

DEFENCE

BAE Systems strikes to gets Lightning II contract

BAE Systems has been awarded a contract to begin procurement of high-demand and long-lead materials for the first five F35A Joint Strike Fighter (JSF) aircraft - Lightning II

The contract, from the US Department of Defense and Lockheed Martin, covers items for the initial Low Rate Initial Production batch of conventional take-off and landing (CTOL) aircraft.

Lightning II is a stealthy tactical fighter aircraft designed to replace a wide range of existing aircraft with a number of customer air forces.

The UK is buying the STOVL F-35B variant, and will use the aircraft to replace Harrier GR7s and recently retired Sea Harriers.

The programme is currently in its System Design and Development (SDD) phase, which will see the production of 23 test aircraft, 15 of them undergoing flight test, seven for static testing and one for validation of the aircraft's radar signature.

The first preproduction conventional take-off and landing variant was rolled out on July 7, when it was officially renamed as the Lightning II.

Construction of this aircraft began before the F-35 ran into weight problems, and it is thus structurally different to the remaining SDD, LRIP and production aircraft, with heavier hard mate joints and a more expensive one-piece upper wing skin.

Prototype

Lockheed decided to complete the aircraft in order to obtain a flying prototype which could be used to start testing mission systems and derisking the programme. It will make its maiden flight this autumn.

As the sole Tier 1 JSF partner, BAE Systems enjoys a substantial share of the F-35 programme, and is responsible for the design, manufacture and assembly of the aft fuselage and vertical and horizontal tails, and for the crew escape system, the life support system, the fuel system and for integration of the prognostics health management system.

Manufacturing of the first production aircraft is expected to start at Samlesbury, Lancashire, in October 2007. First deliveries to partner Lockheed Martin's final assembly line in Fort Worth will occur in September 2008.

Smiths details swelling order book

Smiths Aerospace has used Farnborough to release details of a host of orders and developments.

The company has completed 'safety of flight testing' for the Standby Flight Display and Remote Input/Output equipment for the Lockheed Martin F-35 Lightning II, with final flight certification due by the end of this month. "We are delighted to help bring the F-35 closer to achieving the first flight milestone toward the end of this year," says Dr John Ferrie, president, Smiths Aerospace.

Aerial refuelling systems have been delivered to Boeing for its KC-767 Global Tanker Transport Aircraft.

Drum

Smiths provides both the centreline hose drum unit and wing pod hose and drogue refuelling systems. It also supplies a range of other equipment for the aircraft, including the mission management system.

The Canadian Armed Forces' 28 new Sikorsky CH-148 Cyclone maritime helicopters will be supplied with a Smiths integrated blade fold and pin puller actuator sub-system, with first deliveries due in the third quarter of 2007.

Smiths has been selected to demonstrate its Health Usage & Monitoring System (HUMS) on the US Army's MH-47G special operations variant of the Boeing Chinook.

And Smiths Aerospace Components Poland has signed a \$50 million agreement with WSK Rzeszow for complex machined engine components over the next decade.

Gripen's new models target new customers

Jon Lake

Gripen International has unveiled a model of a prospective 'Super Gripen' at Farnborough.

Though the company has been studying ideas for an advanced version of the aircraft for many years, the effort expended on Super Gripens has intensified recently.

This is a result of Swedish air force suggestions for future Gripen activity, and also in response to the requests for information (RFI) issued by two F-35 Joint Strike Fighter (JSF) partner nations, who are actively seeking information on alternatives to the JSF.

The Gripen has been progressively developed since the original A model entered service, with customer requirements for improved capabilities leading to the JAS 39C, which gained in-flight refuelling capability, an improved cockpit, Link 16, a fully integrated electronic warfare system, a helmet-mounted display, and increased maximum take-off weight (MTOW).

With a clear requirement for further improvements for any Gripen entering service late in the next decade, the present effort to offer new variants was launched.

Any new Super Gripen is likely to feature a further increase in MTOW, with increased range, increased thrust, extra weapons stations (including side-by-side pylons below the belly) and wider weapons compatibility.



