

## CFM adds Chile to upgrade kit buyers

Chile's Lan Airlines has placed a \$48 million order for CFM56-5C/P kits to upgrade the 18 installed and spare engines powering its fleet of Airbus A340-300 aircraft. Deliveries are scheduled to begin this month.

The CFM56-5C/P has been delivering better fuel burn and longer time on wing than the base CFM56-5C engine.

The production engine entered service with South African Airways in 2004 on the A340-300 Enhanced airliner and is currently powering 12 aircraft with South African and Swiss Airlines.

Customers have ordered a combined total of 38 upgrade kits, of which 34 have been delivered to date.

The CFM56-5C/P incorporates the advanced 3-D aerodynamic technology originally developed for the CFM56-5B/P powerplant for the A320 family, including the high-pressure compressor and high-pressure turbine design. Additional improvements have also been incorporated into the high-pressure turbine to enhance durability.

### Specific

Overall, the CFM56-5C/P provides operators with up to a 1% improvement in specific fuel consumption and up to an 18° C improvement in exhaust gas temperature (EGT). This added margin translates to savings of up to 10% in maintenance costs through longer time on wing.

Upgrade kits are installed at normal overhaul and include the compressor and high-pressure turbine, in addition to low-pressure turbine hardware. Upgraded engines are fully interchangeable and interchangeable with current engines and are virtually indistinguishable in the cockpit.

CFM completed back-to-back engine tests with an overhauled CFM56-5C engine to verify the benefits of the upgrade kit for current A340 operators.

The engine maintains the CFM56-5C noise signature, which is the quietest in its class. The CFM56-5C-powered A340 meets all current noise regulations with a cumulative margin of 23 EPNdB (effective perceived noise in decibels) versus the International Civil Aviation Organisation (ICAO) Stage 3 rule.

## Transatlantic accord on systems



Marion Blakey: "Regulations have to be co-ordinated."

FAA administrator Marion Blakey and European transport commissioner Jacques Barrot signed a memorandum of understanding at Farnborough on Tuesday covering cooperation on the development of future air traffic systems.

Blakey, attending Farnborough for the first time, makes clear she sees cooperation between the US NGATS and the European SESAR air traffic control modernisation programmes as crucial.

"There will be regulatory issues, and these need to be addressed early on. Everybody wants to avoid multiple boxes. Regulations have to be closely coordinated," she warns, pointing to the need to coordinate timetables for installing new equipment on aircraft.

### Priorities

She adds though, that both sides will have different priorities in certain areas. "We take a bit of a different approach to the Europeans. In part, this is due to the need in Europe to deal with air space blocks. They are very focussed on the air traffic. Our approach is one which also addresses airport infrastructure and security. We also have to deal with the military establishment. Ours is a broader portfolio."

She adds: "On both sides, many of the real differences are a phenomenon of geography. Europe is blessed with meteorological conditions which mean it doesn't get as many thunderstorms, certainly not to the degree that we do."

## Engine Alliance wins UPS order for A380s

Late yesterday afternoon (TUESDAY), the news broke at Farnborough that international freight company UPS has selected the General Electric/Pratt & Whitney Engine Alliance's GP7200 engines to power its fleet of Airbus A380 freighter aircraft.

UPS has ordered 40 engines and four spares.

This brings the Engine Alliance's share of the A380 engine market to 59% – and 100% for the freighter variant.

The UPS engine selection follows its 10 firm Airbus A380 aircraft orders. UPS also has options on 10 additional

A380 aircraft. Aircraft deliveries are scheduled to begin in 2009.

"The GP7200-powered A380s will play a critical role in our air network for years to come," says Bob Lekites, vice-president of airline operations at UPS.

### Powered

"We're counting on our GP7200-powered A380s to help UPS provide world class service to our global customers."

The GP7200 is derived from two of the most successful widebody engine programmes, the GE90 and the PW4000. It incorporates the latest proven

technologies and its customers benefit from more than 13 million hours of safe operation. Certified at 76,500lb (340kN) of thrust, the engine has the capability to produce more than 81,500lb (360kN) of thrust.

