

# F-35 JSF

Australia's  
Next Generation  
Air Power

## DMO



### Australian Government Department of Defence Defence Materiel Organisation

*"The Australian Government has decided that it will acquire around 100 F-35 JSF, along with supporting systems and weapons."*

**Defence White Paper 2009**  
May 2009

*"We've done more analysis on this aircraft than any other platform in the acquisition history of the Australian Defence Force, ...it's the best multi-role aircraft in the world, it can cover the spectrum and will be a good aircraft for us..."*

**Chief of Air Force, Air Marshal Mark Binskin,**  
March 2009

## THE AIR COMBAT CAPABILITY REVIEW FOUND THAT:

- A potent and flexible air combat capability is a cornerstone of Australia's defence posture.
- A fleet of around 100 fifth generation multi-role combat aircraft would provide Australia with the necessary capability to 2030 and that the F-35 is the preferred platform.
- The transition of Australia's air combat capability to fifth generation air combat aircraft technology, will enable the Royal Australian Air Force to maintain regional air combat superiority and a significantly enhanced ability to contribute to regional and global security if needed.
- Other combat aircraft considered by the Review were less capable to meet Australia's multi-role air combat capability requirements.
- The F-35 has the flexibility and growth potential to meet Australia's current and future needs.
- The F-35 represents value for money for the Australian taxpayer.

**The Defence White Paper 2009** considered the mix of military capabilities needed to ensure the security of our nation and to protect our strategic interests. This included the F-35 and the broader air combat system provided by the KC-30A Multi-Role Tanker Transport and Wedgetail Airborne Early Warning & Control aircraft. Separate projects will be undertaken to deliver state of the art air-to-air, air-to-surface and maritime strike weapons to complete the capability that will be delivered by Australia's F-35s.

**The first stage of Australia's acquisition** will be to acquire no fewer than 72 F-35s, to provide three operational squadrons and a training unit. Government Second Pass approval for the first stage of acquisition is scheduled for later in 2009 at which time the detailed delivery schedule will be considered.

**Acquisition of the fourth operational squadron** of F-35s will be made at a later date in conjunction with a decision on the timing of the withdrawal of the 24 F/A-18F Block II Super Hornet bridging air combat fleet.

**Australia's future air combat capability** will therefore be based on four operational F-35 squadrons.

## THE JSF PROGRAM

**The F-35 JSF** is a fifth-generation, stealthy, multi-role fighter being developed for the U.S. and eight international partner nations, including Australia. Three variants are being produced, albeit with a very high level of commonality: the Australia-preferred Conventional Take-Off & Landing (CTOL) variant, a Short Take-Off & Vertical Landing (STOVL) variant and a Carrier Variant (CV).

The F-35 is characterised by a low observability design, internal weapons and fuel carriage, advanced radar, electro-optical and infrared sensors, advanced voice and data link communications, long range, the ability to employ a wide range of air-to-surface and air-to-air weapons, state of the art prognostics and health management, the largest ever single engine for a fighter aircraft and radically reduced support requirements.

# PROGRAM CHARACTERISTICS

## Overview

<b>JSF Program value</b>	Approximately US\$300b for US development and acquisition alone
<b>Total planned orders</b>	Approximately 2600 (US and UK).
<b>Potential additional orders</b>	In excess of 1000 (approx 600 to existing international SDD Partners)
<b>First CTOL aircraft flight</b>	15 Dec 2006
<b>First STOVL aircraft flight</b>	11 Jun 2008
<b>First production aircraft (delivery)</b>	(USAF) 2009/10
<b>Initial Operational Capability</b>	2012 (STOVL USMC) & 2013 (CTOL USAF)

## System Development and Demonstration Phase

<b>Commencement date</b>	Oct 2001
<b>Duration</b>	13 years
<b>SDD phase value</b>	In excess of US\$40b
<b>Activities</b>	System development, production of 19 test aircraft, capability demonstration, support system and supply chain development and risk reduction

## Production, Sustainment and Follow-On Development Phase

<b>Commencement date</b>	2007
<b>Duration</b>	Life of Type (40 years +)
<b>Activities</b>	<ul style="list-style-type: none"><li>• Full Rate Production for Partners and Foreign Military Sales customers, commencing around 2010</li><li>• Sustainment of the total fleet on a global basis</li><li>• Block upgrades of air systems expected on a two-year cycle</li></ul>

## Aircraft Characteristics (CTOL Variant)

<b>Empty weight</b>	Approximately 12,250 kg (27,000 lbs)
<b>Internal fuel</b>	Over 8,200 kg (18,000 lbs)
<b>Payload</b>	Over 7,250 kg (16,000 lbs)
<b>Maximum take-off weight</b>	In excess of 22,700 kg (50,000 lbs)
<b>Length</b>	15.6 m (51 ft)
<b>Wing span</b>	10.7 m (35 ft)
<b>Wing area</b>	Approximately 41.4 sq m (460 sq ft)
<b>Speed</b>	Supersonic
<b>Combat radius (internal fuel and weapons)</b>	Over 1,100 km (590 nautical miles)
<b>Crew</b>	One
<b>Weapons</b>	A wide selection of US and UK air-to-air and air-to-ground weapons including AMRAAM, JDAM, SDB, laser-guided bombs and an internally mounted 25 mm gun

## CUSTOMER BASE AND REQUIREMENTS

The F-35 is the first international collaborative development program for a U.S. combat aircraft. The JSF Program is expected to deliver about 2,600 aircraft to the U.S. and UK alone and a further 1000+ aircraft to the other international partners and future third party customers.

Australia joined the System Development & Demonstration phase in October 2002 and subsequently joined the Production, Sustainment & Follow-On Development phase in December 2006.

Lockheed Martin is the prime contractor and its partners are Northrop Grumman and BAE SYSTEMS (UK). F-35 aircraft will be powered by the Pratt & Whitney (F135) or the alternate General Electric/Rolls Royce (F136) engine.

## DSTO SUPPORT

The Defence Science and Technology Organisation provides direct support to the AIR6000 New Air Combat Capability Project by supporting Defence and Government decision making (e.g. technical risk analysis on the air vehicle, mission systems, weapon systems, operational analysis).

## AUSTRALIAN INDUSTRY PARTICIPATION

Australia's partnership in the JSF Program has provided Australian industry the opportunity to become part of the F-35 global supply and support chain by competing for F-35 work, years before Australia will operate F-35 aircraft. By May 2009, 25 Australian companies had won contracts worth approximately A\$220 million with considerably more in prospect, including in the longer term sustainment of the Australian F-35 fleet.

## MORE INFORMATION

**Official Defence JSF**  
**JSF Industry Team**  
**F-35 JSF Program**  
**Lockheed Martin**

[www.defence.gov.au/JSF](http://www.defence.gov.au/JSF)  
[www.industry.gov.au/jsf](http://www.industry.gov.au/jsf)  
[www.jsf.mil](http://www.jsf.mil) or [www.teamjsf.com](http://www.teamjsf.com)  
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