Destination Dubai!

The Jetman Dubai team of Yves Rossy, the Swiss inventor of the jet-powered wing, and his protégé Vince Reffet, last month flew the ultimate formation over Dubai of their body-mounted wings and an Emirates Airline A380 airliner. —Page 42

Happy Anniversary, Embraer!

The Legacy 500, Embraer Executive Jets’ new midsize jet, is making its debut here at the Dubai Airshow. The business jet was welcomed by Marco Tulio Pellegrini, President & CEO, Embraer Executive Jets (left) and Claudio Camelier, Vice President, Sales, Middle East & Asia Pacific.

More than 10 Legacy 500s have been delivered to date, including to customers in Saudi Arabia and Turkey.

Embraer is celebrating the 10th anniversary of its business jet division, which it created in 2005. It has since taken a nearly 20% market share in business jet deliveries.
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Dubai Airshow Biggest and Best Ever

This year’s Dubai Airshow is going to be bigger, better and more varied than anything that has gone before, says Michele van Akelijen, managing director of show organizers F&E Aerospace. “With over 160 aircraft due to appear and the possibility of seeing UAVs taking part in the daily flying program for the first time, it’s going to be an exciting event,” she says.

Dubai’s Civil Aviation Authority has agreed that UAV demonstrations will be allowed to take place at this year’s show. “We’re still in discussion with potential exhibitors and with the UAE military in providing UAVs for the flying display. We’re not talking about small drones either – we’re talking large-size UAVs that will have to be displayed inside the confines of the airshow flying display box,” says van Akelijen. Confirmation that the demonstrations will take place was awaited at press time.

There are several standout features at this year’s show. The standalone 3-D Print Show Pavilion is a major new feature that will fascinate even those who think they’re not particularly technology-minded. “Industrial 3-D printing/additive manufacturing is cited as a game-changer by Airbus, Boeing, GE and Rolls-Royce, who stress the importance of both within their supply chains and for final manufacturing of components,” says van Akelijen.

Although the Dubai World Central exhibition site is still very new, van Akelijen says that she will need even more exhibition space for the 2017 show. As part of a 10-year growth plan for the site, there are discussions with the Dubai government for an additional 10,000 sq. meters of exhibition space and additional chalets as well.

“That number has yet to be determined, but our chalets are sold out for this year. The Dubai Airshow has doubled in size since 2001 and this year’s event is definitely bigger than 2013. We have seen growth across a number of areas, including new exhibitors and increased investment from many returning ones. We’re expecting over 1,100 exhibitors from 60 countries, over 65,000 trade visitors and 1,750 media – it’s a good job we’ve made the media center bigger,” she jokes.

The newly formed UAE Space Agency is participating for the first time, underlining the potential importance of this sector to the region. “The global space industry is worth US$300 billion and is currently growing at an 8% annual rate,” explains van Akelijen. “We’ve already got exhibitors that specialize in space products, including ATK Space Systems, UTC Aerospace, Thales and a Russian Space Agency exhibit.”

There are also three major conferences going on during the show. The “Offsets Conference” takes place on Nov. 9. Entitled “Utilizing Offset Investment to Develop Space and Aviation Technologies and Local Supply Chain Capability,” it is organized by offset experts O2K in partnership with the Dubai Airshow. The conference will address the utilization of industrial cooperation, or “offset” investment to further develop aviation technology, supply-chain capability and the UAE’s space industry.

The Airport Safety and Security Conference is being held in the conference room on the show floor for the first two days of the show, and then, on days three and four, the room will host the Gulf Aviation Training Event (GATE). —Mike Vines
Radical improvements require radical innovation. That’s why, in our efforts to make the world’s leanest, most economical aircraft, we didn’t just tweak – we reinvented. Every element of the C Series is custom-designed and purpose-built, resulting in a jet fleet that offers a 15% cash operating cost advantage, a peerless environmental scorecard and transcontinental range. If you want the most efficient aircraft in the skies, opt for the one that’s been built from the ground up.
3-D Printing Takes Its Place Here at Dubai Airshow

The potential benefits of 3-D printing have long been understood by the aviation industry, but the decision to hold the 2015 3-D Printshow in a dedicated pavilion within the Dubai Airshow underlines the growing adoption of additive manufacturing technologies across the sector. One estimate suggests over 20,000 printed parts are currently flying on Boeing aircraft; more than 1,000 parts on the A350 XWB have been printed. The technology, while still by no means fully mature, is already benefiting aviation – and is set to become more widely used.

“I was around when composites first started, and the parallel I make with that is it took a long time for composites to get where they are today,” says Terry Stone, Middle East managing director for Satair Group. “I think 3-D printing technology will move faster, just because technology moves faster today. I see a similar impact to the parts market that composites have had on the aviation industry.”

As well as speeding up prototyping and enabling the remanufacture of spare parts that are no longer in production, additive manufacturing offers other benefits to the aviation industry. And it’s not just plastics: Metals can be used to create 3-D-printed components.

Although the material, the specific manufacturing process and the finished component all need to be separately certified and validated before they can be used on an aircraft, the maturation of the manufacturing and certification processes are helping bring 3-D-printed parts into aviation’s mainstream.

“It will definitely not be the case that 3-D printing will be used for everything in the future,” says Satair’s head of additive manufacturing solutions, Dr. Mareike Boeger. “If you want to produce a million screws it will always be cheaper to produce them conventionally. But I think the number of applications for which 3-D printing is suitable will definitely grow a lot.” — Angus Batey

AgustaWestland AW169 and AW189

These new members of the AW139 helicopter family have different cabin sizes but are essentially the same thing, being optimized for roles including emergency medical services, search and rescue (SAR), law enforcement and onshore/off-shore support. With its two large cabin windows, the 169 accommodates two pilots and between eight and 10 passengers, while its stablemate, the 189 will take up to 16 passengers in a cabin with four side windows.

Airbus A350XWB

Late in making its Dubai show debut, the “extra wide body” A350 is already in service, the initial delivery to Qatar Airways having taken place on Dec. 22 last year. Airbus’ newest airliner is initially available in Series 900 form with typical (three-class) seating for 314 passengers. In prospect is the longer Series 1000, which is intended to cover 8,400 nm with, typically, 369 passengers. The “shrunk” Series 800 is no longer on offer, but Airbus has at least one taker for the ACJ350 executive jet.

Antonov An-178

It looks familiar, because the An-158 100-seat airliner was shown at Dubai last time, but this is a very different airplane. The military gray color scheme is a clue, for this is a freighter equipped with a rear loading ramp. Typical payloads include three “Humvee” vehicles, 72 troops, 68 paratroops or 40 stretchers plus 30 walking wounded. Not that military use is exclusive: Volga-Dnepr freight airline provided design and marketing advice, and Antonov expects civil operators to order a significant number. The prototype, here on show, first flew on May 7 this year and was initially shown at Paris the next month.

Beechcraft AT-6 Wolverine

Despite its well-known shape, the AT-6 makes its debut in this particular configuration, having gained its wild animal name only at the Paris Air Show earlier this year. Before that, it was unofficially known as the Coyote, but that there are puzzling indications that the manufacturer has abandoned the name of Wolverine, too. Thus, the unnamed “AT-6 Light Attack” is a strengthened and improved version of the U.S. armed forces’ T-6 Texan, offered for commercial sale to cover a wide mission spectrum. Its capabilities have just been demonstrated in NATO exercise “Ample Strike” in the Czech Republic.

Cessna Citation Latitude

The latest member of the Cessna Citation business jet family received its certificate from the Federal Aviation Administration in June and deliveries began during August, one of the first going to Aircraft Management Group Inc., in Pittsburgh, Pennsylvania. With its distinctive “curled-up” wingtips, the Latitude will carry up to nine passengers over 2,850 nm (5,278 km; 3,280 mi.) at speeds up to 446 kt. (826 km/hr.), employing a pair of Pratt & Whitney PW306D1 turbofans. Rumor has it that another new Cessna jet will be announced in Las Vegas next week.
Trade Visitor Registration – NOW LIVE!

The Bahrain International Airshow (BIAS) is a commercially-focused airshow that delivers business opportunities to the international aerospace community. BIAS is held within unique surroundings offering a 5 star experience with access to high-level participants and an opportunity to explore the latest civil and military aircraft with exceptional flying and static displays. BIAS 2016 will host exclusive networking opportunities including the Exhibition Feature Hall, Hosted Buyer Programme and Themed Conference. The 4th edition of BIAS will take place from 21-23 January 2016.

Be a part of it. Book your trade visitor pass today at bahraininternationalairshow.com
Iomax’s Archangel armed intelligence gathering aircraft is making its debut here at the Dubai Airshow in the markings of its primary customer, the UAE armed forces.

The two-seat, dual-control Archangel, based on the Thrush 710P agricultural crop duster, is one of a number of counter insurgency and light strike aircraft being displayed here at the show.

The Archangel is a development of the Air Tractor AT-802 Border Patrol Aircraft developed by Iomax of Mooresville, North Carolina, for the UAE, which entered service in 2011.

The new model builds on the AT-802, embodying many new capabilities including enhanced survivability with podded underwing defensive aids and missile warning sensors built into the wings. With its large wing and powerful, 1,600 shp. Pratt & Whitney PT6A-67F turboprop, the Archangel is able to lift a full weapon load plus 670 U.S. gallons of fuel. Endurance is a respectable 10+ hours and maximum altitude (with oxygen) is 25,000 ft. “No other airborne platform even comes close” boasts Iomax.

On the centerline pylon is the distinctive Iomax Flexible Pod with a Wescam MX-15D electro-optical camera pod as its primary sensor, while the back end contains a Rover datalink allowing full motion video to be passed to ground troops. The pod also contains a weapon datalink and a synthetic aperture radar.

Wescam has disclosed it will deliver 28 of its camera systems for Archangel close air support aircraft for the United Arab Emirates.

The Archangel is fitted with an Esterline CMC Electronics Cockpit 4000 glass-cockpit avionics suite, already in use on a number of jet trainers, with three 5x7 inch multifunction displays in the front cockpit and one in the rear cockpit, based around a mission computer that manages and integrates sensors and radios.

Here in the UAE, the Archangel has been fitted out with typical weaponry including the Lockheed Martin Hellfire, a Mk-82 laser guided bomb, and Roketsan’s Cirit lightweight missile. Iomax’s website states that the aircraft has also been cleared to fire Roketsan’s UMTAS anti-tank missile, presumably as an alternative option to the U.S.-controlled Hellfire.

UAE officials said the AT-802 Border Patrol Aircraft project has now come to an end. Several of the 20-plus AT-802s used in that initial phase have been handed to other countries including Jordan, and most recently to Yemen. Videos on the Internet have shown the unmarked AT-802s being used to train Yemeni pilots at Al-Anad air base north of Aden, presumably in a bid to re-equip and retrain Yemeni forces and to support the Arab coalition fighting the Houthi rebels there.

—Tony Osborne

Another airline flight training academy is adding Embraer’s Phenom 100E very light jet to its instructional fleet. The latest is Emirates Flight Training Academy, which placed an order for five aircraft and five options. A Phenom 100E painted in Emirates livery is on display here at the Dubai Airshow, even though deliveries won’t begin until 2017.

Earlier this year Etihad, the national airline of the United Arab Emirates, signed a US$30 million deal for four Phenom 100E’s plus three options for its Etihad Flight College. Deliveries will begin early next year.

The Phenom 100E is also operated by flight training schools in the U.S., at Finnair, and in Australia by China Southern West Australian Flight College.

Ironically, the Phenom 100 was dubbed “a mini E-Jet airliner” when launched in 2005 because so much of Embraer’s regional airliner engineering philosophy went into its airframe, systems, avionics and cockpit procedures. Now those are the very virtues that are appealing to airline training schools, says Ricardo de Paula Carvalhal, manager for sales engineering at Embraer Executive Jets.

“The systems on board are what you would find in an airliner rather than a light jet,” making it ideal to transition pilots into the air transport world, he says.

The flight training academy market has rather taken Embraer by surprise, and the company is still assessing its potential. “It is quite clear it is not developed yet,” Carvalhal notes, adding “there are lots of propeller planes the Phenom 100E could replace.”

—John Morris

Emirates Selects Embraer Phenom 100 for Training

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Embraer Hopes for First Middle East E2 Orders

Embraer is hoping to win its first order from the Middle East for its next-generation E-Jet E2 as the prototype regional airliner comes together at its headquarters in São José dos Campos, Brazil.

“We have a very good position as market leaders in the Middle East in the 70-136 passenger range with our Embraer E-Jets,” says Embraer Commercial Aircraft president and CEO Paulo Caesar Silva. “The new E2 will be terrific for the region. It will be more efficient and more robust for the harsh environment, and we’ve been talking with our customers there to make it even more suitable for them.”