In addition to UPS, Air France, Emirates, FedEx, International Lease Finance Corporation and Korean Air have selected the GP7200 engine for their A380 fleets, resulting in firm orders for more than 360 engines valued at nearly \$5 billion.

The Engine Alliance is a 50/50 joint venture between GE and Pratt & Whitney.

## Russian twinjet targets A320, 737

As the world awaits the next moves in the A320/737 replacement chess game, Russia's Irkut Corporation (Hall 1, E8) is quietly promoting a single-aisle twinjet that could take on the Big Two.

The MS-21 is being developed by the Irkut-owned Yakovlev Design Bureau and the Ilyushin Aircraft Complex with \$210 million launch aid from the same government programme that supports the Superjet 100 (ex-RRJ).

The development cost of the MS-21 was originally estimated at \$460 million and certification set for 2008.



The current model of the MS-21 is set to be updated.

Yesterday Yakovlev chief designer Alexej Rakhimbayev said that launch had slipped to 2012-15.

Russia's Federal Civil Aviation Development Programme for 2015 estimates construction costs at \$600 million, of which

\$390 million is to be obtained by developers from non-budgetary sources.

"Our government is very much interested in the development of this project and it is in good condition," he said. "We must

only choose which sector of the market to focus on."

The potential market for the new jet is projected to be up to 400 for domestic use and 250 more for export before 2028.

Domestically the MS-21 aircraft would replace all models of Tupolev Tu-154B, Tu-154M and Yak-42, at an annual production rate of 30-36 machines.

The Chinese market is an obvious export target, but like the RRJ, the MS-21 could be priced as much as 15% cheaper than competitors such as the A320 and B737, offering greater fuel efficiency and passenger comfort.

## IAE to power Vietnam's A321s

Vietnam Airlines has selected International Aero Engines (IAE) V2500 engines to power 10 Airbus A321 aircraft in a deal valued at more than \$170 million, it was announced yesterday at Farnborough.

The airline already operates five V2500-powered A321s on major domestic routes between Hanoi and Ho Chi Minh City and on regional routes serving Hong Kong, Taipei, Bangkok and Singapore.

Speaking at the signing ceremony, Pham Van Nuoi, Vietnam Airlines executive vice president, technical, said: "We have operated V2500-powered A321s and the in-service performance of the engine has shown it to have high efficiency and reliability."

The 22,000-33,000lb (98-147kN) of thrust V2500-A5 is available in seven different thrust settings to power the Airbus A319, A320 and A321 family of aircraft as well as the A319 Corporate Jet.

## Air Caraïbes buys A330-300

Air Caraïbes has signed a contract with Airbus for the purchase of an additional A330-300 to cope with growth on its transatlantic routes, it was announced at Farnborough yesterday. The aircraft will be delivered in November 2008.

Air Caraïbes currently operates two leased A330-200s and one A330-300, which entered service two weeks ago. The additional A330-300, which will replace one of the smaller capacity A330-200s, will be fitted with 372 seats in a three-class layout, providing an additional 48 seats.

## Extra durability for Evergreen

Evergreen International Aviation has signed an agreement to buy Pratt & Whitney JT9D-7J durability kits for the airline's fleet of JT9D-powered Boeing 747 aircraft.

The agreement for eight kits is valued at \$9 million, with an option to purchase an additional 12 kits worth \$16 million. If all firm and optional kits are purchased, the total value of this order will exceed \$26 million and deliveries will begin in July 2006.

## IN BRIEF

## AIR TRANSPORT

**E-Jet makes home debut in Brazil**

Embraer has seen the first commercial operation of an E-Jet in its home market, with the inaugural Copa Airlines service between Panama and the Brazilian city of Manaus in mid-July.

The E-190 service will cut travel times by at least five hours for round trips between Manaus and Central America or northwest South America. Passengers were previously required to travel through either Miami or a backhaul connection via Sao Paulo.

"Our new E-190 service opens up new options for travellers to this region of Brazil with the right capacity for the market," says Copa chief executive Pedro Heilbron.

