Buys Two Globals

Singapore-based Zetta Jet has exercised options on two Bombardier Global 6000 jets, and has taken options on an additional pair, Bombardier said here yesterday. The 6000 "delivers the perfect combination of comfort, range and performance sought by the international traveling elite who make up our clientele," said Zetta managing director Geoffery Cassidy. The two aircraft will be based at Zetta’s North American hub in Los Angeles. The firm order, including a first Global 6000 announced in December, is valued at approximately US$187 million, Bombardier says. If all options are exercised, the value could reach US$436 million. Zetta was established this past August.

Airbus, Boeing, CFM Win Orders

CFM topped the orders league yesterday with a US$4.9 billion contract placed by Transportation Partners, the leasing arm of Lion Group, for 348 LEAP-1A engines to power 174 previously-ordered Airbus A320neo airliners. Meanwhile, both Airbus and Boeing secured commitments from Asian airlines, as Okay Airways signed for 12 Boeing 737 MAX 9s and Philippine Airlines (PAL) inked an MoU to purchase six Airbus A350-900s.

The Okay order, which still must be approved by the Chinese government, is valued at $1.3 billion at list prices and makes the Beijing-headquarted carrier the Chinese launch operator for the 737 MAX 9. Okay also took options for eight 737 MAX 8s.

PAL said its $1.8 billion order will enable it to replace aging A340s. The carrier plans to operate nonstop A350-900 flights between Manila and New York.

Indonesian School Buys 25 Cessnas

Sekolah Tinggi Penerbangan Indonesia (STPI) flight school confirmed an order at the show for 25 Cessna 172 Skyhawks. Seen here celebrating the deal are (L to R): Tri Andayani, Finance & Human Capital Director, PT Len Industri (Persero), STPI 1st Assistant Director Bambang Sutarmadji, and Chris Bogaars, International Vice President, Textron Aviation. Deliveries of the Skyhawks will begin later this year and continue through 2017. The new aircraft will be used to train 300 students at eight locations.
Progress mostly happens in inches, in tweaks, and in increments. But sometimes there’s a shift that changes everything. Those leaps require vision, intelligence, and effort. They require the kind of courage that made flight possible in the first place. It’s this boldness that drives Bombardier’s relentless pursuit of excellence, and has seen us create the cleanest, quietest and most profitable aircraft in the skies.
Lufthansa Technik expects integration of Air China Technic into the Ameco joint venture to be completed by the end of the year.

Bussmann said at the Singapore Airshow that integration work has been ongoing for ten months and is on schedule. The Beijing-based heavy maintenance organization had been operated as a joint venture between Lufthansa Technik and Air China, with the German company holding a 49% stake and providing strong management expertise. As part of the integration of Air China’s other maintenance business, Lufthansa Technik’s stake is reduced to 25%.

Bussmann believes that the competitive landscape in the Asia-Pacific MRO sector is going to change as new aircraft and engine types have to be dealt with and the overall market growth requires providers to make significant investments. “You need a lot more scale,” Bussmann believes. Lufthansa Technik expects significant growth in the region based on deals to provide services for anchor fleets – large framework agreements with airlines. The company is in talks with several potential candidates and would be prepared to add to its Asia-Pacific bases in case it could secure a large base volume.

One focus could be narrowbody base maintenance. At its existing Lufthansa Technik Philippines facility, preparations are geared up to expand capacity for A380 and Boeing 787 heavy maintenance.

Lufthansa Technik is carefully watching Asian airline performance ahead of any further decisions. “The markets are really soft. Demand is good, but yields are really low,” Bussmann points out. He is concerned that the massive influx of new capacity could make the trends toward lower yields even worse. On the other hand, he remarks that “we will have to see whether all the deliveries to Asia will really take place.”

—Jens Flottau

MRO Asia-Pacific in September

PENTON’S AVIATION WEEK MRO Asia-Pacific will be held Sept. 27-29 at the Singapore EXPO Convention & Exhibition Centre.

The 2015 Aviation Week MRO event took place this past November in Singapore and sold out of exhibition space. It attracted more than 3,800 registered attendees. The 2016 show is expected to surpass 4,000 registered attendees. Exhibition space is more than half sold, with a complete sellout projected prior to the MRO Americas conference and exhibition, April 5-7, in Dallas.

MRO Asia-Pacific attracts attendees from dozens of countries including China, France, Malaysia, Singapore, the UK and the U.S. Of the 2015 attendees here, 56% served at the VP, director or manager level, with 45% having a “buy/approve” influence.