But that first order so far has been elusive. In fact, Embraer has found the Middle East market for regional jets to be very far from mature. To date, it has won orders for 60 of its airliners in the region, including North Africa (the largest operator is Egyptair with 15), but airlines continue to fly legacy Airbus and Boeing aircraft on routes that are too thin to generate profits that a more efficient aircraft could realize.

The E2, says Caesar, is spearheading Embraer’s argument to airlines that they should operate fleets of aircraft “right-sized” for the routes they wish to fly. The Embraer 195, he notes, is already far more efficient on those routes than larger Airbus and Boeing narrowbodies, and the E2, with its aerodynamic improvements and more efficient, next-gen Pratt & Whitney geared turbofan engines, will come in 23% lower still in seat-mile costs.

Embraer is about to deliver the 1,200th E-Jet since the family was launched 10 years ago, and it has booked more than 1,700 orders.

The first prototype of the E-Jets E2, an E190-E2 model, is entering final assembly, with the fuselage painted and the wings installed. Embraer plans to begin flying the first E190-E2 in the second half of 2016, with entry into service set for 2018. The E195-E2 is scheduled to enter service in 2019 and the E175-E2 in 2020.

Flight tests of the E2’s PW1900G engine began last week on Pratt’s 747SP flying test bed in Mirabel, Canada. Evaluation may extend into early 2016.

Earlier this year Embraer won the 2015 Crystal Cabin Award in the “Industrial Design and Visionary Concepts” category for the E-Jets E2’s cabin interior concept. The cabin mockup is making its Middle East debut here at the show, on Stand 2260.

—John Morris

Aviation Week’s Norris Wins Lyman Award

Aviation Week Senior Editor Guy Norris has been selected to receive the 2015 Lauren D. Lyman Award for outstanding achievement in aerospace communications, awarded by the U.S. Aerospace Industries Association (AIA) and sponsored by United Technologies. The award is named after “Deac” Lyman, a Pulitzer-winning aviation reporter with the New York Times and later a public relations executive with United Aircraft.

Norris “distinguished record of accurate reporting and dedicated focus on our industry exemplifies many of the qualities that Deac Lyman brought to both his reporting and public relations careers,” said AIA President and CEO Dave Melcher.

Based in Los Angeles, Norris joined Aviation Week in 2007. Before that, he was a technical editor and then U.S. West Coast Editor for Flight International. He has won numerous awards during his career as an aviation journalist.


Norris will receive the Lyman Award on Dec. 14 at a special dinner held in his honor in Washington.
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Northstar Negotiating on 60-70 Armed Bell 407s

Northstar Aviation, the UAE-based company that has developed a bespoke armed version of the Bell 407 light helicopter, is in negotiations with several Middle Eastern states for more sales of the aircraft.

Terry Key, vice president of operations at Northstar told ShowNews that three to four countries in the region were interested in the Bell 407 MRH [Multi-Role Helicopter] with potential sales of around 60-70 helicopters.

The interest comes after the successful introduction of the aircraft into the UAE Armed Forces, which has 30 407MRHs on order, of which two-thirds have now been delivered.

“A lot of countries in the region are still operating the [Aerospatiale] Gazelle, but they are becoming hard to service and costly to operate,” says Key.

“There are very few single-engine helicopters available that can fulfill this sort of mission.”

Key says the Model 407 was selected because of the low cost of operation, good performance and the ability to fit an electro-optical camera under the nose. He also notes the 407’s “excellent tail-rotor authority.”

Development of the 407MRH began in 2011, and deliveries started in 2014.

Key says that Northstar is now studying a number of twin-engine helicopter types to be modified into a multi-role armed helicopter. Key says Airbus’ H145 or the Bell 429 could be viable options.

Northstar takes “green” civil certified Model 407GX commercial helicopters and modifies them at its facility in Abu Dhabi. The company strips out the Garmin G1000 avionics suite and retrofits what Key describes as a cleaner cockpit consisting of three 6x8-inch displays, with the center multifunction display using TekFusion’s Pathfinder mission management system integrating aircraft systems, radios, moving map and infra-red imagery from the under-nose StarSafire electro-optical camera.

Weapons are fitted to a Cantine-developed weapons mount that can fire guided missiles, forward-firing guns and unguided rockets. The aircraft can be re-rolled. With the weapons mount removed, seats for four passengers can be installed in around one hour.

—Tony Osborne

Bell Helicopter Mulls Model 505 Ramp-Up

With 350 orders in the bag, Bell Helicopter Textron (Chalet A434) is considering an early ramp-up in production of the new generation Model 505 JetRanger X.

Preparations for production of the new single-engine helicopter are underway in Lafayette, Louisiana. Although FAA certification of the 505 has been pushed back into the first half of 2016, interest in the new helicopter remains strong, says Patrick Moulay, vice president global sales and marketing at Bell Helicopter.

“Customers don’t want to wait three years for a new aircraft,” Moulay told Aviation Week.

He said the company was looking at an increase in the production rate by 30%, with a decision expected before the end of the year.

Three prototype helicopters have now completed more than 470 hours of flight testing since the first flight was performed in November 2014.

Middle East Likes Armed Helicopters

Here in the Middle East, Moulay says that the company has been enjoying a hike in activity in recent years thanks mainly to the success of its Model 407 single-engine helicopter as a light attack and reconnaissance helicopter. More than 70 Model 407s have been ordered or delivered to the region since 2009.

While Bell’s own light attack version of the helicopter, the 407GT, has had only limited success so far, other companies have won business by converting certified green aircraft and then converting them with their own bespoke mission kits.

Huntsville, Alabama-based Science and Engineering Services (SESI) converted Model 407s into IA-407s for Iraqi Army Aviation, which have seen action in the fight against Daesh.

In February, Reno, Nevada-based BBM Inc., purchased 16 Bell 407GXs to be converted into what Bell called a “variety of urgent mission profiles,” including casualty evacuation and reconnaissance for use in Africa and the Middle East.

United Arab Emirates-based NorthStar Aviation (Stand 1457) developed the 407MRH Multi-Role Helicopter to meet the needs of the UAE’s armed forces but is hoping for sales outside the UAE in the near future.

Meanwhile, Bell is looking to secure additional commercial sales in the region with potential emergency medical service orders from here in the UAE and additional orders for its Model 412 and new 525 super-medium helicopter, 10 of which have been ordered by local operator Abu Dhabi Aviation.

—Tony Osborne
The AW169 is the brand new 4.5 tonne class twin-engine helicopter. Featuring an advanced glass cockpit, state-of-the-art avionics, 4-axis digital autopilot, full digital electronic engine control (FADEC) and dual channel Flight Management System (FMS) for reduced pilot workload and increased passenger comfort.

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Fighter Buyers Are Spoilt for Choice

The revolution in the global fighter market started with good news and bad news at the end of 2013. The good news was for Saab: Brazil’s selection of the JAS 39E/F Gripen as its future fighter. This unlocked the Swedish government’s support, which was contingent on an international partner. The bad news was the United Arab Emirates’ dismissal of the Eurofighter Typhoon.

For Saab, this was the start of hard work on what is largely a new aircraft heavier and more powerful than the C/D version, with new radar, processing and display hardware and an advanced electronic warfare system.

The UAE’s message to Eurofighter may have been a stern warning rather than a condemnation: “Don’t come back until you’re qualified – Rafale is flying with things you’re still talking about.” The message was received as the Royal Air Force belatedly realized that the Tornado was going to be retired in 2018, taking unique and vital capabilities with it, and that the Lockheed Martin F-35 Joint Strike Fighter would be nowhere near ready to replace it.

Eurofighter’s fractious community of government sponsors and service customers (two of them also JSF partners, with divided budgets, if not loyalties) then started to make decisions, putting badly needed improvements on a firm schedule – the Meteor air-to-air missile, Storm Shadow cruise missile, Brimstone close-support weapon – and funding development of an active electronically scanned array (AESA) radar, for which Kuwait should be the launch customer. There is even a 10-year development roadmap, via the Phase 4 Enhancement (P4E) program; something the Rafale has had, and the Typhoon has lacked, since the early 2000s.

Then, in 2015, Dassault gained new customers in Egypt and Qatar, while trading a shaky 126-aircraft co-production deal in India for 36 somewhat firmer sales. Good news to a point for Dassault, although it puts the rest of India’s need to replace hundreds of aging MiGs back in play.

In the U.S., Boeing has unveiled plans to rebuild F-15C/D Eagles with up to 16 air-to-air missiles, conformal fuel tanks and advanced EW. The Navy could acquire as few as 12 F-35Cs per year in the 2020s, which would make the service dependent on life-extension programs for the Super Hornet to fill its carrier decks. The service is trying to eke out new production as long as possible to make that complex effort less risky.

A customer starting a new competition today is spoilt for choice. At the upper end of the European offerings, the Typhoon and Rafale are superficially similar, but the former excels in acceleration, supersonic maneuverability and altitude while the latter still leads in range and diversity of weapons. When it comes to “swing-role” performance—the ability to carry a respectable air-to-air and air-to-ground load at the same time – they outpoint the Gripen, but (if you believe the Swiss air force) the latter’s operating costs are half that of its twin-engine rivals.

This will lead to some lively competitions in F-35 no-go areas such as much of Asia and the Middle East. But the battle will spill across that boundary. Belgium is looking at the F-35, Rafale and Gripen, and Canada’s Liberal party has pledged to open its 65-aircraft requirement to competition after the new government ditched the F-35.

More than ever, the argument that the F-35 is a “fifth-generation” airplane that offers a quantum leap over its rivals looks simplistic. It’s certainly different – more of a strike aircraft, less of a classic fighter – and it uses stealth technology in lieu of an automated wideband radio-frequency (RF) jamming suite. It’s designed to penetrate directly to highly defended targets where other aircraft launch expensive cruise missiles.

But the European aircraft are gaining weapons and sensor capabilities that are not available in the initial-service-standard Block 3F JSF: Meteor, infrared search and track, gallium-nitride-based electronic warfare systems, multispectral and hyperspectral targeting pods and long-range reconnaissance are among them. Some but not all may appear in Block 4, but those decisions are ahead of us.

There’s been a change in the discussion about relative costs. Rafale and Typhoon have had a reputation for being expensive to buy and to operate – but in a rule-based competition in Korea, the money that would have bought 60 Typhoons paid for 40 JSFs. The Netherlands had to reduce its JSF buy from 85 to 37 aircraft, and Norway has considered cuts to its 56-aircraft planned force because of projected operating costs.

The JSF program, unsurprisingly, is working hard on its cost-per-flight-hour problem, and on fixing technological gaps, such as its elderly single-band electro-optical sensor, in Block 4. Competition is something that should benefit everyone. —Bill Sweetman
We’re beating our commitment on improved fuel burn efficiency, now exceeding 16%. Just the kind of ongoing improvement we told you to expect from our PurePower® Geared Turbofan™ engine architecture. Learn more at PurePowerEngines.com.
The move—a response to sudden interest in the Rafale outside of France—is somewhat of a gamble for Dassault.

New Delhi, which in March opted out of a 126-plane purchase from the Saint Cloud-based company in favor of a government-to-government sale of just 36 Rafales, has not yet signed. Qatar, which in May agreed to buy 24 Rafales for EUR6.3 billion, is late in making a down payment; and Egypt, whose EUR5.2 billion agreement includes 24 Rafales and a French frigate, is drawing its first six aircraft straight from Dassault’s Merignac production line, leaving a gap in planned inventory for the French armed forces that the company will have to make up.

“It’s a measured risk. A success-oriented risk. And if we didn’t take this risk we’d be obligated to delay deliveries,” says Dassault Aviation Chairman and CEO Eric Trappier.

“We had to do this,” he says, even if it ultimately means paying subcontractors for hardware Dassault does not need. “If it happens we don’t sign any of the contracts we’ll put the brakes on the production rhythm.”

Trappier announced the uptick in Rafale production in July, shortly after the deal with Qatar was agreed and India gave a verbal commitment for the 36-Rafale purchase.

“This obviously presumes we have adjusted subcontracting production to meet that objective,” Trappier says. “We brought together the entire industrial production chain to explain to them our proposed schedule. And they’ve agreed to do what’s necessary.”

In the meantime, he says negotiations in India have been tough, though he is optimistic they will be completed by the end of this year. He says discussions surrounding industrial offsets are complex and ongoing.

Beyond India, Trappier says he anticipates a fourth Rafale contract to be signed next year. Prospects include the United Arab Emirates (UAE), which is already flying Dassault-built Mirage combat jets and is currently using them in support of operations against Yemen.

Trappier is also eying Canada, whose new Prime Minister, Justin Trudeau, has vowed to scrap the nation’s commitment to the F-35. Belgium, which recently issued a request for information related to replacing its F-16 fighters, is another possibility. Trappier says Switzerland is also a prospect, albeit a long-term one. Although Geneva is not currently searching for a new fighter, the fact that the Swiss will need to replace both their F-5 Tiger and F/A-18 Hornet fleets is not lost on Dassault, which is preparing for a possible competition there.

