

# CENTRE FOR JOINT WARFARE STUDIES



## CENJOWS

### AVIATION TECHNOLOGY – DEVELOPMENTS IN CHINA

#### AERIAL VEHICLES

1. **FC-31 Carrier Capable Aircraft.** On 29 October, images emerged on Chinese social media platforms showing what appears to be a prototype of the Shenyang Aircraft Corporation's (SAC's) next-generation, carrier-capable multirole fighter aircraft performing its maiden flight. The images show a green-painted prototype in flight, with its landing gear extended, accompanied by a J-16 fighter aircraft. The aircraft appears to share some design commonality with the FC-31 low-observable multirole fighter prototype. Both single-seat aircraft feature two engines, twin canted tail fins, and a high-mounted cockpit. This prototype appears to have a launch bar on the front of its landing gear, allowing for catapult launches, as also a wing-fold mechanism, confirming it's intended for carrier operations. Other changes over previous versions of the J-31/FC-31 include the addition of what appears to be an electro-optical targeting system (EOTS) under the aircraft's chin. The cockpit has also been changed, with the bubble canopy of the previous FC-31 replaced with one that is flush with the fuselage and the forward section of the aircraft broadly resembles that of the Lockheed Martin F-35. The designation of the new carrier fighter remains unknown, but there has been speculation in the past that it could be designated J-21 or J-35. The aircraft's power plant is also not clear. The original J-31 was powered by the Klimov RD-93, but it is possible that the new FC-31 variant could be powered by a pair of Guizhou WS-13s. However, even after nearly a decade of testing and evolution of its land-based progenitor, the aircraft is still some time away from reaching operational status. This aircraft is expected to compliment Shenyang J-15, the current carrier launched fighter of PLAN.

2. **KJ-600 Carrier-Capable Airborne Early Warning (AEW) Aircraft.** Analysis of commercial satellite imagery captured on 2 October indicates that China is advancing the development of the KJ-600 carrier-capable airborne early warning (AEW) aircraft. The aircraft has been seen undergoing flight tests. They are expected to operate from Type-003 Aircraft Carriers that is expected to be equipped with CATOBAR (catapult assisted take-off but arrested recovery).
3. **WJ-700 UAV.** Images of a new indigenously developed (by the state-owned CASIC) Chinese medium/high-altitude long endurance (MALE/HALE) UAV has been circulating in Chinese social media from mid-August. Its first flight was conducted in January and its ability to work with other drones has been highlighted on state television. Specifications released by CASIC in 2018 stated that the turbojet-powered WJ-700 has a maximum take-off weight (MTOW) of 3,500 kg and a stated endurance of up to 20 hours. The WJ-700 adopts a conventional monoplane design with an aerodynamically streamlined fuselage measuring about 9-10 m long that supports a retractable tricycle undercarriage.
4. **FK-2000 Self-Propelled Air-Defence System.** China Aerospace Science and Industry Corporation (CASIC), a Chinese state-owned enterprise that is the largest producer of Chinese missile systems, unveiled its FK-2000 self-propelled air-defence system during the Air show China 2021 exhibition held from 28 September to 3 October in Zhuhai. FK-2000 short-range surface-to-air missile (SAM) system appears to have been derived from Russia's Pantsir family. As per the details provided, the system is capable of engaging aircraft at ranges from 1.2 km to 25 km, and at altitudes ranging from 15 m to 12 km. It is also capable of engaging precision-guided munition (PGM) targets, such as air-to-surface weapons or cruise missiles, at ranges from 1.2 km to 10 km, and at altitudes from 15 m to 8 km.