**Honeywell avionics, APUs for Air Deccan**

India's first low-cost airline, Air Deccan, has selected Honeywell to provide avionics and APUs for its fleet of 60 Airbus A320 aircraft.

As well as Honeywell's 131-9(A) APUs, the airline is buying a full avionics suite, including enhanced ground proximity warning; airborne collision avoidance; weather radar; solid state flight data recorder and cockpit voice recorder; quantum line communications and navigation; and air data inertial reference.

Deliveries begin this year and will continue through to 2011. Honeywell is also providing an APU maintenance service.

**P&W to power new Kingfisher A380 fleet**

Pratt & Whitney engines have been chosen by Kingfisher Airlines of India to power its new fleet of Airbus A330 aircraft.

The deal includes 10 PW4000-100 installed engines, one spare and an option for an additional 10 engines.

P&W was also awarded a long-term exclusive fleet management programme (FMP) to overhaul and repair Kingfisher's PW4000 engines. The total transaction is valued at \$300 million, plus an additional \$200 million if all options are exercised. The PW4000-100 engine was designed specifically for the Airbus A330 aircraft.

**Airbus gains long-awaited order from Libyan airline**

Libyan airline Afriqiyah Airways yesterday signed a Memorandum of Understanding (MoU) with Airbus for 12 aircraft and eight options costing a total of \$1.7 billion, marking a major step in normalisation of relations with the international community.

It will be the first new Western airliner order from Libya in 30 years following years of sanctions and international isolation which came to an end two years ago.

The MoU is for six A320s and three A319s, plus an option on five more of the type, as well as for three A330-200s, plus three options. It forms part of a wider agreement with Airbus parent company EADS covering several areas including maintenance and training.

A decision on the engine choice will be made "in the next couple of weeks", says Abdallah Sabri Shadi, chief executive of Afriqiyah Airways. Deliveries will run from 2007 through to 2009.

"These are the first aircraft since sanctions ended," said Shadi. "This is definitely a great moment for us in Afriqiyah Airways and for Libya. This is the first large aircraft order in the past 30 years after many years of embargoes and sanctions on Libya. It is a big boost to the new start in the aviation business in Libya. I think we will be seeing more orders coming from other new operators coming up."

The A320s and A319s will be used on the airline's growing international network, covering routes from its base at Tripoli to destinations in Africa, the

Middle East and key cities in Europe. The A320s will seat 150 passengers and the A319s 124, both in two-class configurations. The A330s will serve long-haul operations on routes to southern African, Asia and Europe and will have a three-class configuration of 253 seats.

Under the broader agreement with EADS, the European firm will help create a pilot and maintenance training centre, as well as a maintenance base at Tripoli. Shadi said the maintenance facility would serve carriers in Libya, southern Europe and Africa. Jean-Paul Gut, EADS chief operating officer, marketing, international and strategy, hailed the agreement: "This is a major breakthrough for Airbus in Libya," he said. "It is the first step in a long-term industrial collaboration."

**Boeing adds another 787 order via Pegasus****Mark Pilling**

Pegasus Aviation Finance has become the third lessor to order Boeing's 787, with an order for six 787-8 versions. Two of these are new orders; the other four are transferred from Italy's Blue Panorama, one of the launch customers for the aircraft. Instead of outright purchase, the airline has opted to lease the 787s from Pegasus.

The total deal is worth \$918 million at list prices. Pegasus has not specified a customer for the additional



787 programme vice-president Mike Bair.

two 787s, while Blue Panorama's Dreamliners will be delivered from 2009.

The other lessors to order the 787 are Low-Cost Aircraft Leasing, a start-up company that has six orders for 787-8s; and International Lease Finance Corporation (ILFC), which has ordered 20 787s.

"Taking possession of these early 787 deliveries places us in a strategic market position on this exciting program," says Rich Wiley, president of Pegasus, who also announced that its aircraft will be powered by Rolls-Royce Trent 1000s.