Trappier says longer-term, export prospects for Rafale are looking up in places where France is making geopolitical headway against competitors, notably those in the U.S.

“There are situations where we can go into a country and make our best offer but have zero chances of winning,” he said, citing the Rafale’s loss to the F-35 in South Korea last year. “But the world is changing, and now the U.S. appears to be present a little differently, which gives us more confidence to sell in environments we weren’t able to before. And this has been exploited to the max by French political authorities.”

—Amy Svitak

With India likely to order three-dozen Rafale combat jets in the coming months, and another export contract for the French fighter expected next year, Dassault Aviation has asked its supplier base to size for tripling output by 2018.

The first three Rafales have been delivered to Egypt.
A service network with the same precision and dependability as the engine: predictable costs, flexible solutions, OEM-authorized parts and maintenance. V-Services™ – a portfolio of options to give maximum life and service to your V2500® engines. Only from IAE. Visit www.i-a-e.com.
In the end, a hoped-for deal to sell Typhoons to the United Arab Emirates collapsed: But work on increasing Typhoon’s capabilities has continued apace since then. As more weapons and sensors are added to the Typhoon system, the platform’s competitiveness increases. With the UAE’s fighter requirement still unfulfilled, a sale to Kuwait agreed in principle, and possible interest from other nations in the region, Typhoon might once again be the talk of the show.

Earlier this year, the British government signed a contract for the Phase Three Enhancements (P3E) program for Typhoon. This primarily covers integration of the MBDA-built Brimstone 2 missile – a productionized version of the low-collateral moving-target DMS (dual mode seeker) Brimstone carried by the UK Royal Air Force’s Tornado platform, which was delivered under an urgent operational requirement for use during combat missions in Afghanistan.

P3E is running in parallel with the preceding P2E (Phase 2 Enhancements) project. P2E integrates the Storm Shadow cruise missile and the Meteor air-to-air capability, as well as expanding the multi-role capabilities of the aircraft with improvements to the human-machine interface, and fielding additional support for the Striker helmet system. And while the enhancements are a British program, the benefits will be felt throughout the future Typhoon fleet.

“The P3E contract is a single-nation contract,” says Andy Flynn, capability development program manager for Typhoon at BAE Systems’ plant at Warton in the UK. “But it will turn out in the timescales planned, and then it becomes a baseline for the next phase of enhancements.”

The weapon-integration programs are at different stages, but all are progressing on schedule.

“We fired Meteor earlier this year as part of P2E, and that went to plan,” says Flynn. “We have opportunities to take another Meteor firing in the next few weeks, and we’ll be opening up the envelope throughout next year.

“It’s a similar story from a Storm Shadow perspective,” he says, referring to the cruise missile currently in service with the RAF on Tornado. “[Italian Typhoon partner] Alenia are leading that. They’re bringing their jet – instrumented production aircraft 2 [IPA2] – to Warton and we will be doing trials from the UK. The missile will be released, but not a powered release: This is more for the stores-release-and-jettison technical bits of the program.”

“We’re looking to start flying Brimstone in the middle of next year,” says Paul Ashcroft, BAE’s P3E technical entry-into-service manager. “Flights will predominantly be on IPA6, and will continue throughout 2016 and into 2017 for that capability. The configuration we’re looking for is Brimstones on the outboard [pylons], Paveway IVs on the inboards, and tanks down the middle.”

The Brimstone launcher carries three missiles, so the proposed configuration would see Typhoon able to carry six Brimstone 2s and two Paveway IVs. Storm Shadow integration is proceeding with a symmetrical configuration of one missile under each wing, rather than mounted on the centerline as it is presently carried by Tornado. When carrying Storm Shadow, the expectation would be that the jet would not carry any other stores apart from air-to-air missiles and a centerline fuel tank.

“The jet will be able to work with all of the effects – it’s just what configuration you put them on the aircraft in,” Flynn says.

The other key capability for Typhoon that could increase its chances of securing more export orders is the vexed question of the active, electronically scanned array (AESA) radar. Known variously as E-Scan and Captor-E, the Selex-built system has been touted as a capability for Tranche 3 Typhoons for some time, but thus far there is no confirmed customer. Briefings that could take place during the show may clarify some aspects of this part of the program; possibly including whether an expected order from Kuwait – a memorandum of understanding (MoU) between Alenia and Kuwait was signed earlier this year – may see them become the first customer for the radar.

“My personal view is that, with P2E and P3E on contract, we’re really making those step changes,” says Flynn. “We’re unleashing the full capability of Typhoon. That’s good for the core nations, and that’s what we’re here to do.”

—Angus Batey and Tony Osborne
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Iranian Missile Threat Drives Middle East Defenses

Despite U.S. efforts to integrate missile defenses, Gulf countries buy their own point-defense systems.

For Saudi Arabia and its neighbors, the missile threat from Iran, which has the largest inventory of ballistic missiles in the Middle East, is very real. The fear of a potential attack has prompted nations in the Persian Gulf to buy layers of missile defense.

“We know what the time on launch from Iran to impact in Riyadh is. It’s 400 seconds,” Prince Sultan bin Khaled Al Faisal, former commander of the Royal Saudi Navy, said during a recent event at a Washington think tank, the Center for Strategic and International Studies.

The possibility of a strike drives nations across the Persian Gulf to spend billions of dollars on military hardware. In 2014, Gulf nations spent US$133 billion on their militaries; Iran spent US$15 billion, according to Abdullah Toukan, a senior associate at the Center for Strategic and International Studies and former adviser to King Hussein (Jordan).

But despite the spending mismatch, Iran has a powerful missile arsenal that it continues to hone. On Oct. 11, Iran tested the Emad, a medium-range precision-guided munition capable of reaching Israel. As a result, Gulf Cooperation Council (GCC) nations—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE—are continuing to buy a sophisticated set of ballistic missile defenses.

Like in Europe and in Asia, the U.S. has tried to encourage countries in the Middle East to form a collective integrated missile shield. In May, President Barack Obama met with the GCC member states at Camp David to discuss an integrated approach. The states agreed to develop a missile defense capability, including an early warning system, Frank Rose, assistant secretary of state for Arms Control, Verification and Compliance, said recently at the Multinational Ballistic Missile Defense Conference. And the U.S. agreed to conduct a study of the GCC’s ballistic missile defense architecture and said it would help develop the early warning system.

Still, tangible progress has been difficult, as political distrust between the nations and other factors have prevented an agreement on how to share communications, operations or training.

GCC countries have always sought to maintain some independence, according to Toukan. “They don’t want to fall on the mercy of one supplier,” he says.

Right now, the U.S. can provide Gulf countries with some early warning data from sensors in space or on the ground in the region, says Riki Ellison, president of the Missile Defense Advocacy Alliance. And in the absence of a formal, integrated defense system, each individual nation has pursued individual defenses bilaterally with the U.S.

A key deal was the UAE’s decision in 2008 to pursue Lockheed Martin’s Terminal High Altitude Area Defense system capable of intercepting short- and intermediate-range ballistic missiles. Qatar has also expressed interest in THAAD, according to Toukan. But so far, point-defense systems, such as Raytheon’s Patriot, are more common and also easier to operate. Already, Saudi Arabia and the UAE have used Patriot successfully in Yemen.

Purchases are continuing. In July, the Defense Security Cooperation Agency announced a potential sale of the Patriot missile defense system to Saudi Arabia worth US$5.4 billion. And here at the Dubai Airshow, Raytheon and Lockheed Martin are displaying upgrades to missile defense systems.

In the past, the Middle East has helped to fund upgrades to Patriot. In 2008, the UAE signed a contract worth US$3 billion with Raytheon to build Patriot fire control units.

The UAE contributed money to a redesign effort that became the PAC-3’s latest standard, says Tim Glaeser, a Raytheon vice president. The redesign helped add a radar digital processor that enabled upgrades to be made with software, a commercial off-the-shelf adjunct processor with room for new software upgrades and a modern man station with 30-in. touch-screen panels. And given the potential for nuclear threats, Lockheed Martin (Stand 1260) has developed a missile segment enhancement MSE to the Patriot system that uses “hit-to-kill” technology to essentially vaporize an incoming missile’s warhead in the exoatmosphere to limit any radioactive fallout. In addition to Japan and Poland, two Middle Eastern countries, Turkey and Qatar, appear most interested in the upgrade, according to a Lockheed official.

Here at the show, Raytheon (Stand 1240) will also be looking to market systems that could be used for lower-tier threats as well. That includes its National Advanced Surface-to-Air Missile System (Amraam), which fires the AIM-120 Advanced Medium-Range Air-to-Air Missile. Some countries have asked for a longer-range, higher altitude version, and to that end, Raytheon and Kongsberg Defense Systems are working on an Amraam extended-range version, Glaeser says.

—Jen DiMascio
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Interoperability is the watchword for the next phase of development of the Patriot missile-defense system. And it is Patriot users in the Middle East who are leading the way.

U.S. Promotes Missile Defense Interoperability


In 2008, when the United Arab Emirates placed an order for a significant number of Patriot fire units, that really kicked off the resurgence of Patriot,” says Tim Glaeser, VP of integrated air and missile defense at Patriot prime contractor Raytheon (Stand 1240). “The Emiratis agreed to complete the development of some of the critical engineering change proposals that are now in production and have already been delivered to the UAE.” This configuration – called Patriot 3+ – includes “significant improvements to every one of the major end items of equipment,” says Glaeser. But the company is already looking at the next stage in the evolution. Next Generation Patriot will replace the main radar with a Gallium Nitride active, electronically scanned array (GaN AESA) sensor, with options for quarter-panel aft GaN AESA arrays to give 360-deg. coverage.

Next Generation Patriot will also introduce CC2: Common Command and Control. “We’re going to take elements of five existing C2 vehicles and incorporate them into an open architecture,” Glaeser explains. “That’s very important if you want to integrate some of the indigenous capability some nations already have.” But it also permits a greater level of integration between different nations, too.

“I think they’ve taken the next step,” Glaeser says of the four GCC nations currently operating Patriot. “They’ve said, ‘If I’m interoperable with the U.S., I need to be interoperable with my colleagues to the north and south, to the east and west.’ There’s a lot more focus in the GCC on interoperability, sharing information and working together – even looking at how they could reduce their life-cycle costs by training, maintaining and sustaining together.”

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Thales Aims Armed Watchkeeper at Middle East

There are a number of ironies surrounding the growing maturity of the military unmanned air systems (UAS) market as far as the Middle East is concerned. Coalition operations in Afghanistan and Iraq have proved the utility of hunter-killer aircraft such as General Atomics’ Predator and Reaper, and their use over terrain typical across the region has seen these systems become the most intensely debated new military technologies of the 21st century. But as yet, aircraft of this type have not made it into the inventories of the region’s armed forces, despite clear need and obvious interest.

The main reason is that UAS are subject to the same international treaties controlling the export of the technology that apply to missiles. Because an unmanned aircraft could potentially be used to deliver a chemical, nuclear, biological or radioactive payload, UAS that operate beyond a controller’s line of sight are treated as delivery mechanisms for weapons of mass destruction. So General Atomics (Stand 1752) has thus far been able to offer only its Predator XP – an airframe with an extended flight time but no capability to carry weapons – to potential customers in the region.

The arrival, then, of a new medium-altitude, long-endurance (MALE) UAS capable of carrying weapons but free of U.S. export controls could well spark considerable interest in the region. The Watchkeeper X – or, to refer to it in the language of its newly unveiled logo, WKX – is a derivative of the Watchkeeper system developed for the British Army by a consortium led by Thales. Although the British Watchkeeper is a reconnaissance platform with no weapon-carrying capability, WKX – which was launched by Thales at the Defense and Security Equipment International (DSEI) exhibition in London in September – is bidding for Poland’s Gryf requirement, which is understood to mandate weapons carriage.

“We are driven by a Polish requirement which has not been issued yet,” says Mat Moore, Thales UK’s head of UAS business. “Working with our partners, [Polish military electronics specialist] WB, our intention is to...develop that technology within Poland. The weaponized solution for the Gryf program will be very much Polish-industry led.”

Another differentiator WKX has over Predator or Reaper is its clearance to fly outside war zones. Watchkeeper has been criticized for delays in its entry into service – the system only briefly made it into active service in Afghanistan before the British combat mission there ended. But the overruns were partly due to the lengthy process of achieving certification of the system, not just the aircraft but the ground station and all associated data links, from the UK’s Military Aviation Authority (MAA). While the UK’s Reaper fleet cannot be flown in the UK, Watchkeeper is able to fly on training missions over the Salisbury Plain ranges, operating in restricted airspace from the nearby defense ministry airfield at Boscombe Down.

“We’ve gone through a first-of-type process for a UAV to get the right level of certification with the UK MAA,” says Moore. “We have a body of evidence, a safety case. If we look at France [where WKX is also being offered] and Poland, they are also looking at their own safety requirements. It’s transferrable across. There may be some deltas in different nations’ requirements and we will address those to ensure they are met.”

