

Raytheon's JPALS Proposed for Marine Expeditionary Use



Raytheon's CJ Jaynes discusses the Joint Precision Aircraft Landing System at Sea-Air-Space 2021. *SOLARES PHOTOGRAPHY*
NATIONAL HARBOR, Md. – Raytheon has developed a version of its Joint Precision Aircraft Landing System (JPALS) designed for expeditionary airfields, which it is proposing as ideal for Marine Corps expeditionary base operations.

JPALS is a landing system based on differential Global Positioning System navigation. It is installed or being installed on the U.S. Navy's aircraft carriers and amphibious assault ships and U.K. and Italian navy aircraft carriers. JPALS was first deployed in 2018.

CJ Jaynes, executive technical adviser, Precision Landing Systems for Raytheon Intelligence, Information and Services, speaking at the Navy League's Sea-Air-Space Expo in National Harbor, Maryland, said the company has developed vehicle-portable JPALS that could be deployed to a forward base for providing precision landing for aircraft fitted with the JPALS avionics.

The expeditionary JPALS consists of a user display, antennas, and for processing racks, and a power generator. It can be carried in a vehicle such as a Humvee or Joint Light Tactical Vehicle. The system can be set up on site in 60-90 minutes by one or two personnel.

The JPALS uses triangulation to provide precision landing data to aircraft from a distance of up to 20 nautical miles. It can provide information to a fixed-wing aircraft while at the same time it provides the landing data to a helicopter within range.

The system does not rely on precision approach radar or an instrument landing system, said Brooks Cleveland, Raytheon's senior aviation adviser for Precision Landing Systems.

Aircraft currently configured for JPALS include the F-35A/B/C strike fighters and the CMV-22B Osprey carrier-onboard delivery aircraft and will be installed on the MQ-25A Stingray unmanned aerial vehicle. Installation on the F/A-18E/F Super Hornet is planned for the 2026-2027 time frame.

The JPALS suite for aircraft includes the JPALS waveform, a reprogrammable radio, and computer power.

Raytheon demonstrated its expeditionary JPALS for three weeks in June at Yuma, Arizona. Marine Corps F-35Bs made 50 approaches.

Jaynes and Cleveland said the land-based system at the outlying field also was praised by Marine Corps F-35B pilots because it gave them practice using the system that would enable them to be more ready for shipboard deployment.

JPALS was first deployed on the amphibious assault ship USS Wasp for use by Marine Corps F-35Bs. The USS Carl Vinson deployed Aug 2 as the Navy's first aircraft carrier to deploy with JPALS. The ship carries the F-35C and CMV-22B on their first deployments.

Raytheon built 12 engineering and manufacturing development versions of JPALS and has delivered 10 of 26 production versions. Raytheon expects to deliver the rest by 2023.