

# Directory: military aircraft

## LOCKHEED MARTIN ALLENIA TACTICAL TRANSPORT SYSTEMS

Aircraft	C-27J Spartan II
Mission	tactical transport
Powerplant	2 x R-R AE2100D2
Max power (shp)	4,645
Wing span (m)	28.7
Wing area (m <sup>2</sup> )	82
Length (m)	22.7
OEW (kg)	17,500
MTOW (kg)	30,500
Max load (kg)	9,000
Range (km)	5,560
Endurance (h)	9.2h
Hardpoints	4
Cruise (kt)	-
M <sub>mo</sub>	M0.64
Ceiling (ft)	30,000
Crew/passengers	2/46
Internal fuel (kg)	9,400
Fuel, opt ext	1,000kg
Air refuel?	Yes

remanufactured aircraft, are scheduled to be delivered to the Argentinian air force by June 2005.

LMAASA is to equip the Pampa with the Lockheed Martin APG-67(V)4 radar. The decision to fit the multimode radar followed input from at least one prospective customer – probably Colombia – and is intended to create a light attack variant with air-to-air and air-to-ground capabilities. Minor modifications are required to accommodate the radar's 0.25m antenna.

Two "next generation" AT-63s with the baseline upgrades entered assembly at LMAASA's Cordoba site in 2002, but Argentina's financial problems have slowed the programme. Export Pampas are likely to be fitted with three MFDs rather than the one specified by Argentina. Future options include a more powerful Honeywell TFE731-41R.

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Lockheed Martin Aeronautics, PO Box 748, Fort Worth, Texas 76101, USA. Tel +1 (817) 777 2000; fax +1 (817) 763 4797.

### C-27J Spartan II

The C-27J has been developed as an Alenia/Lockheed Martin joint venture, using systems from the C-130J to update the G222 twin-turboprop transport. First flight from Alenia's Turin factory was in September 1999. New features include Honeywell avionics and R-R AE2100 engines driving Dowty six-bladed propellers.

Civil certification was received in 2001 with military clearance following in December that year. The first of 12 deliveries to the Italian air force is due at the end of 2003 after protracted contract negotiations delayed a deal. Alenia has reduced the C-27J's cost by around 30% through process and manufacturing changes.

## LOCKHEED MARTIN/BOEING

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### F/A-22 Raptor

Procurement of the F/A-22 (the aircraft was renamed from F-22 in 2002) stealth fighter continues to face hurdles. US Congress stipulated key milestones to be achieved before production was approved, some of which were not completed until early 2001. Production was approved, but by then the incoming Bush administration had launched a major defence review, which cut production numbers to 295 – although this can be increased to 339 if costs can be reduced. The number of F/A-22s to be bought had already been cut from 442. Cost overruns have been a problem, with USAF and Lockheed Martin programme management changes implemented and the former raised the spectre of cancellation in late 2002. However, the first F/A-22 production representative test vehicle was flown on 16 September 2002.

The first development F-22 flew on 7 September 1997. The Raptor has demonstrated "supercruise" – sustaining speeds exceeding Mach 1.5 without afterburner – operation at 55,000ft and use of thrust vectoring at high angles of attack.

In 2002 Lockheed Martin delivered Raptors 08, 09, 10 and 11, which will be used for dedicated initial operational test & evaluation (DIOT&E) phase, due to begin in the third quarter of 2003.

During DIOT&E, four F/A-22s will be flown by USAF test and operational pilots to determine its suitability for operations.

Plans call for the Raptor to enter service at the end of 2005 and an air-superiority aircraft with a secondary air-to-ground capability is planned. The basic Block 4 aircraft will be able to carry two 450kg JDAMs internally. Multirole capabil-

## MITSUBISHI

Aircraft	F-2A
Mission	Fighter/attack
Powerplant	1 x GE F110-129
Max thrust dry (lb)/wet (lb)	17,200/29,000
Wing span (m)	11.13
Wing area (m <sup>2</sup> )	34.84
Length (m)	15.52
OEW (kg)	12,000
MTOW (kg)	22,100
Max load (kg)	9,000
Range (km)	-
Endurance (h)	-
Hardpoints	13
Cruise (kt)	-
M <sub>mo</sub>	M2
Ceiling (ft)	50,000
Crew	1
Internal fuel (kg)	3,842
Fuel, opt ext (litre)	5,677
Air refuel?	Yes

## LOCKHEED MARTIN/BOEING

Aircraft	F-22A Raptor
Mission	Air superiority
Powerplant	2 x P&W F119-100
Max thrust wet (lb)	35,438
Wing span (m)	13.56
Wing area (m <sup>2</sup> )	78
Length (m)	18.92
OEW (kg)	14,515
MTOW (kg)	24,950
Max load (kg)	9,080
Range fuel (km)	>3,220
Endurance (h)	-
Hardpoints	4
Cruise (kt)	supercruise
M <sub>mo</sub>	M2
Ceiling (ft)	50,000
Crew/passengers	1
Internal fuel (kg)	-
Fuel, opt ext (litre)	9,096
Air refuel?	Yes

ity is expected to be expanded, beginning with the Block 5 aircraft, set for delivery from 2006. The F-22's main internal armament is four or six AIM-120 medium-range AAMs, two AIM-9 short-range AAMs and a 20mm cannon.

A two-seat FB-22 has been proposed with three times the F/A-22's range. The USAF does not have a stated requirement for the aircraft, which would cost \$5-7 billion to develop. Principal changes focus on a fuselage stretch to accommodate a larger weapons bay. A delta wing would increase fuel volume, with a W-shaped trailing-edge for stealth. The avionics and weapons system would retain a high degree of commonality with the F/A-22. It could be powered by the GE F110-139, a P&W F119 derivative or the JSF's F135, and possibly the GE F136. Engines would have low-observable axisymmetric thrust-vectoring nozzles, rather than the F-22's two-dimensional vectoring nozzles.

## LOCKHEED MARTIN/NORTHROP GRUMMAN/BAE SYSTEMS (SEE TABLE P57)

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### F-35 Joint Strike Fighter

Lockheed Martin, with partners Northrop Grumman and BAE Systems, was selected for the 126-month, \$19 billion JSF systems development and demonstration phase in October 2001. P&W received a \$6 billion contract for development of the F135 engine. Development will involve 14 aircraft in three variants: conventional take-off and landing for the USAF; carrier version for the USN; and short take-off and vertical landing for the USMC and UK RAF and Royal Navy.

First flight is scheduled for 2006. Production deliveries are due to start in 2008. Present planning calls for the USA and UK to take 3,002 JSFs. Lockheed Martin has also proposed an elec-