The event is the industry’s largest in Asia-Pacific, featuring speakers from airlines, OEMs, regulators, suppliers, and service providers.

“Singapore is Asia’s transport hub, and we encourage interested exhibitors to register soon, before the show sells out,” said Aviation Week Network’s Lydia Janow, managing director for events and trade shows.

“MRO Asia-Pacific,” she said, “sets the industry standard.”
Boeing Reportedly Nears Launch Decision on Midsize

Boeing appears to be nearing a decision about a new aircraft that would potentially fill the gap between the 737 MAX and 787.

Boeing Commercial Airplanes president and CEO Ray Conner is reported to have told employees in an internal webcast that such a decision could come as early as this year, mainly because Boeing needs to find a competitive response to the fast-selling Airbus A321neo. Conner is understood to have said during the webcast that Airbus is "stealing massive orders from the 737." In addition to a product decision he is also reported to have announced significant cost reduction measures, including job cuts. He is reported to have stressed the need for lower costs "because Boeing cannot compete with Airbus right now on prices."

Beyond this, Boeing says it is "not publicly discussing or confirming anything else that was talked about in our internal meeting."

Airbus has attracted almost 4,500 orders for the A320neo family, compared to Boeing's 3,092 for the 737 MAX, which was launched eight months later. The 737 MAX 9 has been slow selling thus far: Boeing had little over 200 orders for the aircraft by the end of November 2015, whereas Airbus had 1,094 for the A321neo a month later. Boeing has also seen 787-8 orders slow as many airlines opt for the larger 787-9, and has been studying what is believed to be called the New Midsize Airplane (NMA), while also looking at a further stretch of the 737.

The NMA would be an all-new design, larger than the 737 and smaller than the 787, with trans-Atlantic range capabilities. Key design features such as whether it will be a single- or twin-aisle aircraft have not yet been made. If launched, Boeing would be looking at entry-into-service around 2022. The NMA would likely be available in versions for between 220 and 280 passengers.

A less risky and less expensive move would be a further stretched 737 derivative that would enable Boeing to add around 20-30 seats. That aircraft would likely have to be heavily modified with a new wing, longer landing gear and more powerful engines.

—Jens Flottau

Airbus: No Quick Boeing Reaction to A321neo Success

AIRBUS CHIEF SALESMAN John Leahy does not expect Boeing to react quickly with a new product to counter the Airbus A321neo but nevertheless sees a need for his competitor to act.

"If you sit out there in Seattle, you see a big hole (in the portfolio), and I think they need to do something," Leahy said at the Singapore Airshow. However, "I don’t actually see them do much except presentations in the next two years,” Leahy quipped. He argues that because of the success of the A321neo against the 737 MAX-9 Boeing is in a "tough situation.” Leahy said that any replacement would have to be a family of aircraft that would require at least US$10-12 billion in investment.

Airbus had 1,101 orders for the A321neo at the end of January, compared with 217 for the Boeing 737 MAX 9 (at the end of November 2015). Airbus likes to point out that the A320neo family has reached a market share of 68% in 2015, with only 32% controlled by the 737 MAX. “The airlines are voting with their checkbooks that there is no competition. The A320neo is the aircraft that they want.”

Boeing, of course, disagrees. “Once we were out there with the MAX and the new head-to-head – airlines knew what the choice was - the market has been about 50/50,” Scott Fancher, SVP and general manager of airplane development for Boeing Commercial Airplanes, told Aviation Week in an interview. “We've got a distinct advantage in the MAX-8 space, they look a little bit better in the 321 space. . . . To say it’s a decisive advantage for Airbus, I just don’t see that the data backs that up.”

Leahy stressed that the production rate increases planned by Airbus for its narrowbodies from the current 42 aircraft per month to 60 is completely justified by the market. "At rate 60 there still is an insufficiency of production," he said. "We should be careful about not being able to deliver the aircraft that we have sold.”

At Airbus the ratio of backlog to annual production is currently at 10:1, but if production is raised to 60 as planned from mid-2019, the ratio would only drop to 7:1 in 2020.

—Jens Flottau
A generation ahead. In service today.

The cleaner, greener, quieter Pratt & Whitney PurePower® Geared Turbofan™ engine.

Meeting all specification requirements at Entry Into Service, the Geared Turbofan engine reduces fuel burn by 16%, its noise footprint by 75% and emissions by 50%. The era of quiet, efficient and environmentally friendly operations is here – a better engine at its core. Only from Pratt & Whitney. Learn more at www.pw.utc.com.
Dassault Falcon Promotes Long-Range 8X

Dassault Falcon is emphasizing its new flagship, the ultra-long-range Falcon 8X. The new trijet isn’t here, but its predecessor 7X is, as is the Falcon 2000LXS twin, which is finding increasing success in the region for special missions.

