

## PTI TECHNOLOGIES INC. – FARNBOROUGH 2024 INTERVIEW

### 1. What has PTI been up to in the last few years?

*PTI has been on a journey of change over the last few years. As we managed to navigate the impact of COVID, we have proactively worked with our customers and supply chain to support the significant increases in market demand while proactively building and strengthening our workforce as well as expanding our manufacturing capabilities. We are seeing significant growth in production and in the aftermarket for both commercial and defense markets, so our order book is strong. We have been able to continue to diversify our product portfolio in filtration, fluid control and Cartridge Actuated Devices / Propellant Actuated Devices (CAD / PAD), winning both new business and growing existing business. We are also continuing to make investments to develop technology and new products to grow in our existing market segments as well as to enter new market segments. PTI has also been successful in creating growth internationally with both new military and commercial programs. We see the aerospace market changing and evolving in areas such as sustainability, new propulsion engines, hydrogen propulsion, cabin air quality, new material, predictive health monitoring and others. PTI is positioning ourselves to be ready with the right products at the right time for our customers, supporting the changing needs of the market. The last few years have been turbulent and we expect the same in the next few years, but we are committed to meeting the challenge and creating a competitive advantage for PTI.*

### 2. What are the newer platforms in which PTI products have been installed?

*PTI works with all fluids found on aircraft including hydraulic fluid, fuel, oil, lubricants, coolant fluids, bleed air, cabin air and water. Our products include filtration manifolds and subsystems (hydraulics, fuel, lubricants, coolants, cabin air and water), fuel tank inerting filtration, aerial refuelling receptacles, fuel valves, anti-ice start bleed valves, initiators, reefing line/cord cutters, pressure cartridges, gas generators, piston actuators and thermal relays. We are pleased that our customers have selected PTI to be a supplier on a number of existing and new programs.*

*Key programs and platforms for PTI include Airbus A350, Embraer E-Jets E2, Boeing 777 / 777X, Dassault 6X/10X, Bombardier G7500, Boeing F-15EX, Lockheed Martin F-35 (JSF), KAI KF-21 Boramae, TAI Hurjet, Bell FLRAA V-280, Sikorsky H-60 Black Hawk, Boeing AH-64 Apache, Bell 525, Raytheon Stinger missiles, the SAVO Mine System, Wolverine, various ejection seats and many others. PTI also has been selected to supply coolant filtration and air filtration systems for fuel cells as well as high-temperature fuel filtration for next-generation propulsion engines. We have also been selected to supply lubrication systems and air systems on several new AAM / UAM vehicles.*

3. Last time at Farnborough, you mentioned that PTI is looking to invest in number of avenues in the coming years. How has that progress been?

*Yes, PTI has been very active in our investments in a number of areas to develop new products and new technology. In the area of improving passenger (and flight crew) experience, we have continued to develop and test bleed air filtration systems to address “smell” or “fume” events. While initial results were not as good as we wanted, working with our OEM partners, we now know what success looks like and have a path to get there. We have also tested advanced cabin air filtration to remove particles and smells from the recirculated air, and are actively evaluating the efficacy of ionization systems on viruses and bacteria in aircraft cabins. In response to customer interest in improved water filtration, we are now testing improved filter designs. With the market push for sustainability or becoming carbon neutral, our work in high-temperature fuel filtration, liquid / gaseous hydrogen filtration, fuel cell thermal management filtration and fuel cell air filtration is paying off in some of the early test results. We are continuing to look to invest in key technologies for the next-generation of commercial and military aircraft, airframe and engine systems including standalone-integrated hydraulics, fuel tank inerting filtration, air refuelling systems and air / fuel valves. Other investments include investing in our manufacturing capabilities such as visual factory, additional machining and automation, as well as technology such as additive manufacturing. PTI also continues to look at investments in acquiring or licensing new product lines and businesses that are complementary to support continued growth of our product portfolio and capabilities.*

4. How has the progress and orders been for the metal fiber media developed by PTI?

*PTI Technologies has been developing our 421<sup>®</sup> metal fiber media for over twenty years and we are an industry leader in using metal fiber. This development was driven by the U.S. Army because cellulosic or micro-fiberglass media rely on adhesives to bind the random fibers to maintain structural integrity; however, these filters are prone to media migration and shedding of contaminants under stressful operating conditions. PTI worked closely with the U.S. Army to develop both metal fiber media filters for those applications and the MIL-STD for testing the filters. We have designed and qualified a number of metal fiber media filter elements for the Black Hawk, Apache and AGPU, as well as other applications such as bleed air filters used on the C-130, filters used on the F-35 flight control actuation system (rudder and flap) and in long-range radar cooling systems. Today our 421<sup>®</sup> metal fiber media is made using a variety of metal fibers ranging from stainless steel to special high-temperature alloys.*