The 787 has become one of the fastest selling jetliners in history with 405 firm orders, says 787 programme vice-president Mike Bair. This easily outpaces Boeing's previous best-seller, the Next Generation 737, which had logged 150 orders at the same time in its programme development.

Bair is yet to form a concrete view of the new Airbus rival, the A350 XWB, which was unveiled at the



US leasing firm Pegasus Aviation Finance and Rome-based airline Blue Panorama will both become first-time Rolls-Royce Trent customers in a deal worth more than \$300 million, including a long-term TotalCare services agreement. The deal was signed at the show yesterday.

show on Monday. "We don't know," he says, when asked about the effect it could have on the 787's market performance. "We've seen what you've seen. It is still relatively vague about exactly what they are doing, but we always anticipated some kind of competition – robust competition – from Airbus.

"They are clearly trying to do something better than what they had," he

added. But with more than 400 orders in the bag and with the 787 entering service in May 2008, some four years ahead of the revised A350, Boeing has a considerable advantage. "We're comfortable with our position," says Bair.

John Feren, vice president of Leasing and Asset Management, Boeing Commercial Airplanes, says the 787 has a number of key advantages: "The flexi-

bility of the 787 makes it appealing for lessors because they want airplane assets that can be transferred across a range of airlines and business models," he says.

The manufacturer is aiming to deliver 112 aircraft in 2008-9, and is sold out up to mid-2012. As the show started, it had booked 403 firm orders and commitments for the 787 from 28 airlines. Output could rise to as many as 16 aircraft per month.

"If we make a rate change, it will happen in 2011," says Bair. "We are looking at what our rate projection ought to be.

"It's an investment decision. In theory there is no upper limit, it's just about how much money you put into factories.

"It turns out that final assembly is not much of an issue," says Bair. "Most of the expensive industrialisation is at our partners' factories where they build the barrels and wings."

Boeing is discussing the output hike both internally and with its suppliers.

**Kingfisher inks deal for ATR**

India's Kingfisher Airlines has signed a \$50 million 10-year turnkey maintenance agreement with ATR for its 35-strong order for ATR72-500s.

The global maintenance agreement will include the repair of equipment and line replaceable units, an inventory of spare parts, engines, airframe maintenance checks and maintenance of propellers and landing gears.

Kingfisher ordered 20 ATR72-500s at the Dubai airshow in 2005, and firmed up 15 options in February.

Kingfisher chairman Dr Vijay Mallya says the carrier is already seeing 90% load factors on the four aircraft that have been delivered so far. "We are already making money," he notes.

**Cathay signs MRO pact with GE**

Cathay Pacific Airways has signed a 20-year service agreement with GE Aviation Services for the maintenance, overhaul and repair of 40 GE90-115B installed and spare engines powering the airline's fleet of Boeing 777-300ER aircraft. The agreement is valued at more than \$1 billion over its life.

## IN BRIEF

## AIR TRANSPORT

**GE signs Mandarin MRO deal for Embraer jets**

Mandarin Airlines, a regional subsidiary of China Airlines, has signed a letter of intent with GE-Aviation for an eight-year OnPoint Solutions agreement for the maintenance and overhaul of its CF34-10E engines that power its new Embraer 190/195 aircraft.

Established in 1991, Mandarin Airlines operates regional short-haul international and domestic routes. The airline currently operates Boeing 737-800 aircraft powered by CFM56-7 engines.

OnPoint Solutions are flexible long-term commitments designed to meet customers' unique engine service needs. Backed by GE, these solutions are designed to help increase asset value and utilisation and improve operating efficiencies.

**Sikorsky back in Malaysian oil**

Sikorsky has agreed a deal with Malaysian Helicopter Service to supply three S-76C helicopters for use in the offshore oil market by Exxon Mobil.

