

PTI'S LEADING-EDGE AERIAL REFUELING TECHNOLOGY FOR NEW AIRCRAFT PROGRAMS

Aerial refueling, or refueling in the air, is the process of transferring fuel from one aircraft (the tanker) to another aircraft (the receiver). The purpose of air-to-air refueling is to allow aircraft to fight more effectively by increasing their range, increasing the amount of weapons and ammunition they can carry, and extending the time they can spend in the air. It allows air power to be projected farther from home and concentrated where and when it is needed most. Today, receiver aircraft rely on one of two different systems on the tanker – a refueling boom or a probe-and-drogue system. These systems are operated by an aerial refueling operator in the tanker aircraft, who controls the connection of the boom or probe-and-drogue to the receiver aircraft.

In the refueling boom system, used primarily by the United States Air Force, the receiving plane flies in close formation with the tanker. A boom operator in the tanker then flies a rigid boom into an Aerial Refueling Receptacle (ARR) on the top of the aircraft. One main advantage of the refueling boom system is the fuel transfer rate to the receiving aircraft – up to 6,000 pounds per minute (880 gallons per minute). This system is also better for refueling large aircraft, which have much larger fuel tanks.

PTI Technologies' legacy in aerial refueling began on the receptacle side of the air-to-air refueling process, providing the equipment necessary for the pilot to receive the refueling boom. In 2019, PTI acquired the designs to manufacture and support the Boeing F-15 Aerial Refueling Receptacle from another business unit of ESCO Aerospace. The location of the F-15 ARR in the left-hand sponson of the aircraft makes this design a very unique configuration. Boeing has been very successful in selling multiple versions of the upgraded F-15 aircraft to numerous foreign militaries and now to the United States Air Force under the F-15EX program. To support the F-15EX and F-15 sales to foreign militaries, PTI is currently manufacturing new ARR's to support this aircraft production. PTI is also providing spares and MRO support to the United States Air Force and various air forces around the world.

In 2019, PTI Technologies began the development and qualification of a new Aerial Refueling Receptacle for the KF-21 Boramae fighter being developed by Korea Aerospace Industries. The configuration and design for the KF-21 ARR differ significantly from the legacy F-15 ARR, as it is designed to be mounted on the centerline of the aircraft. With the successful completion of the KF-21 ARR development and qualification, PTI has begun the first production deliveries for this new light attack aircraft. PTI has continued to apply our ARR technology and designs to other new platforms including the Turkish Aerospace Industries Hurjet trainer and the Turkish Aerospace Industries next generation Kaan fighter.

PTI ARR's are designed for use with either 3,000-psi hydraulic systems, or with a 4,100-psi hydraulic system directly or by using a Pressure Reducing Valve (PRV). PTI is taking our latest 3,000-psi and 4,100-psi ARR designs and collaborating with new fighter and trainer / light attack aircraft development programs to provide aerial refueling capability that extend their range and allow for heavier payloads. With the increased number of military fixed-wing



aircraft development programs in the United States and internationally, PTI sees a bright future for our Aerial Refueling Receptacle technology and designs.

However, PTI is not content to focus only on Aerial Refueling Receptacles. As part of the acquisition of the ARR business in 2019, PTI also acquired designs for military-standard probes and nozzles used for probe-and-drogue aerial refueling. With the growing success of the ARR products, PTI is turning its attention to developing and qualifying higher performance aerial refueling products, such as boom valves and couplings to fully support the needs of the United States and international air forces with a complete product suite of aerial refueling systems.

Come meet the PTI team at the ESCO Aerospace booth in Hall 3, Booth #3331, to learn more about PTI Technologies and how we can apply our Aerial Refueling technology and capabilities to enable your new aircraft designs.