The weapon currently proposed to meet the Polish requirement is Thales’ Free Fall Lightweight Multirole Missile (FFLMM). Other options, including the ILGR (induction laser guided rocket) from Thales’s subsidiary, TDA, are under consideration for integration onto the WKX platform. “In terms of size and weight, that would fit under Watchkeeper, if that was a requirement,” Moore says.

The Middle Eastern market is one Thales is specifically positioning WKX to enter, according to Pierre-Eric Pommellet, EVP of Thales’ defense mission systems division. “I won’t say the countries, but you can clearly imagine,” he says. “Southeast Asia, the Middle East, South America, Europe. The United Nations also are interested in deploying services.”

There is of course one Middle Eastern nation that has a track record of producing and exporting armed UAS – but few regional neighbors are likely customers for Israeli-made systems. Whether the careful rebranding of Watchkeeper,
State Department Approves Sale of Weapons for Italian Reapers

Italy is in line to be the second country to the UK to receive U.S.-made MQ-9 Reapers that can fire weapons, and the first country to receive them after a change to U.S. policy in February made the export of armed UAVs possible.

On Nov. 4, the U.S. State Department approved the potential sale of missiles and bombs to Italy with which to arm its MQ-9 Reapers. The sale, worth an estimated US$129.6 million, includes 156 AGM-114R2 Hellfire II missiles, Joint Direct Attack Munitions and other laser-guided bombs.

Italy has long sought to add weapons to its UAV fleet. But the U.S. policy for exporting armed UAVS remained restrictive and powerful lawmakers remained opposed. With companies around the globe beginning to match U.S. UAV technology, industry pressed to change the export policies. In February 2015, a new export policy opened the door to arming UAVs sold to U.S. allies.

“IT IS IN THE U.S. STRATEGIC INTEREST TO SUPPORT ITALY’S SECURITY CONTRIBUTIONS AS A CAPABLE AND INTEROPERABLE ALLY.”

“This transfer will contribute to the foreign policy and national security of the U.S. by improving the capability of a NATO ally that has been an integral member of every recent NATO and U.S.-led operation,” says David McKeepy, spokesman for the State Department’s Bureau of Political-Military Affairs in an email. “It is in the U.S. strategic interest to support Italy’s security contributions as a capable and interoperable ally.”

Given that Italy is a close NATO ally, the sale is not likely to face opposition from Congress.

—Jen DiMascio

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Rosoboronexport Increases Sales to Middle East

Russia’s government arms trade agency Rosoboronexport is restoring ties with Iran, continuing deliveries to Syria and otherwise planning to boost sales to the Middle East region.

The Middle East and North Africa make up 36% of Rosoboronexport’s total deliveries, says CEO Anatoly Isaykin. That is a vast change from the last decade, when 80% of Russia’s arms exports were destined for just two clients – China and India. Sales to Asia-Pacific now comprise only 42% of Rosoboronexport’s total shipments. Latin America and the former republics of the USSR states receive 9% of deliveries.

Looking ahead, the Russian arms trader plans to complete the long-delayed delivery of S-300 air defense systems to Iran. Isaykin confirmed that the parties are discussing updated technical requirements for these surface-to-air missiles. Updates are needed, because the deal for five S-300PMU-1s (SA-20 Gargoyle) was inked eight years ago, in 2007. Its implementation was delayed as the delivery was banned by the Russian government in 2010. The ban was officially lifted earlier this year.

Isaykin did not disclose when the delivery to Iran may take place, but he confirmed the issue with the $4 billion lawsuit filed by Tehran to the International Court of Arbitration as the penalty for the delivery’s ban was settled. “We have a mutual agreement with Iran that the lawsuit will be withdrawn as soon as the contract takes effect,” the Rosoboronexport CEO says.

Rosoboronexport has also seriously expanded contacts with the Gulf States for the past year and half, according to Isaykin. “This concerns a joint development and manufacturing of armaments and military equipment on the territory of these countries,” he explained. It started in the 1990s, when the United Arab Emirates helped with development of the Pantsyr-S1 short-range air defense system. UAE went on to become the first customer and now operates 50 systems of the type.

Egypt may become another promising client for Rosoboronexport if it buys two Mistral-class landing ships that were initially built by France for the Russian Navy. Russian specialists are currently removing Russian-made equipment from the ships. Then, France will be able to sell them to the third countries, he says. He hopes that if Egypt buys the ships, it will also choose Russian Kamov-Ka-52K assault helicopters designed to operate off their decks. “We will respond positively [for Egypt’s request for Ka-52Ks], but we haven’t got an official request so far,” he notes.

The company continues arms deliveries to the Syrian government, but the CEO refused to provide details, citing security reasons.

The Russian arms trade agency aims to export $12-13 billion in weapons this year, keeping deliveries at a stable level for the fourth year in a row. The company demonstrated peak annual deliveries of $13.2 billion in 2013 and 2014 and had $12.9 billion in 2012. When the company was founded as a merger of two government-owned arms trade intermediaries in 2000, its annual deliveries were just $2.9 billion.

Rosoboronexport’s backlog now stands at $45 billion. According to Isaykin, the orders are more balanced now compared to the 2000s when 81% of all deliveries were for air force weapons. That segment shrank to 41%, while the land forces’ share expanded almost tenfold, to 27%. Air defense systems represent 15%, and naval weapons, 13%.

—Maxim Pyadushkin
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Gulf Carriers Grow from an Expanding Base

The public debate about the role of the Gulf carriers combined with spectacular aircraft orders has left some with the impression that the networks of Emirates, Qatar Airways and Etihad Airways are being aggressively expanded. But a closer look reveals that incoming capacity has been integrated in a much more structured fashion.

An analysis of the Big Three’s route network changes over the past five years based on data provided by OAG shows that a lot of the growth has taken place on existing routes and frequency growth rather than only in new markets.

Unlike business traveler oriented short-haul airlines, which would typically focus their model on high frequency service across the network, Emirates, Etihad and Qatar Airways have been operating many routes at relatively low frequencies given that they are almost all long-haul markets.

In terms of service to new destinations, North and South America have been the most recent focus. Over the past five years Emirates has started flying to Boston, Chicago, Dallas, Orlando, Rio de Janeiro, Seattle and Washington. It will add the world’s longest air route soon from Dubai to Panama City. Qatar Airways has in the same period added Chicago, Dallas, Miami and Philadelphia, while Etihad has introduced Dallas, Los Angeles, São Paulo, San Francisco and Washington, D.C. Together they will fly over 9,100 scheduled services in 2015 to North and Latin America, with Emirates operating 47% of those frequencies.

But while the Big Three have developed their Americas networks more in the past two years in particular, aeropolitical tensions over alleged subsidies and the proposed freezing of capacity have thrown a spotlight on that part of the market. With a 33% share of flights, Europe is still by far the most important region for the three airlines, followed by the Indian subcontinent, which is receiving 23% of all their flights. That should not be a surprise as many North and Latin American destinations imply extreme aircraft range capabilities, and flying ultra long-haul has historically been an economic challenge to all operators.

Africa is one particularly interesting element of network development: The three carriers combined have launched new service to on only four new African destinations in the past five years. Emirates started Abuja/Nigeria in 2014, Qatar Airways introduced Addis Ababa/Ethiopia in 2013 and Cape Town/South Africa in 2014, while Etihad launched service to Nairobi/Kenya in 2012. But the conclusion that Africa has not been a focus would be inaccurate. Emirates in particular has invested a considerable amount of frequency development on African routes, further cementing its already strong position in the region.

Its nearest upcoming challenger in that part of the market may actually not be Etihad or Qatar, but Turkish Airlines, which has been adopting a different approach: flying narrowbodies on long and thin routes way down into Sub-Saharan Africa, a strategy that has the potential to take away some of the first-mover advantage that Emirates has enjoyed over its rivals for so long. At least in Eastern Africa another Dubai-based airline can take advantage of narrow-body capacity. FlyDubai, the emirate’s all-Boeing 737 operator that placed an order for 100 MAXs two years ago.

The first-mover advantage is still in place, particularly when route launches over the past five years are compared. Emirates started Dallas in 2012, followed by Etihad in 2013 and Qatar in 2014. It added Phuket/Thailand to its network in the same year, and both Etihad and Qatar jumped in only last year. Etihad also introduced Washington in 2013, one year after Emirates had started flying to the U.S. capital. And of course Emirates has been in a lot of places earlier than its rivals given that the airline has just marked its 30th anniversary.

On the other hand, while still by far the biggest of the three large Gulf airlines, Emirates can no longer claim to have the broadest network: It serves 132 destinations, but Qatar Airways has 137.

A typical feature of the three networks is consistency: The basic aim of management to keep consistent and at least daily services to most destinations is clearly visible. London is the busiest route for both Emirates and Qatar Airways with eight and six daily frequencies in 2015. Etihad’s most frequented route is Bangkok at three daily flights. Over the past five years, the Big Three Gulf airlines have dropped only one route: Qatar Airways stopped flying to Stuttgart in 2012.

—Jens Flottau
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An Uncertain Future for the A380

Airbus tries to defer a decision on the re-engined A380neo, but continued uncertainty about the program threatens desperately needed new orders for the current version.

Singapore Airlines opened a new chapter in the history of commercial air transport on Oct. 25, 2007, with the first revenue flight of the Airbus A380. But even after eight years in service it is still unclear whether or not it has a bright future.

Many at Airbus (Pavilion P10, S1) had hoped the Dubai Airshow would mark a turning point in the troubled history of the aircraft with the launch of the re-engined A380neo, and a large follow-up order by the program’s most important customer, Emirates. But that doesn’t seem likely to happen, even though Emirates has made it clear it would order 100 of them.

Ironically, many attendees of this year’s Middle East aviation gathering may well fly into Dubai on board of one of Emirates’ 67 A380s. Emirates, by far the aircraft’s largest customer with 140 on firm order, will take another 21 next year.

The A380 has won praise from both operators and passengers for having raised the bar in terms of passenger comfort and is now meeting in-service reliability targets, but the recent lack of orders is a significant medium-term threat for the program, even though production appears to be secured in the short term, albeit at lower levels than Airbus had planned.

While Airbus has initially been keener to explore the A380neo project, attention appears to have shifted in recent months to promoting less-radical changes on the existing aircraft, which would give airlines some of the benefits without the multi-billion investment needed for Airbus to launch another major development. Less-spectacular modifications include changes to the cabin that would allow airlines to carry more passengers with the existing aircraft, thus reducing unit costs.

Until the market knows where Airbus is headed with the A380, decisions about major new orders appear to have been shelved by the relatively small group of large international airlines that could be considering them. Airbus nonetheless claims it expects to add to the A380 customer list before the end of the year.

Since its launch in 2000, airlines have placed orders for a total of 317 aircraft, leaving the manufacturer with a backlog of 146 aircraft yet to be delivered (as at September 2015). The orders have to be put into perspective with the 42 firm commitments for Boeing’s 747-8 Intercontinental, the only other large four-engine widebody on offer.

Airbus has delivered 171 A380s since October 2007. The aircraft have flown 105 million passengers on almost 280,000 flights, carrying an average of 375 passengers per flight. The A380 fleet is flying on average of 375 passengers per flight. The A380 fleet is flying 105 million passengers on almost 280,000 flights, carrying an average of 375 passengers per flight.

But the aircraft has had more than its fair share of troubles: The first A380 delivered to Qantas suffered an uncontained failure of one of the Rolls-Royce Trent 900 engines on takeoff from Singapore on Nov. 4, 2010; and a serious and costly longer-term disturbance has been the extensive modification program for 122 A380s that needed to have wing rib-feet and ribs strengthened following the discovery of cracks in the original design parts.

Airports are currently flying the aircraft on 100 different routes. Most are long-haul missions, although there is some limited use of the aircraft on shorter sectors such as intra-Asia or Qatar Airways’ Doha-Jeddah service.

While the aircraft can fly ultra-long-distance missions given its nominal 8,200-nm range, a significant part of its utilization is for shorter routes:

All three Middle East-based operators – Emirates, Etihad and Qatar Airways – are using the A380 extensively for European routes, typically missions of 6-8 hr. Emirates will begin service from Dubai to Copenhagen in December with the first of its new two-class configuration of 617 seats after first class has been dropped on the subfleet. Fifteen A380s will have the higher-density two-class interior installed.

Airbus also is working on more high-density layouts to make the aircraft more attractive and competitive with newer-generation twin-engine widebodies such as the 787 and A350.

—Jens Flottau
The A-29 Super Tucano is the perfect combination of attack and training capacity in a single aircraft. It was designed according to the Brazilian Air Force operational requirements. Persistence and survivability in a counter-insurgency scenario and in day and night missions make the A-29 Super Tucano the best attack platform in its category. Produced in Brazil and in the United States, the A-29 Super Tucano has been proven in combat and is used by several air forces around the world. It was selected and certified by the United States Air Force in the Light Air Support (LAS) Program. The A-29 Super Tucano is an innovative project, designed to protect people, territories and assets.
Quebec Asks Canada to Invest in CSeries

Quebec is asking Canada’s new federal government to invest in the CSeries after the provincial government agreed to put $1 billion into a joint partnership with Bombardier to take the airliner through certification to full production. The Montreal-based manufacturer, meanwhile, says a $3.2 billion write-down on development costs will accelerate returns from sales of the narrow-body airliner.