Above: Bob Kemp with the new Gripen N.

Right: Lieutenant General Carlo Gagliano of South Africa, Major General Jan Andersson of Sweden and Major General Sagi Janos of Hungary link hands on the Gripen stand.



The Gripen already has potential for significantly increased internal fuel tankage, and further volume could be leveraged by using a new Tornado-style main undercarriage. A new Gripen will also incorporate a host of systems improvements, including AESA radar, anIRST, a full capability helmet-mounted display, and further improved EW and network

centric capabilities, as well as satellite communications equipment. The new variant will also offer lower lifecycle costs.

Bob Kemp, Gripen International's senior vice-president for International Sales and Marketing, emphasised that while JSF customers will receive an export version of the aircraft, and while Typhoon customers will receive

exactly the same aircraft as every other Typhoon operator, Gripen is unique in offering a variant tailored to the individual customer's needs.

Both Norway and Denmark have issued RFIs for a replacement for their ageing Lockheed Martin F-16s, with an estimated requirement for 48 aircraft in each country, for service from 2016.

OPERATORS MEET TO COMPARE NOTES

Three nations currently operating the Saab JAS 39 Gripen formally constituted a co-operation forum, the Gripen Users' Group, at Farnborough on Tuesday, when the Air Chiefs from Hungary, South Africa and Sweden met during a scheduled meeting with Gripen International.

The group will allow current and future operators of the Gripen to enjoy a closer collaboration in operational, tactical and technical aspects. South Africa only recently received its first aircraft, and will not start operating the type until 2009. The Czech Republic, already a satisfied customer, is expected to join the group later.

In a deliberate effort to address perceived problems with the JSF programme, Gripen has promised access to all levels of technology, easy integration of the widest possible range of European, US, Israeli and even former Soviet bloc weapons, and has emphasised that the advanced Gripen represents a low-risk solution with a funded development programme.

DEFENCE

Boeing takes UK Chinooks into global family

Boeing regards its Through Life Customer Support (TLCS) programme for RAF Chinook helicopter fleets as its "entrée into performance-based logistics, and a flagship for what the company can do", says Pat Finneran, president of Boeing IDS Support Systems.

"TLCS will guarantee maximum readiness at the lowest possible cost, and will generate \$295 million in savings for the UK MoD."

Conforming to the UK DLO's vision for output-based programmes, TLCS is an incentivised, performance-based PFI contract, which promises to reduce support costs for the RAF's 40 Chinook HC2s and HC2As, while improving performance and availability.

Surge

Boeing guarantees a 40% surge capability (sufficient to meet 99% of historic requirements) and will impose no limitations on how the aircraft are operated, either from ships, or on deployed operations.

Boeing assumed responsibility for logistics support on 22 May 2006, and is now working toward taking over control of the supply chain, operating in partnership with the Defence Aviation Repair Agency (DARA). Engines, UK-common avionics and new aircraft are presently excluded from the contract, which is worth \$360 million in the first five years, but there is provision for these to be brought into the contract.

Global Hawk proves high-altitude capabilities

Northrop Grumman yesterday released the results of a Congress-mandated demonstration of the capabilities of its RQ-4A Global Hawk high-altitude, long-endurance unmanned air vehicle (UAV).

The imagery, from three missions lasting up to 26h above the Gulf of Mexico and Caribbean, was taken in February and March but was only cleared for release on Monday. Among the images shown yesterday – not available at sufficient resolution for reproduction here – were electro-optical pictures of San Diego and



US Navy vessels taken from 115nm (213km) distance.

The Block 10 US Navy Global Hawks used in the demonstration differed

from their US Air Force counterparts only in the maritime modes in their sensors: the ground moving target indicator, for

example, which normally tracks vehicles moving against a stationary land background, was instead commanded to look for stationary or slowly moving objects against the constantly-moving background of the sea.

Global Hawk, which has suffered from rising costs, was restructured by the US Department of Defense last month. The overhaul leaves intact the number of air vehicles planned for the US Air Force – 54 – but holds down the production rate until operational testing is completed.

