rubber raft off Brest, babbling about having crossed the ocean in eight hours.

Papp was the toast of two continents --- until his story started falling apart. A man looking like Joseph Papp, and using his passport, had flown from Montreal to Paris the night Papp had disappeared. A Paris-to-Brest train ticket was in Papp's pocket when he was found.

The *London Daily Mirror* said Papp admitted it was a stunt, that he couldn't bear to admit to his friends that the submarine wouldn't work.

Less than two years later, he left for Los Angeles, with the idea of building his fusion-powered engine. In the interim, he obviously figured out what went wrong the first time. Either he perfected his engine --- or he perfected his sleight-of-hand.

Caption: PHOTO: Inventor Joseph Papp with his fabulous fusion machine in the '60s. Over the next 20 years, investors would spend millions on what is either a miraculous breakthrough or an ingenious hoax.

DIAGRAM: Blueprints of Papp's engine exist. In fact, the engine itself exists. But the investors don't have the secret of the fuel that made it run. That died with Papp last April.

PHOTO: In the '70s, Papp modified a Leyland six-cylinder truck engine and mounted it in an old school bus. Papp claimed that the engine could run for a year or so on a few cents worth of his secret fuel. There were plans to demonstrate Papp's solution to the energy crisis by driving the bus to the White House. But the engine never actually propelled the school bus.

PHOTO: In the '80s, Papp was still tinkering with the engine. But he vented the remaining fuel three months before his death.