The actions unveiled on Oct. 29 follow confirmation in early October that talks had ended on Airbus taking a controlling stake in the CSeries program. Quebec will take a 49.5% stake in a new subsidiary Bombardier will form to complete development, and manufacture and support the aircraft.

The agreement with Quebec “is a key milestone to ensuring the program’s success,” says Bombardier CEO Alain Bellemare. “With this investment we are more confident in our capacity to bring production to fruition. Together we will launch the CSeries to commercial success.”

After the announcement, Quebec’s economy minister, Jacques Daoust, reached out to the new Liberal government’s minister for innovation, science and economic development, Navdeep Bains. “We think the federal government should support the aerospace industry in Quebec like they supported the automobile industry in Ontario,” the Quebec ministry says.

“The scope and details of their contribution, if any, will have to be discussed,” the ministry says. “However, if the coming of another partner is desirable, it is not essential to the success of the CSeries program.”

Bombardier’s write-down on capitalized C Series development costs, together with another $1.2 billion charge for cancellation of the already-paused Learjet 85 business jet program, helped push the company to a net loss of $4.9 billion for the third quarter.

Bombardier’s results were already weak before the charges, largely because of the May decision to cut production of the Global 5000/6000 large business jet to 50 aircraft a year from 80. Revenues were down to $4.1 billion, from $4.9 billion a year ago, mainly on lower regional jet deliveries.

The economy ministry says its investment will comply with World Trade Organization (WTO) rules on government subsidies.

The company estimates it will require another $2 billion to take the CSeries program to cash-flow-positive production in 2020-21, with the bulk of that investment coming in 2016.

Half of that is to come from Quebec. Some analysts believe it will take another $2.5-3 billion. The company says it expects to spend a combined $1.9-2.2 billion on the CSeries and Global 7000 in 2015 and a similar amount in 2016.

Certification of the 110-seat CS100 is still expected by year-end and entry into service in the first half of 2016. Flight-test is 97% complete, and certification 90%, the company says. The 130-seat CS300 will follow six months later. Bombardier expects to deliver 15-20 aircraft in 2016, followed by a gradual ramp to full-rate production by 2020. —Graham Warwick

Bombardier’s CSeries CS100 is making its Middle East debut here at the Dubai Airshow.

Rolls-Royce Trent XWB-97 for A350-1000 Takes to Skies

The Trent XWB-97 for the Airbus A350-1000 made its first flight on Nov. 5 on an Airbus A380 test-bed.

**THE MOST POWERFUL** Rolls-Royce production engine ever flown, the 97,000-lb.-thrust Trent XWB-97 for the Airbus A350-1000, has entered flight test under the wing of the aircraft manufacturer’s A380 flying test bed.

The 4-hr., 14-min.-long flight, which took place from Toulouse on Nov. 5, marks the start of an intense flight test campaign aimed at certifying the engine before the first flight of the A350-1000, which is planned for the second half of 2016. The engine is a more powerful derivative of the 84,000-lb.-thrust Trent XWB-84 now in initial operation on the A350-900, the first 10 of which are in service with three airlines. The Trent XWB-97 is the exclusive engine for the stretched A350-1000, which is due to enter commercial service in 2017.

Airbus says the engine’s operation and handling qualities were evaluated from low speeds to Mach 0.87 during the flight. The campaign, which will cover hot weather trials as well as icing tests, will focus particularly on the performance and operability of the engine’s new features.

The flight test effort on the A380 prototype is expected to run for up to nine months and will de-risk the coming A350-1000 flight test program. —Guy Norris
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Turkish Weapon Could Arm U.S. F-35s

Lockheed Martin could offer Turkey’s Stand-Off Missile (SOM-J) as a weapon for U.S. Air Force and Navy F-35s, after signing a deal with a Turkish manufacturer to develop the weapon.

Lockheed Martin (Stand 1260) and Roketsan (Stand 636) signed a contract on Sept. 16 to cooperatively develop the SOM-J, a smaller version of Turkey’s indigenous SOM-A/B weapon.

SOM has been in development since 2006 and is now operational with the Turkish Air Force on both the McDonnell Douglas F-4 Phantom and its locally produced F-16 Fighting Falcons.

SOM-J has been designed to fit into the weapons bay of the F-35A and F-35C and will have a range of around 100 nm. Primary guidance is provided by GPS, aided by an inertial, terrain-referenced and image-based navigation system as well as imaging seeker. The weapon has been developed to be effective against land and sea targets. It will feature a 500-lb. semi-armor-piercing warhead.

The two companies hope to have the weapon ready for trials in around 24 months. However, the SOM-J will face competition from Raytheon (Stand 1240), which has teamed with Norwegian defense company Kongsberg to offer that company’s Joint Strike Missile version of the Naval Strike Missile (NSM). —Tony Osborne

Jordan Selects Pilatus PC-9M for Flight Training

The Jordanian defense ministry has selected the Pilatus PC-9M turboprop training aircraft as the country’s air force modernizes its flight training fleets.

The Royal Jordanian Air Force (RJAF) has signed a contract for nine aircraft, as well as a simulator, training equipment and a logistics support package, the Swiss aircraft producer announced on Aug. 10.

The company says the order came after several years of “hard negotiations” and will be used for advanced pilot training.

The air arm currently uses the Slingsby Firefly light aircraft for basic training and the CASA, now Airbus Defence and Space, C-101 Aviojet for advanced training. However, it is unclear whether the PC-9s will replace the Aviojets or supplement them.

Pilatus (Chalet C12) says the RJAF PC-9s will be ready for delivery from January 2017.

Satair Boosts Middle East Parts Support

Satair Group is expanding its 3,700-sq.-meter facility in Dubai by 800 sq. meters to increase capacity to support aircraft operators in the region. Originally established as an Airbus warehouse in 2008, the site hosted a number of smaller suppliers in what was called its Vendor Village. With Satair Group (Stand 1913) now part of Airbus, the Dubai warehouse still offers provisioning for other manufacturers’ aircraft – but the expansion is due, mainly, to the arrival of the A350XWB.

“Right now we’re at about a quarter of a million parts on the shelf, with about 20,000 different part numbers,” says Satair’s Middle East managing director, Terry Stone. “That’s over double from where we started almost 10 years ago. The A350XWB is coming online with Qatar – they’re operating four aircraft – and obviously that airplane’s going to grow in the region. There’s heavy focus on both the A350 and the A380.”

Air show headlines of extensive orders by the major regional airlines have implications for facilities such as Satair’s spares warehouse. The company runs five- and 10-year planning analyses to ensure they take decisions in enough time to be ready to support not just local fleets but also aircraft from elsewhere that require parts while in the region.

“The challenge is to be positioned with the right kind of parts, the right kind of support strategy, and with availability and pricing to meet the requirements,” Stone says. “It’s a chess game, and it’s always challenging.”

Even with growing fleets of very young aircraft in the region, another possible growth area is in previously owned parts.

“The customer demand in our region hasn’t developed yet,” says Stone, “but it will. Everybody’s looking at budgets, and there’s nothing wrong with a used part. There’s a perspective that money’s no object here in this region, but that’s not true – the customers want value.”

—Angus Batey
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A team of three Ph.D. students from the Sharjah campus of Khalifa University may have found a method of solving a perennial problem for the region’s aviation industry. And in the process, they could also have identified a new application for unmanned aircraft.

“We wanted something really innovative,” Sameera Adulrahman Almulla told ShowNews during last month’s Commercial UAV Show in London. “Ninety percent of the projects are based on image processing. It’s rare that any of these drones are used for something that I believe is more innovative.”

Sameera and her colleagues came up with the idea of using a small UAV for fog mitigation after deciding to enter the UAE government’s “Drones for Good” competition. The initial use they envisaged was to clear fog on Emirati roads. After investigating the economic impact of fog on airport operations, the team extended their plan to a mitigation system that could work for runways.

“It took around four to five months to understand the fog and how we can dissipate it,” Sameera says. Dry ice can dissipate cold fogs, but the UAE’s warm fogs required a different approach. The team hit upon the idea of using a 6% brine solution, which – while its potential impact on the maintainability of aircraft and runways remains untested – is a more environmentally responsible alternative to a chemical-based dissipation agent.

“We had several challenges,” says Sameera. “We had the challenge of using drones, we had the challenge to spray our solution with the very limited power that we have on the drone, and we had another challenge in that we wanted to test our approach and the fog is a natural phenomenon – so we needed to create a fog and we needed to use the drone to spray and to check our concept. Could it get the results that we are aiming for?”

A small rotary UAV – the Typhoon quadcopter – was selected as the delivery mechanism. The 10-kg aircraft is capable of carrying a 40-kg payload of brine solution, though a key issue that needed to be overcome was maintaining stability in flight with a liquid payload. Work on flight control was carried out by the supplier, the Dubai-based design and distribution company Ultimate UAV, which partnered with the students for the competition.

According to their tests, the team found that spraying 3.5 ml of solution would clear 1 cu. meter of fog. They built a fog chamber and found that within 20 min., fog can be dispersed sufficiently to improve visibility by 95%. To deliver this performance over a larger area would require several aircraft working together. “We would divide the runway into three layers, and would need about seven drones to clear it in 20 minutes,” says Sameera’s colleague, Khawla Abdulla Alghafli.

The concept of using the UAV to clear an artificially created fog was proven with a flight during the competition. There have been no further tests, though Etihad Airways has had initial discussions with the team that may lead to further work. Etihad’s hub, at Abu Dhabi, is particularly susceptible to fog.

“Etihad faces this problem many times during the year,” says Khawla. “They close the airport for one or two hours when the visibility is reduced to zero. So we suggested to them that during this closed time we could use our drones, so there’d be no danger.”

Trials of the technology on active runways will obviously prove difficult to carry out from safety, regulatory and legal perspectives. But it may not be necessary to fly the UAVs in airspace that includes manned aircraft’s flight paths.

“Planes are very advanced – even if there’s fog they can land,” Sameera says. “The problem is in taxiing, and moving the planes to the right terminals. I think this can be an opportunity for us, because now we would be in a safe zone. The flight is already down. This is the area we need to focus on, rather than the main runways.”

Even if it goes no further, the fog-dissipation concept has shown that there is much more to UAV technology than providing aerial surveillance capabilities in smaller packages.

—Angus Batey

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We’re the best for your business!
Lockheed Martin has been working on automation on the K-Max.

Lockheed Sees Growth In International Markets From Sikorsky Acquisition

Lockheed Martin expects its international organization to learn from Sikorsky’s commercial business following completion of the defense giant’s US$9 billion acquisition of the helicopter manufacturer.

“Sikorsky platforms open up about a dozen new countries where Lockheed Martin does not have a presence,” says Dan Schultz, the Lockheed executive named president of Sikorsky.

Schultz says there are no plans for immediate layoffs following the acquisition, but Lockheed (Stand 1260, Chalet A19) expects “to drive cost out in the supply chain” by integrating the helicopter manufacturer into its operations.

Sikorsky has become part of Lockheed’s Mission Systems & Training sector, which is already prime contractor for the U.S. Navy’s Sikorsky MH-60R/S Seahawks and the principal supplier to Sikorsky on the Navy’s VH-92A presidential helicopter and the Air Force’s HH-60W combat rescue helicopter programs.

“So many things will be enhanced,” says Schultz, who led the Sikorsky integration efforts for Lockheed ahead of the deal closing. “There are synergies in complementary technologies,” he says.

One of these areas is autonomy, where Sikorsky is working under the company-funded Matrix Technologies program while Lockheed has the unmanned K-Max and other programs.

“We do not have the same approach, says Schultz. Sikorsky is working the inner loop of the flight control system.

United Technologies sold off Sikorsky because, as a prime contractor, its margins and growth were not as high as in the company’s other businesses including suppliers Pratt & Whitney and UTC Aerospace Systems.

RAAF Airbus A330 MRTT Refuels F-35A

An Airbus A330 Multi-Role Tanker Transport of the Royal Australian Air Force has successfully refueled a U.S. Air Force F-35A Joint Strike Fighter. During a 4-hr. sortie from Edwards AFB, California, the tanker, known in RAAF service as the KC-30A, conducted 59 contacts including five “wet contacts” during which 43,200 lb. of fuel were passed. All the refueling was performed using the Airbus Airborne Refueling Boom System. The A330 MRTT is the only new-generation tanker/transport certified and in-service and the first to refuel the F-35A.

