

# The C-27J

## battlefield airlifter

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In December 2016, Defence declared Initial Operating Capability (IOC) for the C-27J Spartan battlefield airlifter. While ostensibly the replacement for the DHC-4 Caribou, the C-27J represents a quantum leap in Air Force capability to deliver tactical air power effects.

Unlike the Caribou, the Spartan has the ability to operate in the modern integrated battlespace, carrying larger loads further while mitigating threats through a combination of increased performance, a modern Electronic Warfare Self Protection (EWSP) suite, and battlefield situational awareness equipment. Moreover, its powerful Rolls Royce AE2100 engines and weather/ground-mapping radar allow it to operate in all weather and uncontrolled airspace environments, increasing mission assuredness and reach.



*Credit: Department of Defence*

The decision to acquire the Spartan marked the culmination of a series of projects whose genesis lay in a 1978 study to identify a potential replacement for the Caribou. The

study concluded that no viable alternative existed at the time, a conclusion which was also drawn by the government in 1986 when direction was given to replace the Caribou no later than 1990. By 1990, the field of primary contenders had grown to three: the CASA C-295M, CASA CN-235-300M and C-27J Spartan. Although the Spartan was deemed to present the best value for money, the aircraft was still under development and was unaffordable within the constraints of the approved budget.

An ideal opportunity to reinvigorate efforts to replace the Caribou was presented in 2007, when the United States (US) Government decided to procure the C-27J to fulfil its Joint Cargo Aircraft (JCA) requirement. The Australian Government subsequently made the decision in April 2012 to purchase 10 C-27J (JCA variant) aircraft from the US Government through a Foreign Military Sale (FMS) purchase. While the US Government subsequently divested itself of the majority of Spartans following a period of budgetary pressures, a small number still remain in service with the United States Coast Guard and US Army Special Operations Command.

The C-27J is the latest iteration of the Fiat Aviazione G.222, and is manufactured by Leonardo Aircraft Division of Italy. The Italian-built aircraft were flown to the US for additional modifications prior to delivery to the RAAF. Although it bears a passing

resemblance to the C-130J Hercules, and shares common avionics architecture and engines, the C-27J stands alone in its ability to bridge the gap between the ADF's rotary wing assets and medium-sized air-mobility aircraft. The C-27J's reduced footprint on pavement areas, compared with the C-130J, allows it to access many more landing surfaces across the globe. While its Short Take Off and Landing (STOL) capability cannot match that of rotary-wing assets, the C-27J has a vastly increased cargo carrying capacity over a much greater range, which can reach in excess of 2000 nautical miles.

A key strength of the C-27J is its versatility. While it possesses many of the features of a conventional air mobility asset, including the Brooks and Perkins Cargo Handling System – common with the C-130J – the Spartan has also proved its ability to execute a variety of missions in foreign air force service. The Italian Air Force (ItAF) has been particularly innovative in exploiting the aircraft's capability of disrupting the traditional role of a battlefield airlifter. Through use of modular 'roll-on, roll-off' components, the ItAF has fielded the Spartan in EC-27J Jedi (electronic warfare) and AC-27J Stinger II (gunship) variants. Also under development is an MC-27J variant that is designed to provide discrete intelligence, surveillance and reconnaissance, and fire-support effects, to the battlespace. Notably, all these capabilities are readily removed, quickly converting the aircraft back into a traditional air-mobility asset.

This combination of versatility and performance should prompt a rethink in the command and control (C2) arrangements of RAAF aircraft in the fifth-generation battlespace. The agility and broad scope of capabilities presented by this aircraft will need to be reflected by an equally responsive C2 framework, within which the aircraft can

be quickly and efficiently transitioned between commanders for tasking within the battlespace. In Air Force experience thus far, the C-27J has demonstrated a range of attributes and capabilities that make it uniquely attractive in supporting Army battlespace effects; assigning it to traditional 'hub and spoke' air mobility missions would under-utilise this versatility. Ideally, the C-27J could blend air mobility missions with responsive and direct support to land forces, and possibly combine both into the execution of a single mission.

Although officially designated as a battlefield airlifter, the Spartan's versatility extends to peacetime use, particularly in the Humanitarian Assistance/Disaster Relief (HA/DR) and Defence Aid to the Civil Community (DACC) roles. Here again, the C-27J's low footprint will allow access to austere airstrips close to the point of need, reducing or even eliminating the need to 'hub and spoke' and cross load cargo at larger regional centres, as is often necessary with the C-130J and C-17A. The increased capacity for timely direct delivery will greatly increase the ADF's ability to support HA/DR and DACC tasking.

In the aeromedical evacuation role, the C-27J can access emergency airstrips and load up to 21 stretcher patients per lift. Moreover, the Spartan, with its superior reach, could deliver the patients directly to the most appropriate medical facility, reducing the time and trauma involved in transfers at regional airports. The combination of accessibility, lift capacity and reach is far in excess of that offered by rotary wing assets, and with a cargo compartment capable of fitting three full-size 463L pallets and one half ramp pallet, the Spartan represents a significant increase in light tactical transport capability to that offered by the Caribou.

As experience with the C-27J grows in RAAF service, its potential builds. While all RAAF air mobility assets possess multirole capability, none share the Spartan's ability to combine accessibility, range and versatility, traits that combine to make this an exciting platform with vast potential in ADF service.

- *Defence declared IOC for the C-27J in December 2016.*
- *The C-27J bridges the capability gap between the ADF's rotary-wing assets and medium-sized air mobility aircraft.*
- *The C-27J's versatility makes it suitable for a range of air mobility tasks, including air logistic support to the joint force, HA/DR, DACC tasking and aeromedical evacuation.*

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