THE FREEDOM FOR EVERYONE TO GO FROM A TO ANYWHERE - SKAI -SIMPLE, SAFE, CLEAN FROM END-TO-END

News / Manufacturer

A company declares to change the world with a revolution in transportation. By innovating, developing processes and technologies that no one else has yet done. By offering convenient, cleanest, and safest way to move from A to B - first hydrogen eVTOL aircraft. Simply. Better. It's absolutely logical that we were determined to learn a lot more and get the answers to our many questions. Here's our exchange with Bill Spellane, Alakai's Chief Operating Officer:

T.O. Well obvious question as you are first hydrogen eVTOL and you say that it is so simple. Why did nobody else do this before?

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B.S. There are a couple layers to this answer. One, there's tremendous inertia on what's already been done before. As people keep doing that, you get a few companies showing up that believe in the vision of distributed electric propulsion for aircraft, which is totally different than what's been done in the past. You'll see the established OEMs dipping their toes in and testing and building this. But it's not where their money is made, so they have less of an incentive to really push forward. It takes startup companies to do this that don't have the legacy business and want to avoid cannibalizing their own cash flow to push forward. On distributed electric, we took it a step further by not using tilt rotors. We believe strongly that a tilt rotor solution is more difficult to certify and potentially dangerous. Batteries are limited in a multicopter, so that pushes you to hydrogen, and then you get all the benefits with hydrogen flowing from there.

T.O. Tell me about the company, there is always a beginning somewhere. So, what was the path for you and how did it all start?

B.S. The dream of Alaka'i started around the nineties. Some aviation executives were sitting around talking about the future of aviation and said electric is going to come someday, and that's going to be the next thing. We've reached a limit on combustion engines and what they can do. They're also dirty for the environment and someday electric is going to come. The execs all agreed this is going to happen at some point in the future. But one of them didn't give up the dream. Brian Morrison, the founder of Alaka'i, he's the one that put Alaka'i together. He found the investor, got it all kicked off, and he's the one that did the math in the beginning that said if we're going to do this we need to do it with hydrogen.

T.O. So, you're telling me that basically there is one visionary guy, and if he is strong enough and determined enough to fight for the idea, everything is possible?

B.S. That's what it always takes. In every single startup company, somebody sees something different than the world sees, whether it's a new type of aircraft, a cell phone, a laptop computer, or a tablet, it's all the same. It gets replicated everywhere. Somebody sees something different, and they want to go explore. Whether that's exploring west in the United States a couple hundred years ago, or sailing around the world before that. It takes an explorer, and that's what we are, explorers.

T.O. Going back to sustainable aviation - what I definitely like is your statement: sustainability is clean from end to end. Can you share more? And how is that statement reflected in your design and technology?

B.S. First, it starts with where we get our hydrogen fuel. We use liquid hydrogen and this comes from hydroelectric plants. With water dams, there's renewable energy there and a low cost of energy too. So that's good. To make hydrogen you can also add in wind and solar and other types of renewables. But the hydrogen that we buy is not from methane or other types of carbon fuels. We buy it from liquid – achieved through the splitting of water. We use green hydrogen. Now, you look at the entire lifecycle of a hydrogen fuel cell compared to other types of engines whether it's battery or combustion. When a hydrogen fuel cell reaches its end of life, there are membranes on the inside that you take out and replace. So, our environmental impact after 5,000-10,000 hours is equivalent to using about 500 sheets of paper. Now, it's plastic, it's not paper, it's not biodegradable like paper is. But that gives you a sense of scale of what we put in the trash after 5,000 hours of usage, as compared to other ways of building electric vehicles that have a much more substantial impact on the environment.

T.O. I know that some potential passengers, even when you say hydrogen, they are still afraid of that. Do you think that there is a need to educate future customers and passengers? They've heard about something, they don't know really what it is and how it

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works, so they are afraid of it.

B.S. Yes, 100%. People don't know that you can buy a hydrogen car right now in California. You can lease one from Toyota, Honda and Hyundai. There are hydrogen refueling stations that are public in California, in downtown San Francisco, that people can walk by and they don't even know that there's hydrogen there. It's a material that you want to be safe around and there are known ways to be safe. Follow those guidelines and you're all set. People also don't know that the forklifts in distribution centers use hydrogen . They're using hydrogen indoors every single day and it's safe. They take delivery of liquid hydrogen, store it on site at their warehouse, then they compress that hydrogen and use it inside their forklifts. That's happening all across the United States. And Europe's the same way, it's all over the world. So, you hit the nail on the head that we must educate, but it won't be too much of an issue. I think what's going to happen is adoption is going to create the education. People will see the benefits. They'll self-educate, self-learn, and they'll see their neighbors are using this. If my neighbor is safe, I trust my neighbor. We'll be okay.

T.O. Obvious question about safety because this is something aviation is all about - safety. So whatever startup and idea is, you must prove that it's safe. If there is no safety, there is no certification, and a dream will be a dream and nothing more. So, what about safety in your product?

B.S. That's right. We have to meet the same equivalent or better safety certifications than any other vehicle that's on the market. Because we are designing a new clean sheet right now, we have the most stringent safety requirements of anything, and that's anybody building a new vehicle that's not necessarily true for a legacy vehicle. They're grandfathered in with those old rules. So we have the up-to-date safety regulations. The FAA will give us no break on safety whatsoever. This is something new and novel that they need to understand. There won't be any "well, we'll trust them, or this has been done before." There's no complacency at the FAA because it's brand new to them. We will be held to a high standard, which is what we want. We want a safe product. We want the safest product on the market and we're going to deliver that.