*With our proven use on the military side of the market in hydraulic, bleed air and coolant applications, PTI is working to bring 421<sup>®</sup> metal fiber media filtration into the commercial landscape for bleed air, fuel, engine and other aircraft filtration*

*applications. Today we see increasing interest in the use of 421® metal fiber media in a variety of applications where filtration of highly viscous, high-temperature, cryogenic and corrosive fluids is needed, or where you have a high dynamic environment. We are currently in conversations with multiple airframe and engine OEMs and establishing partnerships for the future of this innovative solution. It is being applied to high-temperature fuel filtration on new engine designs, new Fuel Metering Unit designs and high-temperature / high-speed gearboxes. We are also using our 421® metal fiber media to provide filtration for liquid or gaseous hydrogen to provide improved filtration performance over typical metal mesh filters. We believe that our 421® metal fiber media brings value to customers with challenging fluid systems by maintaining fluid cleanliness over the life of the filter. As a result, customers benefit in maintaining system operation and schedules, reducing maintenance downtime, extending the life of expensive system components, contributing cost savings to the bottom line, and ultimately, improving operational safety during mission-critical operations.*

5. How challenging is it to reinvent or innovate the filtration and fluid control equipment category?

*As a supplier of filtration and fluid flow control products, PTI Technologies is always cognizant of being a small part of bigger systems, but the impact of our products is substantial. When fluids are clean, the aircraft systems perform better and are more reliable. This in turn increases aircraft availability and reduces the cost to operate and maintain the aircraft, which has a huge impact on the aircraft operator. Our designs must work under all aircraft operating conditions and perform as required.*

*Commercial aircraft, business jet aircraft and military aircraft programs are constantly pushing suppliers for better – higher performance, improved reliability, lower weight, longer life, lower costs, shorter lead times, more sustainable or some combination of the above. Our impact on the aircraft covers all aspects of the systems we are on, as well as being a key part of the passenger and flight crew experience for comfort and safety. We are constantly pushing technology for better performance under challenging conditions to ensure the performance and reliability of the aircraft and engines. The innovation and technology that PTI offers opens the door to have discussions on a program, but then we have to deliver. Our industry is so dynamic that we see new concepts emerge all of the time, whether it is sustainability, AAM / UAM, advanced propulsion or new aircraft designs. To be competitive, you must be innovative and to be innovative, you have to invest in technology. Today, we are driving innovation in areas such as sustainability, more efficient propulsion systems, improved airframe systems and equipment, increased emphasis on reducing costs (new equipment and operating costs), predictive health monitoring and improved cabin air quality/health.*

*The industry's push for better is also true for our CAD/PAD product line. The components are small, however the flight safety systems and critical defense*

*applications where they are used such as ejection seats, escape slides and missile / munition systems, must operate first time, every time without failure. This requires an extremely high level of reliability. Precise performance, high reliability, simplicity of operation and on-time delivery are paramount for this product. In CAD / PAD we are innovating through the development and testing of new products to meet customer needs, as well as looking at automation to reduce lead time and costs.*

**6. What are your expectations from the show this year?**

*For PTI, the Farnborough Air Show is all about continuing to strengthen our relationships with our current customers as well as creating relationships with new customers and having conversations about their needs and how PTI can fulfil these needs. It is these types of conversations that help drive our business and guide our investments. Going to a major show like Farnborough (or Le Bourget), is a major investment, and the conversations we have with customers are what make attending Farnborough so valuable. At the 2024 Farnborough Air Show, PTI will be highlighting some of our new technology for aircraft systems, as well as highlighting technology and capabilities in sustainability. From our market observations, PTI has developed new products for bleed air filtration for commercial aircraft, high-temperature fuel and lube filtration for new engines, advanced fuel cell air filtration, new thermal management filter systems, improved cabin air and water filtration systems, improved aerial refueling receptacle systems for next-generation military aircraft and CAD / PAD devices such as initiators and reefing line cutters for a variety of applications.*

*We expect to be very busy all week with meetings and conversations, as well as being able to see old friends. We look forward to opportunity to showcase our capabilities, so come stop by our booth and meet the Team in Hall 3, Booth #3331*