

Lightning Grounds F-35 in Australia As Promised Fix Not Implemented

Defense-aerospace

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PARIS - The Royal Australian Air Force (RAAF) on Saturday grounded two Lockheed F-35A Lightning II fighters attending the Avalon air show because of thunderstorms, preventing them from flying on the shows' last day and delaying their return flight to the United States for 24 hours.

"It is well documented that the F-35A aircraft requires modifications for lightning protection and these modifications have not yet been completed on the two visiting Australian aircraft," the RAAF said in a March 4 statement posted on its website.

The grounding is as significant as it is unexpected because it shows the F-35 remains vulnerable to lightning two years after the program executive told Congress the issue was fixed.

During an April 16, 2015 hearing, Lt Gen. Christopher Bogdan, the head of the F-35 Joint Program Office, told the House Armed Services Committee that "We had a problem with lightning....We were having a problem qualifying the airplane to fly in lightning, (but) that problem is basically behind us."

That is clearly not the case, as the Royal Australian Air Force makes clear: "As safety is Air Force's priority, the aircraft will not fly in conditions where lightning is present." The JPO has not responded to a request for comment e-mailed on Sunday.





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Due to bad weather in Amberley, Queensland, our F-35As will now depart Avalon on Monday, 6 March. More info at:

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Adverse to adverse weather

The F-35's continued inability to fly near thunderstorms, like its inability to take off in fog that was revealed during its six-day ferry flight to Israel in December, shows it is still severely limited in adverse-weather operations, 16 years into its development and 11 years since its first flight.

It also contradicts recent statements by senior Australian ministers, including Prime Minister Malcolm Turnbull, who for example claimed "The F-35A is the most advanced fighter in the world," while Defence Minister Senator Marise Payne said "The F-35A will provide the Air Force with the ability to execute air combat missions which were previously beyond our scope."

The Lightning can't cope with lightning

The F-35's vulnerability to lightning strike has been publicly known since 2010, but had fallen off critics' radar screens since the chief of the F-35 Joint Program Office told Congress in 2015 that it had been fixed.

In this respect, it is interesting to note that the two Australian aircraft that took part in the Avalon air show were built in July 2014, at least five years after the lightning issue became public, and have still not been fixed seven years later.

In his annual report for FY2010, the Pentagon's then Director of Operational Test & Evaluation, Dr. J. Michael Gilmore, first revealed that a design fault in the F-35's fuel tank could cause it to explode if the aircraft was struck by lightning. The On-Board Inert Gas Generations System (OBIGGS) tested during FY09-FY10 "fails to inert the fuel tank ullage spaces throughout the combat flight envelopes evaluated," Gilmore reported.

This led to the aircraft being prohibited from flying within 25 miles of thunderstorms until the fault was fixed. The issue is tied to a fault in the OBIGGS, which removes oxygen from the explosive vapor inside the fuel tank system which would otherwise explode if lightning strikes.

In his FY2012 Report, Gilmore said "Tests of the fuel tank inerting system in 2009 identified deficiencies in maintaining the required lower fuel tank oxygen levels to prevent fuel tank explosions," and confirmed that the restrictions were still in place: "As a result of the

related OBIGGS and tank venting deficiencies, flight operations are currently not permitted within 25 miles of known lightning conditions.”

This was again repeated in his FY2013 Report, when Gilmore said “The program still needs to complete lightning tolerance qualification testing for remaining components and current injection tests, before lifting current restrictions preventing aircraft operations within 25 miles of known lightning.”

Obviously, these qualification tests have still not been carried out, seven years after the issue was discovered.

For F-35, ownership is not control

This incident also graphically illustrates that while F-35 customers may own their aircraft, operational control remains with the United States. This paradoxical situation is explained in the RAAF statement:

“While the visiting F-35A aircraft belong to Australia, they are currently placed within a training pool in the United States and the specific movements of the aircraft are authorised by the United States.

Authorisation has been given for the aircraft to ferry to RAAF Base Amberley, from RAAF Base Amberley to Avalon, and then return from Avalon to RAAF Base Amberley before returning to the United States. Following a late notice request by the Royal Australian Air Force, the USAF supported and approved an Avalon to Avalon event yesterday.

Approval to fly at Avalon on Sunday was not requested by the Royal Australian Air Force and, therefore, with the weather events in Amberley, we are unfortunately unable to seek that authorisation.

Status of Australian F-35 program

The two F-35As (serial n° AU-1 and AU-2) exhibited at the Avalon show rolled off Lockheed Martin’s production line in Ft Worth, Texas, in July 2014, and five months later, on Dec. 18, landed at Luke air force base, in Arizona, to join the multinational F-35 training pool based there.

Australia plans to buy 72 F-35s at a total cost of A\$16,738 million – or A\$232.5 million each – but has only ordered 8 more to date, with another 14 approved but not ordered.

The next order, also for 8 aircraft, is expected as part of the Low Rate Initial Production Lot 11 contract, which should be awarded during the second half of 2017.

The first operational aircraft are due to arrive in Australia in 2018, and the Royal Australian Air Force plans to declare their Initial Operational Capability in December 2020 -- 14 years after Australia first selected the F-35.