T.O. If we talk about certification, do you have any idea how much time it could take?

B.S. It's at least a couple of years from now. And that's just based on where we are in the process. Also, where the FAA is and what they understand for hydrogen vehicles, as well as any other type of eVTOL, they're learning on the job as well. And there's some pathfinding there. Now, ultimately, we don't control our own destiny there, so I don't get to pick. So, it's a risk for us that we address through other means, but we're diligently working through this. And so, we foresee FAA certification is at least two years away.

T.O. What about Europe?

B.S. We will certify for Europe after the United States. Because the FAA is working through these rules, Europe is also working through the rules themselves. They are working together to harmonize, and so are other regulatory bodies across the world. However, CAA in the UK is not exactly the same. In order to reduce scope, we are focusing on the FAA now. We'll update the vehicle and our certification package to certify in other areas of the world after the US.

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T.O. Your next steps and what you've planned for 2024?

B.S. We have two prototype vehicles currently in test flights and we'll maintain those test flights. We'll continue expanding the flight envelope on the tests that we do. We are going through typical engineering exercises to make the product lighter, smaller, more reliable, safer – all of these things. We'll continue to work with the FAA in pushing forward with our certification program. At the same time, we are speaking with customers or potential customers, and we'll continue accumulating orders for those.

T.O. What do you need to make it happen even faster? Do you need more partners? Do you need more investors? Do you need more information on what's going on? You have a dream, you have a product now, you have tests ongoing. Obviously, you have to wait until the certification and you're not controlling timing of FAA. Do you need something to accelerate the process?

B.S. We have smart, hardworking, capable people here at Alaka'i, so that's good. So, we got that. We need more of those. We continue to grow to get more of those people. We need vendors that supply various components and services to also say, "yeah, we believe that you have a path to success here, what can we do to help?" Because we see this as being the future and we want to be in that market in the future. There are vendors that can supply certain components to us. There's hydrogen infrastructure buildout that will need to happen. The Department of Energy in the United States is investing in this and we need those plans and projects to happen to create the hydrogen supply and infrastructure. Investors help too. We are not a cash flow positive business like most startups, so investors that also believe in the dream help as well.

T.O. Perfect, from our side, we will spread the message. And I know that in some cases, unbelievable things are happening. When aviation is in your blood it's like a disease. I mean, I didn't see a lot of people who could leave the industry. So basically, I think we will do everything possible.

B.S. There's something special about a heavier-than-air vehicle flying. There's a lot of young people that look up at the sky and they see these big metal things flying above their head and that is so cool. They think "I want to do that." And that's what makes aerospace so special. Everyone is a dreamer, it is a growth industry. There are jobs for pilots at the airport that we work out of. There

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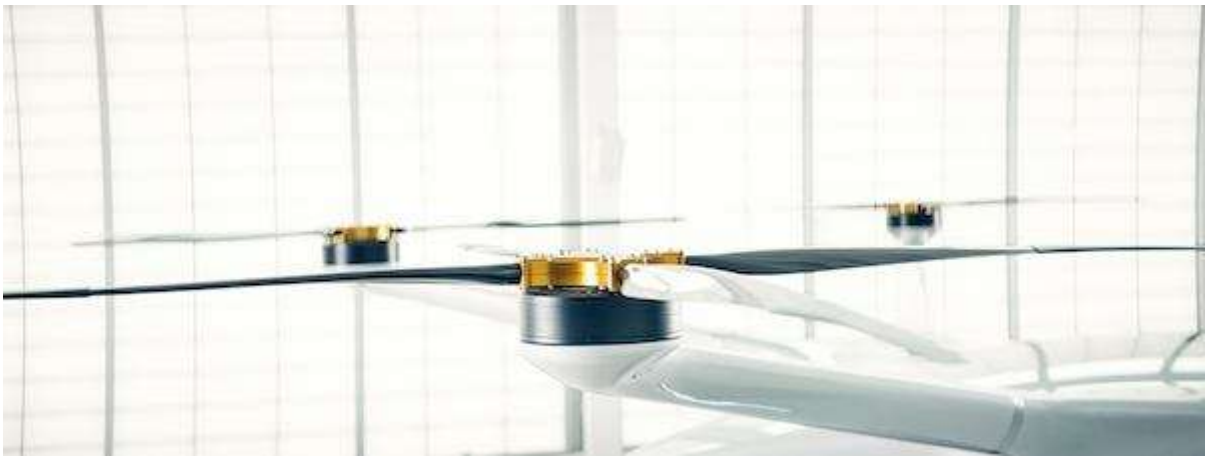
are some people that give free flights to children on the weekends once a month. They try to nurture that dream there. We like to open our doors and invite those people in to show what is possible. Some young people want to be an engineer, or they even just love aerospace, but maybe they want to be an accountant, or maybe they want to be a project manager. Whatever it is, our company has it, and they get to work next to something cool. We like sharing and showing something cool to those young people. You should see their eyes light up large and their smile when they come and visit us. We let them go and sit inside the vehicle, and we have a nice, beautiful interior. They climb around the interior, sit in the pilot seat, and pretend to fly the vehicle. We like showing that off and we like enabling dreams. It's also a good tool too because sometimes an investor wants to visit and they can see our vehicles and sit inside it themselves.

T.O. Perfect. If I make it to United States, I will ask and come and see. Thank you very much! I'm looking forward to hearing all possible news and wishing the best for further development!

B.S. You are always welcome. Thank you very much.



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