



Richard Browning hovers over the Vltava River in Prague, Czech Republic. YEMI A.D.

Not quite 'The Jetsons,' Imagine Solutions brings in flying man

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Naples Daily News
USA TODAY NETWORK – FLORIDA

We all have wanted to fly at some point or another, to look down on our planet home, to soar over the vistas we unfold step by step on the ground.

Richard Browning does just that as part of his job. He's the inventor of the Gravity Jet Suit, a body suit with attachments that allow a human to conceivably soar up to 12,000 feet, and allows them to zoom up to more than 50 mph.

Browning won't aim for either limit when he brings his Jet Suit to the Imagine Solutions Conference in Naples Monday. But he will zip around above the Ritz-Carlton Golf Resort.

Browning, who is still researching human flight, is among a bounty of well-known speakers during the day, including Norman Lear, Regina Dugan and Ed Hyman. (See sidebar.) But Browning may be the most visually ar-



Richard Browning with his Gravity Jet Suit apparatus. DPP PHOTO

resting with his personal Jet Suit demonstration.

He was currently involved in several races with the suit, but took time to record answers to questions from the Na-

ples Daily News:

Naples Daily News: Who controls the Jet Suit – the wearer or a controller at a base station?

Richard Browning: The pilot is the only one that controls the Jet Suit. By moving your arms inwards, you point more thrust downwards; that makes you go up. If you point one arm to the side, that pushes you the other way.

It is like riding a bicycle in that you are entirely in control of your movement and maneuverability. You do control a throttle which is largely set at a maximum, and it is "vectoring" where you are moving your arms that controls most of it.

No one on the ground is controlling it, which we think is a lot safer option.

Daily News: From what I see, the Jet Suit requires some skill and some muscle, with the apparatus weighing 55 pounds. How much training is required? And what kind of thrust do you get

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Jetsons

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when you start? Would a 117-pound person bolt skyward pretty fast?

Browning: Learning to fly this for a lot of people can actually be done in half a day! You do it on a safety tether, so in the comfort you cannot hurt yourself.

The rear engine is lifting a third of your body weight and the equipment, so it feels like leaning forward on a seat with your arms at a slight incline so most people's brains adapt quite naturally.

If you are light and athletic, we've had people learn in an accumulative 3-4 minutes of time in the Jet Suit.

The engines are pushing outwards and downwards only. A 117-pound person or lighter would not bolt upward because we tune the power level to the weight of the person, the fuel load, air temperature and pressure.

Daily News: The flight mechanisms seem to work with air-powered thrust. What kind of ground turbulence do they cause? Is this a mechanism that would not be good for flying in over people and animals?

Browning: Propulsion comes from micro jet engines, what you find on a jet fighter or airliner. They are essentially using jet fuel or diesel to create an expanded flow of hot air — not even that hot — that comes out with such speed, it blows you upwards like a fire hose of water would.

As a point of principle, we don't fly over people or property. I guess in testing we've had people underneath, of sorts, but in public we would not do (this) on the basis you don't want a Jet Suit pilot coming down on top of you. We are very precise with our safety protocols, so it is just something we don't do.

Daily News: The question of decibel level also comes up. What level does it produce currently and does that render communication from the wearer moot?

Browning: The noise level hugely depends on the type of surface you are flying over and the surrounding buildings or otherwise. If you fly over water or a lake with trees surrounding it, the sound is deadened. Two weeks ago, I flew indoors for Cisco's closing keynote in front of 7,000 people; that will reflect the sound more.

It is about 115 decibels, but that depends on the environment. The interesting point is the sound is of certain pitch and tone that drops off very quickly over distance. The sound is fine, but we always forewarn people.

Daily News: Would you say there are practical applications for the suit currently and what are they?

Browning: This didn't really start with revolutionizing the future of human mobility but maybe creating a thought-provoking, short-term, a very unusual realization of a sci-fi idea.

But actually, when you take a step back and look at something like (the) Formula One or Indy Car, they entertain and they inspire and they do lead to a trickle of innovative technologies that we hope to achieve through our International Race Series. We think we are pretty good at entertaining and enthralling, especially with a few pilots together.

Now, if the engines get more efficient and the technology gets better and the electric version we have built benefits from better batteries and the Jet Suit gets lighter, then maybe there is a role for more human mainstream use.

But in the meantime, it is entertainment, it is racing, it is inspiring people, investigating specialist military and search and rescue applications.

We have built an electric version as



Richard Browning, inventor of the Jet Suit, flies over Brayford Pool in Lincoln, UK. WILKIN CHAPMAN

What: The Imagine Solutions Conference, which calls itself a "global thought conference," brings speakers who will stimulate ideas, discussion and, potentially, action on issues and opportunities in the world today. A complete list of speakers is on its website, but here are some of the names:

■ Ed Hyman: Institutional Investor magazine choice as the top economist on Wall Street for 44 years. He is chairman of Evercore ISI, where he heads Evercore ISI's economic research team, and is vice chairman of Evercore, the investment banking firm.

■ Regina Dugan: first woman director of DARPA (Defense Advanced Research Projects Agency), the federal governmental group researching breakthrough technologies for national security. Mark Zuckerberg recruited her to lead Facebook's hushed Building 8 hardware lab.

■ Gary White: CEO and co-founder of Water.org, a global nonprofit working to bring safe, accessible water and sanitation to all. He is on the TIME 100 list of the world's most influential people and is considered one of the world's best thought leaders on the issue of water.

■ Norman Lear: Via streaming linkup. Considered one of the brightest minds in developing television with his forward-looking series, from "All in the Family" and "Sanford and Son" to "Maude." He is dedicated to the future enough to buy an original copy of the Declaration of Independence to travel to schools in the U.S.

Where: Ritz-Carlton Golf Resort, 2600 Tiburon Dr., Naples

Admission: \$650; special rate for nonprofits

To register or learn more: imaginesolutionsconference.com

an exercise to see how challenged it would be. Lithium batteries have a 60 times worse energy density than gasoline so that is a challenge. Also, if you are flying around and somehow hit a lithium battery and it ignites, that's a very scary thought, unlike diesel which is non-explosive and really very hard to ignite.

Our real issue at the moment is weight.

Daily News: Of course, with jet fuel

or diesel being carried around by the flyer, I am wondering what safety features are incorporated to protect the wearer in case of an accident.

Browning: We can run diesel, paraffin, jet fuel or kerosene. They are the same grade of hydrocarbon format. Naturally, we have very strict safety protocols in place (beginning) from wearing non-synthetic fabrics.

We can clip out of the Jet Suit very quickly but in practical terms, when you

Propulsion comes from micro jet engines, what you find on a jet fighter or airliner. They are essentially using jet fuel or diesel to create an expanded flow of hot air — not even that hot — that comes out with such speed, it blows you upwards like a fire hose of water would.

dig in to it, the fire and flame element is really not an issue...and the added bonus is we are flying over water in the Race Series.

Daily News: What do you envision as the future of the Jet Suit? How do you want to see it being used? Of course, some people want to think of it as enabling us to zip around like characters in "The Jetsons," but perhaps you see it primarily for more utilitarian, commercial or philanthropic purposes.

Browning: The pinnacle activity is the Race Series just like Formula One, in entertaining, inspiring and furthering the technology for R&D.

As to the Jetsons, isn't it funny, time and time again, we watch sci-fi or see and hear things that once did not seem feasible those years ago, but have become a reality today? If you believe in something you can make it work.

That is our message to the future of STEM: Break rules; push boundaries. But do it safely, and you just might succeed.