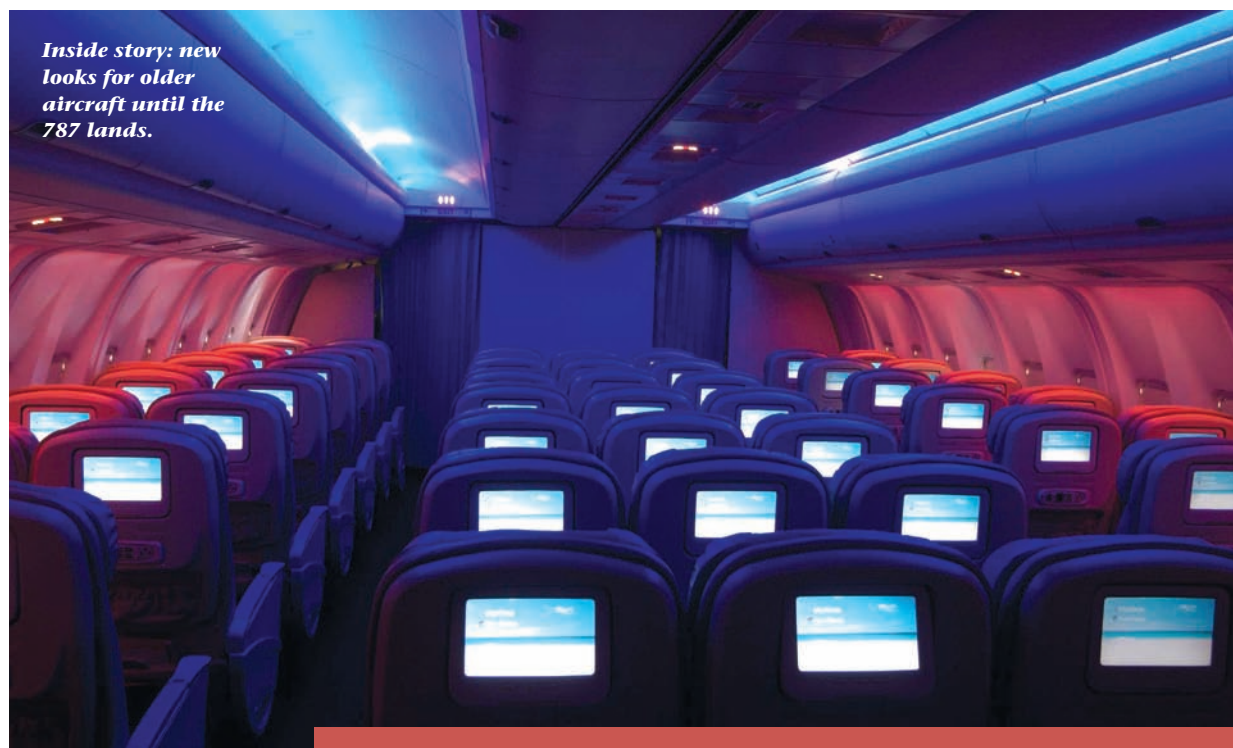
MHS will operate and maintain the helicopter under an agreement which includes a complete support package. The contract is the first aircraft replacement by Sikorsky for Exxon Mobil in the region in 14 years.

"MHS recognises the safety and reliability of the S-76, having been an operator of this model for a significant period of time. These helicopters perform more than one duty; they are a national asset to the country in which they operate," says Daniel Zsebik, director, commercial sales for Sikorsky. The helicopters are scheduled for delivery in July 2007.

**Dreamliner sites confirmed**

Three new locations for Boeing 787 training suites have been announced. Altean Training, a wholly-owned Boeing subsidiary, has added Australia, India and Singapore to the four previously confirmed locations. The training suites, supplied by Thales, will be up and running before the summer of 2008. The locations of two more sites are to be confirmed.

*Inside story: new looks for older aircraft until the 787 lands.*



As Boeing racks up sales of its 787 Dreamliner, much of the talk here at the show is how the manufacturer is ramping up its production rate and invigorating its global batch of suppliers to meet demand.

Until they can get hold of their first 787 widebodies, the issue for many carriers is what to do with their existing fleets of 757s, 767s and 777s before their replacements begin to arrive.

Boeing's solution to bridge the gap is to upgrade the interiors of these aircraft.

