

AERIAL REFUELING: PTI'S ROLE 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 airplanes to fight more effectively by increasing their range, the amount of weapons and ammunition they can carry, and the time they can spend in the air. It allows air power to be used 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. The 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 aerial boom system, used primarily by the United States Air Force, the receiving plane flies in close formation to 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 rate of transfer of a lot more fuel – up to 6,000 pounds per minute (880 gallons per minute). This system is also better for refueling large airplanes, which have much larger fuel tanks.

PTI Technologies' legacy in aerial refueling began on the receiver side of the air-to-air refueling process providing the equipment necessary for the warfighter to receive the refueling boom. In 2019, PTI acquired the designs to manufacture and support the F-15 Aerial Refueling Receptacle from another business unit of ESCO Aerospace & Defense. The location of the F-15 ARR in the left-hand sponson of the aircraft makes this design a very unique configuration. With Boeing's success in selling multiple versions of the F-15 to foreign militaries and to the United States Air Force (F-15EX program), PTI has been manufacturing new ARR's to support new aircraft production. At the same time, PTI has been providing spares and MRO support to the United States Air Force and other 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 are very different from the 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 will begin the first production deliveries in 2025.

PTI is now taking our newest ARR design, and is working with a number of new fighter and trainer / light attack aircraft development programs to provide aerial refueling capability in order to extend their range and allow for heavier payloads. With the increased number of international military fixed-wing aircraft programs, PTI sees a bright future for our Aerial Refueling Receptacle technology and designs.



However, PTI is not content to just focus on Aerial Refueling Receptacles. As part of the acquisition of the ARR business, PTI also gained 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 qualifying and providing a family of probes and nozzles to fully support the needs of the United States and international air forces with a complete product suite of aerial refueling systems.

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