Ed Walby, Northrop Grumman's director, business development, HALE systems, said yesterday that while a Global Hawk might appear expensive – he described the figure of \$27 million as a "snapshot" – the number of less capable medium-altitude UAVs needed to handle the same size of task as a single RQ-4 was roughly the same, if not more.

Northrop Grumman had hoped to fly a Global Hawk at Farnborough and airspace 'boxes' had been agreed, but a lack of available aircraft meant the plan was scrapped a few weeks ago.

UAV system offers 'launch and leave'

BAE Systems (Outside OE14) says it has completed tests to rail-launch its High Endurance Rapid Technology Insertion (HERTI) autonomous UAV, paving the way for that system to be offered to customers.

BAE is using Farnborough to show the HERTI system with ground station to the public for the first time.

The rail-launch testing was completed at Warton, north-west England, the company said on Monday at the show.

HERTI is described as a next-generation UAV that can take off, complete a full mission and land autonomously at the click of a mouse. It has completed the only fully autonomous flight by a UAV in UK airspace with Civil Aviation Authority (CAA) clearance.

The system is the company's chosen vehicle for migrating key technologies from its secret military UAV programmes into an aircraft with dual civilian



Andy Wilson, BAE Systems director of sales, with HERTI.

and military applications. It has a radius of action of 1,500km (800nm) and can fly for 24h.

As well as serving as a potential replacement for some manned platforms, BAE says the HERTI will have new applications such as the sort of pipeline inspections now carried out by ground-based teams in

4x4 vehicles, and for coast guard, fishery protection and border patrol duties.

The mid-priced UAV offers genuinely autonomous operation, able to search for, locate, identify and film targets without input from the ground. The principle of the system is that the operator sets the UAV's mission

parameters and HERTI carries it out without further guidance. For example, for border patrol application, once the onboard system is set to look for intruders, the operator does not need to monitor the UAV, as it can sound an alarm at the ground control station if intruders are detected.

Saab details Pakistan AEW contract

Saab has revealed details of the AEW contract signed with Pakistan on 3 July. The SEK 8.3bn (\$1.12bn) contract covers the supply of six Saab 2000 aircraft equipped with Ericsson Erieye radar, together with ground stations and some training and support.

The new Pakistani aircraft will be similar to the GE-CT7-98 powered, Saab 340-based Argus AEW&C aircraft used by the Swedish air force, with the same Erieye radar mounted on the larger, Allison/Rolls-Royce AE2100-powered Saab 2000 airframe.

Pakistan reportedly considered the Embraer EMB-145SA, but decided that this would lack the hot and high performance required. With two AE2100 engines, the Saab 2000 has respectable hot and high performance, and can remain airborne for more than nine hours at 30,000ft.

Because the Saab 2000 line has closed, the aircraft will be existing airline Saab 2000s, bought back from regional operators before refurbishing and comprehensive upgrade and modification work.



The first flight of the Little Bird in unmanned mode is a major boost for the programme.

Little Bird makes first pilotless flight

Boeing's Unmanned Little Bird (ULB) technology demonstrator programme has taken a significant step forward with the aircraft's first unmanned flight. Boeing demonstrated the capability at the US Army's proving ground in Yuma, Arizona where the aircraft lifted off from a helipad, hovered briefly and flew a programmed armed intelligence, surveillance and reconnaissance mission.

The ULB was airborne for 20 minutes and following the mission

the aircraft returned to the helipad and landed within six inches of the planned recovery location.

"Expansion of the flight envelope to include true unmanned flight is a major milestone for the programme and opens doors to a wide range of applications for the aircraft," says Dino Cerchie, advanced systems programme manager for the ULB demonstrator and the A/MH-6X Little Bird programmes. "Previous autonomous demonstrations with this aircraft

have included target identification, precision re-supply, communication relay and weapons firings."

Boeing has tested the aircraft, a modified MD Helicopters MD 530F single-turbine helicopter, over the past two years with a safety pilot on board. Before the fully unmanned demonstration, the ULB had flown more than 450 hours of engineering flight test time as a rapid prototyping platform, developing and integrating the sensors and systems.