Oman Orders NASAMS Missile System

The Omani government has signed a US$1.28 billion deal to purchase the National Advanced Surface to Air Missile System (NASAMS) from Raytheon (Stand 1240) and Kongsberg. The companies have not said how many missile batteries are included in the direct commercial sale contract, but the package does include ground-support equipment, training and technical assistance. Raytheon, along with its long-term partner Kongsberg, will supply the system to The Sultanate of Oman. Work under the contract will be performed by Raytheon at its Integrated Air Defense Center in Andover, Massachusetts, and in Kongsberg, Norway.

India Approves Apache, Chinook Deal

After a delay of over three years and several price extensions, India gave final approval to purchase 22 Apache AH 64D Longbow attack and 15 Chinook CH-47F heavy-lift helicopters from the U.S. The Cabinet Committee on Security (CCS) on Sept. 22 cleared the deal, which is expected to cost around US$3 billion. The Indian Apache deal will involve a direct commercial sale with Boeing for the platform and a foreign military sale with the U.S. government for munitions, training, aircraft certification and components including engines, EO sensors and the fire control radar (optional).

Finmeccanica Thermal Imaging to Middle East

Finmeccanica – Selex ES (Chalet A56, A57) has signed a contract to supply a number of Horizon HD Infrared (IR) cameras to a customer in the Middle East for long-range surveillance applications. The launch order, which was placed after a competitive tender, is a pilot purchase with the potential for further sales following an initial usage period. Deliveries will begin immediately and will be completed before the end of this year. Horizon HD is a Medium Wave Infrared (MWIR) thermal imaging camera that offers sustained performance, even at extremely long range.

Egypt Buys Sagem’s Hammer Missile

Egypt has become the second export customer for Sagem’s AASM Hammer air-to-ground missile. The weapons will be used to arm Egypt’s new fleet of 24 Dassault Rafales ordered by Cairo in February. Sagem will deliver the first Hammers to Egypt by the end of 2016. The company says the order covers the three different versions of the weapon: the hybrid inertial/GPS guidance, inertial/GPS and terminal infrared guidance and inertial/GPS plus laser terminal guidance variants. The weapon is already in service with the French air force and French navy on their Rafale fleets. The weapon is also in use with the Moroccan air force on its modernized Mirage F1s.
P&W Launches Final Push for GTF

Pratt & Whitney is poised to realize its decades-long goal of introducing the geared turbofan into commercial service with certification of the PW1100G-powered Airbus A320neo and PW1500G-powered Bombardier CSeries expected within weeks.

Together with the imminent first flight of the PW1200G-powered Mitsubishi Regional Jet, the start of flight tests of the PW1900G for the Embraer E-Jet E2 on Nov. 3, and advanced certification work on the PW1400G for the Irkut MC-21, the upcoming milestones on the A320neo and CSeries represent the most significant period for Pratt since the launch of the PW1000G family in 2008.

“It’s a historic quarter for Pratt & Whitney,” says the company’s Commercial Engines president Greg Gernhardt. Despite development issues encountered during flight tests of the Pratt-powered A320neo, certification and first delivery remains on schedule by year-end, he adds.

Certification work is coming to a close and “production engines are ready to go,” says Gernhardt. “All three test aircraft are flying and really racking up the hours, with either certification or function and reliability [F&R] testing.”

The Pratt & Whitney-powered test fleet has amassed more than 813 hr. over 293 flights to date. The lead aircraft, which was grounded for three months earlier this year after a manufacturing fault was discovered in a snap ring, has built up more than 264 hr., most recently shuttling on simulated airline flights between Toulouse and Kiruna in northern Sweden. Testing was also interrupted in September after a compressor rub was discovered in the first aircraft, but Airbus has since insisted that first deliveries remain on track for year-end.

“We are confident we will meet our contractual commitments to Airbus on fuel burn,” says Gernhardt, who adds that tests also confirm the engine is meeting or exceeding specification on noise, emissions and reliability. “If you look at this over some of the last few engine programs, hitting this at entry-into-service I view as quite the accomplishment,” he says.

Transport Canada certification of the PW1500G-powered CS100 remains “on track for completion this quarter” says Gernhardt. “Flight tests are going great and F&R flights have started,” he adds. Lessons learned from the other test programs have been shared between the three main engine families. “It’s nice to see that approach coming home. The commonality between the CSeries and Embraer engines (PW1500G and PW1900G for larger E190/195-E2 versions), is north of 95%,” he adds.

Flight tests of the PW1900G have meanwhile begun on Pratt’s 747SP flying test bed in Mirabel, Canada. Although intended as a relatively short test campaign because of commonality with the CSeries engine, evaluation may extend into early 2016. Embraer plans to begin flying the first E190-E2 in the second half of 2016, with entry into service set for 2018. —Guy Norris
S\text{warming like bees around an elephant, Yves Rossy, the Swiss inventor of the jet engine-powered wing, and his protégé Vince Reffet, earlier this month conducted an unprecedented formation flight over Dubai with an Emirates Airline Airbus A380.}

Two of the world’s smallest and largest flying vehicles were brought together in a carefully choreographed event by the Jetman Dubai formation team. The A380 was flown in a holding pattern at 4,000 ft. below a helicopter hovering at 5,500 ft. Rossy and Reffet, a skydiver and BASE jumper, dropped out of the helicopter and dived down to formate on the A380, which was flying in approach configuration with flaps set to 26 deg., slats to 23 deg. and ailerons drooped 5 deg.

The A380 flap settings allowed the winged jetpack flyers, which have a maximum speed range between 140 and 170 kt., to maneuver alongside the behemoth as it flew over Dubai with the Palm Jumeirah and Burj Khalifa as the backdrop. The flying wings, each powered by twin JetCat P400 turbojets, were positioned off each wingtip and flown sufficiently above and behind the A380 to ensure safe separation from potentially dangerous interactions with the aircraft’s wake vortices.

Commenting about the spectacular flight in the local media, Rossy says “you look to one side and it’s like a flying building next to you.”

Rossy, who developed and built the wing-suit system incorporating a backpack equipped with semi-rigid, 7.9-ft.-span carbon-fiber wings, rose to fame in 2008 when he flew the jetpack over the Alps. In 2009, he ditched in the Mediterranean while attempting to cross the Straits of Gibraltar and two years later he reportedly flew over the Grand Canyon in Arizona. —Guy Norris

**Twin Otter Parachutes Into Dubai**

Abu-Dhabi-based drone manufacturer Adcom, exhibiting here, has sponsored skydiving in Dubai.

DUBAI WILL BE HOSTING a second aviation event at the end of this month when the World Air Games arrives on Nov. 30. That’s why Canadian aircraft manufacturer Viking Air is delivering a new-built DHC-6 Twin Otter 400 to Skydive Dubai for taking competing parachutists aloft.

The aircraft was purchased through Viking’s exclusive sales representative for the Middle East and Turkey, Veling Tayara, and is the first non-military example of a Series 400 in the region. Veling Tayara is exhibiting at the show and is a subsidiary of the Mauritius-based airline leasing firm Veling, whose clients include Emirates, Sri Lankan and other airlines.

Established in 2010, Skydive Dubai is a commercial operation with a main campus 30 mi. (50 km) southeast of the city of Dubai, plus a forward landing runway and dropping zone on the waterfront, adjacent to Dubai marina and the Palm Jumeirah. This DZ is operated under the regulations of the Emirates Aerosports Federation.

“’The Twin Otter design is perfectly suited for Skydive Dubai’s operations, and we expect our new Series 400 aircraft will be featured throughout the World Air Games here in Dubai,” commented Bani Younis Ahmed, Skydive Dubai’s technical maintenance manager.

Skydive’s business has been all up and down in recent months. In July, 15 parachutists walked away unscathed after a Cessna Caravan crash-landed immediately after takeoff from the main campus, while last month, a 47-year-old Twin Otter partly overran the sea wall while landing at the Marina after disgorging its cargo.

A new-built “Twotter” will be just what is required to ensure that the thrills of parachuting only begin after the aircraft is vacated.

—Paul Jackson

Skydive Dubai has brought one of its older Twin Otters, a DH6-320, to the Dubai Airshow.
Airbus Helicopters is hoping it can generate interest in its new H160 twin-engine medium helicopter here in the Middle East.

The company is displaying its mockup of the aircraft for the first time at Dubai, before marketing of the helicopter – which made its first flight in June – begins in 2016.

The company is preparing to fly the second prototype, PT2, by the end of the year. This will be the first aircraft to be equipped with Turbomeca’s Arrano 1A engine, which will now be the sole source engine for the aircraft, following the company’s decision in February not to offer the aircraft with Pratt & Whitney Canada’s PW210 powerplant.

The first prototype PT1 flew with the P&WC engines, but they will be swapped out for the Turbomeca engines once PT2 is flying. Test pilots are in the process of expanding the helicopter’s flight envelope. They have taken the aircraft to 15,000 ft. and 175 kt. so far.

The H160 is the replacement for the Dauphin family of helicopters, which includes the AS365N3, and the larger, widebody H155, previously known as the EC155.

Both helicopters have enjoyed steady sales in the Middle East over the years, particularly the Dauphin, which serves with a number of Middle Eastern navies in its military Panther guise.

However, Airbus is targeting the H160 as a rival to AgustaWestland’s AW139, which has enjoyed huge success in the region with several dozen operating here in the UAE on VIP and search and rescue duties.

Airbus hopes to capture 40% of the medium market with the H160.

First deliveries are planned for 2018.
Japan Chooses the Boeing KC-46A; Airbus prolongs the A330 MRTT, saying they will be available until at least 2025 as newly built aircraft, with the A330-200 staying in production for the purpose. This follows studies of an MRTT adaptation of the A330-200’s successor, the A330-800.

Boeing finally has an export customer for the KC-46A Pegasus tanker, though Japan, did not have another a choice as Airbus declined to bid. Airbus, meanwhile, is committing itself to build the rival A330 MRTT into the 2020s, while looking at adding surveillance systems to the type.

Japan says it will buy three KC-46As for 20.8 billion yen (US$172.2 million) each in its budget for the fiscal year beginning in April 2016. The 767-based aircraft are due to enter service in 2020, joining four Boeing KC-767Js that the Japanese air force received in 2008-09.

Before Defense Minister Gen Nakatani announced Tokyo’s decision on Oct. 23, the A330 MRTT, selected by 10 non-U.S. customers, had not lost a competition against the KC-46A except for the second round of bidding to fill the U.S. Air Force’s requirement. An A330-based tanker won the first round. Moreover, the Japanese win followed South Korea’s notable decision in June to set aside its preference for U.S. equipment and select the A330 MRTT.

The U.S. company faces longer and stronger competition in this market. Until now, it may have reasonably hoped that the A330 MRTT would begin to fade away around 2019, when Airbus was expected to cease building the base commercial aircraft, the A330-200, limiting its tanker offering to converting used airliners.

But Airbus says A330 MRTTs will be available until at least 2025 as newly built aircraft, with the A330-200 staying in production for the purpose. KC-46A production will run until 2028 for the U.S. Air Force.

Airbus is also planning improvements to its tanker. The head of military aircraft for Airbus Defence and Space, Fernando Alonso, says the aircraft could do more than wait for fighters while flying racetrack patterns. “It’s got a lot of volume and big wings,” Alonso says. “We will be looking at ways of how to use this space, how can we add other sensors...gathering intelligence and listening.”

Airbus is looking at installing a wideband satellite communications system and adding identification friend or foe mode 5 capability, says A330 MRTT program head Antonio Caramazana. It also is talking to Australia about fitting a VIP suite in two aircraft.

Boom refueling could be partly automated. Airbus is studying the feasibility of a system that would automatically fly the boom to align it with the receptacle on the receiver aircraft, though the boom operator would still extend and retract it. The operator would need less training and fewer missions would be aborted, says the company, which plans to install such a system onto its A310 boom demonstrator.

Airbus is working on the first A330 MRTT Enhanced, a version based on the latest specification of the airliner, with a gross weight of 242 metric tons (536,000 lb.). The first unit is one of six ordered for the Republic of Singapore Air Force; aircraft of the same standard for France and South Korea will quickly follow, with each of the three countries receiving its first in 2018.

To expand its A330 MRTT fleet, Australia decided this year to convert two used A330-200s, rather than buy Enhanced aircraft, because it did not want the complications of a new build standard, says Caramazana.

The U.S. has asked A330 MRTT users to undertake a full receiver clearance program, ensuring that the Airbus tanker can refuel U.S.-built aircraft. As a result, Australia has sent an A330 MRTT to Edwards AFB, California, to perform clearances with the A-10, F-15C/D/E, F-16C/D, C-17A, B-1B, AV-8B, F/A-18 and EA-6B. A UAE A330MRTT will be used for another round of testing, with clearances to be completed over the next 12 months.

An Australian A330 MRTT refueled an F-35A in September. One of Britain’s A330 tankers, called Voyagers, will demonstrate refueling of the F-35B in the first half of 2016.