"We have done several deals around the 787 and 777 where in our discussions with airlines the conversation got a lot broader than just the purchase of a new airplane," says Dan de Silva, vice-president of sales and marketing at Boeing Commercial Airplane Services. "Carriers ask what they can do with their current fleet before they get the first 787 or 777."

**Deal**

The answer for carriers such as UK leisure carriers First Choice Airways and Thomsonfly, and others in Europe such as Austrian Airlines, is to sign a deal with the manufacturer that produces a revamped cabin based on its 777 Boeing Signature interior. The contract can also include other improvements to the aircraft.

For Boeing this is a logical extension of the life-cycle support approach it is offering airlines.

"We want to partner airlines through all the phases of their ownership of our aircraft," says de Silva. This includes training, operational improvements, upgrades

# MINDING THE GAP...

Mark Pilling explains how Boeing solved the 787 vacuum with as-new 767s

and converting aircraft to freight models at the end of their passenger-carrying life.

"First Choice is a hallmark example of this life-cycle support partnership," he says. When the carrier became a launch customer for six 787s in July 2004, it also signed a deal with Boeing to upgrade its fleet of six 767-300ERs, becoming the first European carrier to order Boeing's 767 Interior Upgrade package. The deal featured several other enhancements to the aircraft to improve its reliability.

Fraser Ellacott, engineering director at First Choice Airways, says: "Our whole strategy is to differentiate the long-haul experience." Being able to offer an upgraded in-flight experience puts the carrier one

step ahead of its competition. "The 767 with the 777 interior is such an enhanced experience that we are pleased because no one can offer that same product," he says.

First Choice now has four upgraded 767s in service, with the fifth currently having a new interior fitted at Abu Dhabi-based GAMCO. The final aircraft will be modified by GAMCO later in the summer, says Ellacott.

**Leases**

It is by no means certain First Choice will dispose of its 767s when the 787s arrive. All of the 767s are on operating leases. "We see the 787 as the next phase of our long-term plan, so it is a transition, but we are keeping our options open," says Ellacott.

Austrian is preparing to

put its first 767 into the hangars of Ireland's Shannon Aerospace in August. In total, the carrier will install Boeing Interior Upgrades on four 767s and three 777s. The retrofit includes a new business-class product with lie-flat seats, new in-flight entertainment system, updated avionics and the installation of Connexion by Boeing, the on-board internet service. The first of Austrian's 777s is being retrofitted by Lufthansa Technik.

Boeing itself acts as the systems integrator for these upgrades, with a variety of suppliers like GAMCO doing the work. The more complex the task the more chance Boeing believes it has to win this business. Says de Silva: "The market is potentially large in dollar terms – our ability to capture all these modifications depends on the complexity and nature of what our customer wants to do with the airplane."

The USA, where hundreds of 767s are in service, is a potentially major market for 767 upgrades. "We haven't even started to scratch the surface in the US," de Silva says.

## Downturn? This cycle is different, says Baseler

The doomsayers predicting that the only way ahead for the air transport industry is down may be missing a trick, says Randy Baseler, Boeing's vice-president of marketing.

Presenting the manufacturer's Current Market Outlook in the days running up to the show, he said: "I think the sceptics are looking too much at past cycles – this one is different."

"The main reason is the big US and traditional European flag carriers have not participated in this cycle. Usually they are at the front of it."

In particular, some commentators have suggested that last year's record volumes of commercial aircraft orders signal that the industry has reached the peak. But with several large US and European players expected to "participate in late 2006 and into 2007" as they replace ageing wide and narrowbody fleets, there are still plenty of large potential orders still to be won, he says.



**Randy Baseler: Global economy is the key.**

This is particularly true in the 787 market segment of 250-seater widebodies, where there are 1,500 airplanes such as 767s and Airbus A310s in service, with some 1,100 of them 15 years old or more. Carriers will look to replace these types over the coming few years.

The result is that the usual cyclical curve that the industry follows will be more elongated, he says. However, order rates are dictated by economic performance.

"The key in this whole cycle is the global economy," says Baseler. If this continues at the current reasonable rate then orders will flow, but if a downturn arrives they will dry up.



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