—Guy Norris, Tony Osborne, Bradley Perrett
Whoever said dreaming is free has clearly never spoken to Capt. Khalid Al-Ansari. The Emirati pilot, who flies transport aircraft for the government, has spent “enough money to build a house” on a concept that would use airships to turn the cities of Dubai and Abu Dhabi into living exhibits in a most unusual gallery.

His “Spirit of the Emirates” project (Stand 1908) would see a fleet of three Zeppelin NT airships carrying paying passengers on flights of between 30 min. and 3 hr. A tablet-based augmented reality system will annotate the view from 1,500 ft. above the cities.

“We’re talking about a very high-end, luxury platform,” Khalid tells ShowNews. “The augmented reality will make the country like a big museum, and for the passenger it will be walking inside that big museum with the device telling you about it in the language that you prefer.”

Over the past 12 years, Khalid’s research has taken him to the U.S., France and Germany, where he has flown on a variety of airships. He settled on the Zeppelin NT as his preferred platform following flights at the company’s Friedrichshafen headquarters. The existing Zeppelin NT aircraft would suffice for the role, but modifications would be needed to equip the cabin with suitable climate control capabilities.

Khalid has had initial approval for the idea from the UAE’s General Civil Aviation Authority, though formal permissions would depend on the final aircraft configuration. He is seeking funding and believes the project could be in profit within five years.

“I think it’s the right time to show the idea to decision-makers and to the public,” Khalid says. “I’d also like to show people that we need to have some new and different projects in the nation.”

What has kept the dream going has been Khalid’s love of the airship experience.

“It’s very, very different to anything else in the sky,” Khalid says. “It’s very quiet, very friendly. I’ve felt joy and pleasure flying on airships: The feeling of floating is amazing.”

—Angus Batey
‘New’ Ameco will Keep Focus on International Business

“New” Ameco Beijing has been created by merging Air China’s in-house MRO arm Air China Technics into the former Ameco Beijing (Stand 1520), itself a joint venture between Air China and Lufthansa German Airlines formed in 1989. While the German shareholding in new Ameco Beijing has been reduced from 40% to 25%, the amount of its investment remains the same, says Chai Weixi, VP of Air China and CEO of new Ameco.

“In the new structure, Air China and Lufthansa will continue their cooperation. Lufthansa’s vision of Ameco’s successful development remains unchanged, while Air China still regards Lufthansa as a very important partnership for the development of new Ameco,” says Chai.

“New Ameco and Lufthansa Technik will continue to cooperate on large-scale projects such as landing gear overhaul, as well as MRO industry development. Transfer of technology will be unchanged, and sharing of experience and know-how will continue.”

The merging of Air China Technics and Ameco will reduce duplication of resources while adding to the capabilities offered to customers. It also aligns MRO activities at nine branches located in Chengdu, Chongqing, Hangzhou, Tianjin, Hohhot, Shanghai, Guiyang, Wuhan and Guangzhou with the Beijing base. Together they hold maintenance licenses from almost 30 countries or regions, including CAAC, FAA and EASA.

While its prime role is to maintain and service Air China’s growing fleet, “New Ameco will establish multi-bases and network services, committing to providing third-party customers with high quality and comprehensive services,” says Chai. And while integration is under way, Ameco will continue to pursue international business even more strongly than before.

Lufthansa Technik and Ameco will continue to have their own sales teams to look after their own customers separately. But the new Ameco, with greater capabilities than before, expects to be even busier, says Chai.

For example, Ameco is developing an aircraft-related components repair capability coupled with composite repair. It is also focusing on new aircraft types, such as aircraft overhaul of Boeing 747-8Is, and line maintenance on Boeing 787s and Airbus A350s. And it has just added V2500 engine overhaul capability.

“After integration, new Ameco is much stronger in its capabilities, output and network than before,” says Chai.

“It also has sufficient resources, assets and channels, which bring a stronger ability to serve customers in overseas markets. We believe our products are more competitive than ever before.”

Notes Johannes Bussmann, who became chairman of Lufthansa Technik’s executive board in April, “This is a partnership we have been involved in for many years and we want to keep it like that. The investment that Lufthansa has there didn’t change on an absolute basis, but by the integration of Air China Technics a lot of line maintenance capabilities came to the new Ameco.”

GKN Completes Acquisition of Fokker

British aero-structures manufacturer GKN has completed the acquisition of Fokker Technologies. The €706 million (US$779 million) takeover by GKN from Fokker’s owners Arle Capital first announced in July was finalized on Oct. 28, following approvals from the European Commission at the beginning of September.

The EC at the time concluded that the proposed takeover raised no competition concerns since the overlaps between the two companies’ activities “are very limited” and thus compatible with the European Union’s merger regulation.

The takeover of Fokker has given GKN new capabilities in composite and advanced metallic components, as well as strong competencies in wiring systems and landing gear, both of which are seen as potential growth areas because of increasingly stringent environmental targets that demand more integrated, lighter structures.

The deal also opens the door to additional work on the Airbus A350 and the F-35 Joint Strike Fighter, and also includes Fokker’s 5.5% share in the NHIndustries consortium with Airbus Helicopters and AugustaWestland to produce the NH90 military utility helicopter.

The Fokker brand will be retained under its current leadership and will operate as a new division within GKN Aerospace (Stand 2052). Fokker’s headquarters will also remain in the Netherlands.

—Tony Osborne
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UAE Plans 2020 Mission to Mars

The United Arab Emirates is planning the first Arab mission to Mars with a robotic mission dubbed “Hope” that the government says will create mankind’s first integrated model of the Red Planet’s atmosphere.

Development of the unmanned probe is being led by the UAE Space Agency, established in July 2014, with plans to launch the spacecraft in 2020. Designed to operate for up to four years, Hope’s arrival at Mars in 2021 is planned to coincide with the UAE’s 50th anniversary.

“The Emirates Mars Mission will be a great contribution to human knowledge, a milestone for Arab civilization and a real investment for future generations. This probe represents hope for millions of young Arabs looking for a better future,” UAE VP and Prime Minister Sheikh Mohammed bin Rashid Al Maktoum said in a statement earlier this year.

The UAE Space Agency says Hope’s unique instruments will produce “entirely new types of data” on the Martian climate, sending back more than 1,000 GB of data to be analyzed by research teams in the UAE and shared with more than 200 institutions worldwide. The data could enable scientists to build the first holistic models of the Martian atmosphere and potentially understand changes in Earth’s atmosphere that have occurred over millions of years. It may also be used to evaluate the atmospheres of thousands of newly discovered planets that exhibit conditions capable of sustaining life.

The UAE is one of a number of Middle Eastern countries that is gradually building a portfolio of space initiatives in response to growing instability in the region and a desire to spur local industry.

The Emirates investment in space technologies to date has reached more than AED 2 billion (US$5.5 billion) and includes satellite data and TV broadcast company Al Yah Satellite Communications, mobile satellite communications provider Thuraya and the remote-sensing DubaiSat-1 launched in 2009 by the Emirates Institute for Advanced Science and Technology (EIAST).

Developed with technical assistance from South Korea’s Satrec Initiative, the remote-sensing spacecraft can collect imagery at 2.5-meter ground sampling distance in panchromatic mode and 5 meters in color.

A follow-on satellite, DubaiSat-2, launched in 2013, is capable of imaging objects at 1 meter in black and white and 4 meters in multispectral.

The UAE is now working on development of a sub-meter Earth imaging satellite, KhalifaSat, expected to launch in the coming years. It will be the first satellite developed and manufactured by UAE engineers, albeit using South Korean facilities.

—Amy Svitak

UAE Space Agency Debuts at Dubai

Exhibiting for the first time at the Dubai Airshow is the newly formed UAE Space Agency (Stand 1505). Created in 2014, the agency aims to regulate and support the UAE Space sector and contribute to the diversification of the national economy by providing a national advanced space industry.

The global space industry is worth US$300 billion and is growing at 8% annually. The UAE’s investments in space technologies have already exceeded AED 20 billion (US$5.4 billion), including UAE-based companies that are now major international players. The companies include Mohammed bin Rashid Space Center (Stand 1146), Al Yah Satellite Communications Co. (Stand 1200) and Thuraya Telecommunications Co.

H.E. Khalifa Mohamed Al Romaithi, chairman of the UAE Space Agency, said, “Our mission as an agency is to shape and guide the space sector in the UAE, with a vision to be among the top countries in the field of space and aerospace by 2021. The Dubai Airshow is the center of the aerospace industry and an ideal place for us to work toward this mission in the presence of the leading players in the industry.”

Arabsat-6B and GSAT-15

Arabsat-6B and GSAT-15 are being built for the United Arab Emirates armed forces and 2019. These two high-performance Earth observation satellites are being built for the United Arab Emirates armed forces by Airbus Defence and Space and Thales Alenia Space.
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Middle East Business Aviation Growth Slows

Middle Eastern business aviation activity is pretty resilient, say many in the industry, but while some try to talk the market up, others working at the sharp end cast a relatively gloomy picture and await an upturn in activity.

Business aviation activity is patchy across the Middle East and North Africa (MENA), according to Ali Alnaqbi, chairman of the Middle East Business Aviation Association (MEBAA). But in August there was a significant pickup that was linked to the worsening situation in Yemen. “Government departments were chartering left, right and center so that ministers could attend meetings all over the region. So, although private flying numbers were down, government charters largely compensated for the shortfall and the numbers were acceptable to us,” says Alnaqbi.

There are around 620 business aircraft across the 23 MENA countries. Bahrain and Kuwait movements were down, but there were a sustained number of movements in the UAE. Aircraft movements in Egypt have increased significantly, while Lebanon has seen fluctuations. “There was some movement in Baghdad, but operators have been warned off operating into potential war zones by various national authorities,” says Alnaqbi.

Some fixed-base operators (FBOs) are less optimistic. Mike Berry, VP of ExecuJet Middle East (Stand 1800), says “The outlook from general aviation operators [in the Middle East] is not a rosy picture. We still see opportunities for growth, but the way the market is right now we are not going to see a dramatic increase in business activity over the next year. I believe this is a generally held view by everyone in the business aviation industry at the moment.” ExecuJet Middle East has an FBO and MRO (maintenance) operation at Dubai International Airport, and a handling operation at Dubai World Central. Berry, among others, reckons the factors driving this downturn include the decline of the Russian ruble, the dramatic drop in oil revenues and continued worries over the Chinese economy. “We’re pretty much operating at the same activity levels that we achieved last year, and in some respects we’re about 10% down on figures we achieved two years ago in terms of FBO movements. “There’s just not as much traffic coming through Dubai as there was two years back. I think this is generally felt by all the operators, aircraft charter and FBOs; we know that numbers are down.” But not everything is doom and gloom, he says, referring to his company’s managed aircraft fleet, which continues to grow.

Another Middle Eastern company executive claimed to have had slight seasonal deviations over the last two years but notes that 2016 looks tough, with the Russia/Ukraine situation in particular having a definite impact on business.

—Mike Vines

Aircraft Industries Flies L 410 NG Prototype

AIRCRAFT INDUSTRIES CO., a Czech manufacturer of small civil aircraft, flew its prototype L 410 NG model on July 29, and the aircraft is currently in flight test. The aircraft is a “substantially upgraded turboprop commuter that inherits the best of the company’s current production model, the L 410 UVP E20.”

The L 410 NG’s new wing structure with integral fuel tank and increased fuel capacity enables a longer maximum range (1,553 mi.) and endurance (10 hr.). The all-metal, high-wing twin turboprop can transport 19 passengers and with its increased maximum payload (4,749 lb.) and larger front luggage compartment, which increases the total luggage compartment volume to 105.24 cu. ft., the aircraft can carry up to 882 lb. more luggage/cargo. The L 410 NG features General Electric GE H85 engines with 850-hp maximum takeoff power and AV725 propellers. Garmin G3000 avionics will be up front.

In its standard version, the L 410 NG is intended for short-haul transport from remote and undeveloped areas to major cities. It also can serve as a maritime patrol and surveillance aircraft. Aircraft Industries (Stand 1947) plans to produce up to 30 L 410 NG aircraft per year.
Safran says new issues with engine-case distortion on its Snecma Silvercrest engine will take at least 12 months to resolve, dashing hopes for a first flight this year of Dassault Aviation’s largest and most advanced Falcon business jet, the 5X.

“18 months really, at the max, but ... my target is 12 months,” Safran CEO Philippe Petitcolin said during the company’s Oct. 22 conference call with investors. Eric Trappier, Chairman and CEO of Dassault Aviation, says the engine delay has prompted his company to slow work on the Falcon 5X. “There is no sense in making planes ahead of schedule if the motor is not going to be ready,” he notes.

Dassault (Stand 830, Chalet A36) rolled out the new business jet during a June ceremony at its final assembly facility in Merignac, France, the company’s first clean-sheet design since the Falcon 7X in 2007.

Featuring a large cabin and a range of 5,200 nm (9,630 km) at Mach 0.8, the Falcon 5X will be powered by two 11,450-lb.-thrust Silvercrest engines, which are expected to make it the most fuel-efficient jet in its class. It lists for $45 million at 2013 values.

During the June rollout, Trappier said the company was targeting a first flight of the Falcon 5X over the summer, with plans to enter service in 2017. Delays to the engine up to that point involved difficulty in modifying a Gulfstream II flying testbed to accommodate the large powerplants, and reworking the Silvercrest’s oil-fuel heat exchanger.

Snecma (Chalet A46) says all ground and flight tests of the Silvercrest during the last six months confirm good operational performance, based on over 3,200 hours of testing, including 310 hours in flight and 1,600 cycles. Eleven engines have been ground-tested, while six have run trials on the Gulfstream II testbed.

However, Snecma says these tests signaled the need to extend the engine’s operational life and optimize fuel performance. Silvercrest development is now focused on achieving better control over engine-case distortion caused by high temperatures.

Trappier says the new engine work will not necessitate any structural modification to the Falcon 5X. However, it will delay first flight. “There is no use in proceeding with the first flight if, after that, you have to do modifications to the motor,” he said.

“These kinds of things happen,” Petitcolin noted. “It’s going to take a bit of time and a bit of money, but we know what to do.” —Amy Svitak

Greenpoint Technologies, a subsidiary of Zodiac Aerospace, is now focused on completing two Boeing BBJ787-8 VVIP aircraft. The first will be delivered this year, and the second in early 2017. A ‘green’ Boeing BBJ777-200LR is scheduled to arrive at the Moses Lake, Washington, facilities in early 2016 for outfitting as a VVIP aircraft, and the company has proposals out for VVIP completion of a BBJ737-MAX and an Airbus A32neo.

Also this year, Greenpoint delivered the first two BBJ747-8 Aeroloft cabin additions into service.

“Proposal activity continues to increase, from large, twin-aisle VIP aircraft completions to refurbishment of smaller VIP single-aisle jets,” says Senior Marketing Manager Christine Hadley.

Greenpoint is exhibiting a 1/20th scale model of a VVIP Boeing 747-8 in the chalet of its parent company Zodiac Aerospace, No. A37.
MEBAA Makes a Difference to Business Aviation

The Middle East Business Aviation Association does much more than hold a conference and show in Dubai every two years. It is working hard to develop business aviation across the region, and can point to meaningful results.

“We are working closely and even aggressively on new rules affecting business aviation within the Middle East/North Africa [MENA] region,” says Ali Alnaqbi, founding chairman of MEBAA.

Recently, a UAE law affecting advanced passenger information was challenged by MEBAA after authorities wanted FBOs to supply passenger names and details. “This, of course, is not the business of the FBOs but of the holder of the air operator certificate [AOC], so MEBAA raised the flag. We managed to correct the legislation and that information is now supplied by the AOC’s flight operations department,” explained Alnaqbi.

MEBAA is also playing a role in helping Morocco develop business aviation.

“Until recently it was difficult to gain AOC and FBO licenses in Morocco to serve the growing amount of aircraft movements within the country,” says Alnaqbi. Morocco has more than 11,000 business aviation movements per year but it doesn’t have a single FBO, although some companies have supervision licenses to perform aircraft handling. They, like other similar companies, have to rent and lease VIP lounges base by base, and pay a fee per flight handled. Before the rules were changed by the Moroccan Ministry in February of this year there were only two full-license handlers approved in Morocco, Royal Air Maroc and Swissport.

“Companies can now apply for FBO licenses, which will allow more companies to open across the country,” says Alnaqbi. “Many companies are now running fast to open at different cities within that country.”

MEBAA members are already seeing the financial benefits of group insurance purchasing.

“We developed this membership scheme through a leading underwriter in aviation and a leading London insurance company gaining a more competitive price and better comprehensive coverage for our members,” says Alnaqbi. There are around 70 aircraft in the US$1 billion program at the moment and some [member] companies have made significant savings of 30% to 40%. When the product was launched it was just for the aircraft, but it has now been extended to maintenance, FBOs, personnel and group medical insurance. “They’re getting full cover and saving money,” says Alnaqbi.

Winning Fuel Discounts

Next on the membership agenda is a discounted fuel purchasing scheme. “This is going to take longer to implement as it’s very complicated and we have to make sure we get it right,” says Alnaqbi. The majority of companies operating in the Gulf region only operate one or two aircraft, while others may have as many as 10-15, so MEBAA is working in many directions.

Shades of Gray

Targeting the “gray market” of illegal aircraft charter operations is always a MEBAA priority. “We fight it nonstop as it’s destroying the charter market and throwing good companies out of business.” After five years lecturing on the subject and creating greater passenger awareness of the risks of these illegal charters Alnaqbi thinks the message is getting through. One of MEBAA’s strategies is to contact passengers.

“We decided to fight the gray market indirectly by contacting passengers, and to our surprise many passengers are now asking before they book: ‘Is this a gray market aircraft; are we insured; is it a genuine deal?’ This is a great achievement to get this response.”

A Show in Morocco

In September, MEBAA staged its first business aviation show in Morocco, organized by F&E Aerospace. It attracted 2,033 visitors to Casablanca’s Mohammed V Airport over the two-day event and will now be held every other year in rotation with the MEBAA show in Dubai.

—Mike Vines
Two years on and the German-UAE joint venture between DC Aviation and Al-Futtaim is still the only standalone fixed-base and maintenance business aviation company at Dubai World Central with its own purpose-built property. The facility, known as DCAF, became operational just a few days before the 2013 Dubai Airshow, and the workforce has doubled to around 48 since then.

“Business is very good at the moment,” says Holger Ostheimer, general manager of DCAF (Stand 2119). “It has constantly and continuously picked up quarter on quarter over the last two years.” The company has since gained its AOC (Air Operator Certificate) and has two business aircraft under management: One is a non-UAE-registered aircraft, while the other is A6-registered. Two more aircraft management deals are in the pipeline and should be inked by year-end, again for a UAE- and a foreign-registered aircraft.

“We’ve undertaken a lot of maintenance activity on Challenger, Global and Airbus A319 aircraft and can now undertake more complex checks for A319 operators in the region – most are coming from Saudi Arabia,” says Ostheimer.

The decision to build its huge standalone integrated VVIP FBO (fixed base operator) and MRO (maintenance) hangar when DWC wasn’t much more than a runway in the desert is turning out to be a very shrewd move as more business jets are directed here and away from highly congested Dubai International Airport (DXB). DCAF’s integrated luxury FBO has over 1,300 sq. meters of offices and an adjoining 5,700-sq.-meter MRO hangar that can house A319-size aircraft. It is setting the pace for its competitors, who continue to operate out of the temporary executive terminal located in DWC’s airline passenger terminal. A new specially designed executive aviation terminal is being built and could be operational by spring 2016 to accommodate these companies.

“Maintenance will be a growth area for us as it’s a logical consequence of growing our fleet of managed aircraft,” says Ostheimer. “This consequently leads into additional maintenance requirements. It refines our know-how, and I’m sure that we will become more interesting to the business jet manufacturers as a service center.” To allow for this, DCAF is planning further expansion here and is discussing strategic maintenance cooperations across the board.

DWC, or “Dubai South” as it’s rapidly becoming known, is finding greater levels of acceptance from business jet operators and passengers, and with the eventual complete shift of private jet operations from DXB to Dubai South DCAF sees itself in a very promising position.

Stuttgart-headquartered DC Aviation is the largest German-founded business jet and helicopter charter operator in Europe. Dubai-based Al-Futtaim Group is a privately owned UAE business conglomerate employing over 40,000 people through its 100 varied companies worldwide.

—Mike Vines

Holger Ostheimer, general manager of DCAF.

Lektro Celebrates Its 70th Anniversary

Lektro (Stand 1850) is celebrating its 70th year in business while at the Dubai Airshow, where it will deliver a new tug to Al Bateen’s premier FBO, Dhab Jet.

“We continue to see FBOs, airlines, OEMs and even militaries around the world switch to our products,” said Jesse Long, Lektro’s EVP. “Dhabi Jet is just one more example of a company here in the Middle East that has evaluated its options and concluded that Lektro is the world leader when it comes to aircraft tow vehicles.”

In 1945, Wilt and Violet Paulson founded Willamette Aircraft and Engine Company in Beaverton, Oregon, to repurpose military aircraft for crop-dusting and other civilian uses. Moving their company to Warrenton, Oregon, in 1948, their business quickly morphed into the electric vehicle company now known as Lektro.

Through the years, Lektro has developed products for the logging, farming, golf, material handling, newspaper, theme park and aviation industries. Some of these inventions were the first of their kind, including the first portable wind machine for logging slash burns, the first battery-powered vehicle to feed mink, one of the first golf carts, and the Airporter towbarless aircraft tug.

Over nine different model series have been introduced since the first Airporter, with countless variations within those series. One thing remains constant with its towbarless tugs: They have always been electric.
Delta’s Dubai Blues

Delta Air Lines is quitting its exclusive Atlanta-Dubai route; political shenanigans seem to be at work.

For most airlines, the only time they fanfare route announcements is when they are launching new destinations. Delta Air Lines, however, has bucked the trend by trumpeting that it will end its Atlanta-Dubai Boeing 777 service in February.

Not your average route announcement, the Atlanta airline said in its Oct. 28 statement that the decision was made “amid overcapacity on U.S. routes to the Middle East operated by government-owned and heavily subsidized airlines, and less than a month after Delta reduced service between the world’s busiest airport and the Middle East’s largest hub.”

In other words, Delta blamed its pullout on the Gulf carriers on which it has waged war for many months over alleged subsidies and Open Skies compliance.

But hang on a moment... how many flights do Emirates, Etihad and Qatar Airways operate to Atlanta? The shocking answer is: zero. So Delta has exclusivity on Atlanta-Dubai, yet apparently can’t make a go of the route. How so?

At least part of the answer lies with the network differences between Delta and Dubai-based Emirates. Delta’s 777 will take you from Atlanta to Dubai, but from there (unless you transfer to Emirates), it’s a dead end. And, as Delta references in its statement, the majority of people who fly from outside the Gulf states on one of three Gulf carriers are not going to Abu Dhabi, Doha or Dubai. They are transiting, and in ever larger numbers, their real destination is the Indian subcontinent: Bangladesh, India, Pakistan and so on, all places to which Emirates offers multiple city destinations.

As is the golden rule with any airline, it’s all about the network. What Delta does not have is an Indian subcontinent network (nor do any of the U.S. majors).

The Gulf carriers (and perhaps, more precisely, their state owners) saw an opportunity that their geographical location provided to create international hub-and-spoke operations that include the fast-growing sub-Indian continent market.

Atlanta Hartsfield is one of the largest and most successful U.S. and global hub-and-spoke airports, but it doesn’t have any reach into the sub-Indian continent beyond Dubai.

That will change next year when Qatar Airways begins Doha-Atlanta service. Qatar, I fully expect, will make a go of the route not because there’s a pent-up demand for people to fly from the southern U.S. to Doha, but because Qatar (along with its oneworld partners) will offer a far better network and easier connections to the sub-Indian continent.

Delta’s announcement comes some months into a campaign it has led—joined by American Airlines, United Airlines and some labor groups – to address what it says are billions of dollars of government subsidies given to state-owned Gulf carriers in violation of fair competition rules in the Open Skies between the U.S., the UAE and Qatar.

The subsidy allegations and counter arguments are being examined by the U.S. Departments of Commerce, State and Transportation. The U.S. carriers are seeking government consultations on the UAE and Qatar Open Skies agreements.

The Gulf carrier spat became heated and at times nasty – Delta CEO Richard Anderson made a comment during a CNN interview that appeared to connect the Gulf carriers with the 9/11 terrorists. But of late, the rhetoric has quietened down. American is firmly focused on completing its merger with US Airways; United on its internal problems and customer service levels. So did Delta decide to make some noise once more, this time via a route cancelation?

Emirates certainly believes so and has described Delta’s reason for pulling out of Dubai as “laughable”. Emirates has rejected Delta’s accusation that competition from Gulf airlines forced it to cancel the service and says it has industry data that show Delta’s Dubai flights have had average seat-load factors consistently at 85% or higher and that the route was “highly profitable” – claims that Delta disputes.

Emirates also says its route planners are now “closely studying the opportunity” to begin Dubai-Atlanta service after Delta exits.

It will be interesting if that happens. It’s difficult to see how Delta or U.S. regulators could stop it; the U.S.-UAE Open Skies treaty would permit it and Delta is relinquishing the route of its own accord, so Emirates would only be re-introducing a service that Atlanta-Hartsfield lost.

Would Delta’s route grandstanding then be worth the price? In truth, yes. Delta is among the world’s top 10 most profitable airlines – rich enough to have its own oil refinery. It has more than enough profitable routes to be able to sacrifice one for the sake of politics.

—Karen Walker
Karen Walker is Editor-in-Chief of Air Transport World.
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