“T
e to us, the 8X is the aircraft of the year,” says Hong Kong-based Dassault Falcon Asia-Pacific president Jean Michel Jacob. “We provide a bigger aircraft inside and a smaller aircraft outside,” he says.

“For the size of the cabin,” Jacob told ShowNews, “it’s a light aircraft” – 30,000 to 40,000 lb. lighter than the competition. The 8X cabin measures 42.7 ft. in length as compared with 39.1 ft. for the 7X.

That means a more modest ramp presence, but presence on more ramps - with three Pratt & Whitney 307D engines (the 7X is powered by 307As), the 8X will be able to serve more airfields with shorter runways than competing large-cabin jets, the manufacturer says.

Three Falcon 8X jets are in flight trials. Between them the test craft have logged upward of 550 hr. over the course of 275 flights. Dassault hopes to certify the Falcon 8X in June, and see service entry in mid-July.

The aircraft will be able to travel nonstop from Singapore to London if conditions are favorable, and from Singapore to Geneva under virtually any circumstances.

A Singapore-London demonstration flight is slated for the end of next month.

Customers unable to view the aircraft here in Singapore at that time will likely be able to do so at ABACE in Shanghai April 12-14 – and almost certainly at EBACE in Geneva May 24-26.

The Falcon 2000LXS twin lacks the range of the 5,950 nm/11,000 km Falcon 7X trijet (and the projected 6,450 nm/11,945 km of the 8X) but is finding success as a special-mission aircraft in Asia.

Two Falcon 2000LXS jets were delivered to the Japanese Coast Guard last year. The Korean Air Force operates a pair of Falcon 2000s as well.

In November, Dassault announced delivery of a fully outfitted Falcon 2000LX medevac aircraft to the Beijing Red Cross Emergency Medical Center, describing it as the first fixed-wing aircraft in China fully equipped to perform air medevac services.

Dassault sees the China market, which accounts for about half of the 100 Falcon jets in service in the region, as evolving in other ways too, including an emerging demand for used aircraft. “This market is getting mature,” Jacob said here Tuesday. Whereas the China market was formerly dominated by state-of-the-art glam and glitter, today “they know they can get good deals on pre-owned aircraft.” Dassault is in fact considering appointing a full-time pre-owned-aircraft specialist to serve the Asian market.

Another big change? The emergence of countries outside China as legitimate business jet markets. Malaysia and Thailand are prime examples, Jacob says.

Dassault acknowledges “softness in the present market.” One reason? The price of oil. “It is good for the airlines,” Jacob says, but it is bad for customers who have less revenue from oil.

That said, “We remain extremely bullish on prospects in Asia-Pacific,” Dassault Aviation chairman and CEO Eric Trappier said in a pre-show release.

Dassault Aviation is at Chalet CD37. —Rich Piellisch

Singapore Launches A350-900 Engine Upgrade
Trent XWB-84EP Upgrade Leverages A350-1000 Engine Advances

ROLLS-ROYCE HAS unveiled plans to develop an Enhanced Performance upgraded version of the Airbus A350-900’s Trent XWB-84 engine, with Singapore Airlines as launch customer.

The improvement package is expected to yield a 1% improvement in fuel burn and will be delivered to Singapore in the fourth quarter of 2019. The Trent XWB-84EP will incorporate turbine cooling and aerodynamics improvements developed specifically for the XWB-97 engine now in development for the A350-1000, as well as from the next-generation Advance technology program.

The “EP” also includes an improved secondary air system and inter-stage sealing system from the XWB-97, as well as upgrades to the Trent XWB-84 turbine tip clearance control system that Rolls says are “based on recent improvements on other programs.” The engine maker adds that the upgrade will be available to other A350-900 operators following initial deliveries to Singapore.

Rolls is meanwhile poised to deliver the 100th Trent XWB engine, which will enter service on the fourth Singapore Airlines A350-900. The company adds that the delivery marks another milestone in the ongoing transition to a higher-tempo production flow at its Derby, UK, site, from where, next year, new XWBs will be made every working day.

—Guy Norris

Dassault Falcon Promotes Long-Range 8X

Trent XWB-84EP Upgrade Leverages A350-1000 Engine Advances

ROLLS-ROYCE HAS unveiled plans to develop an Enhanced Performance upgraded version of the Airbus A350-900’s Trent XWB-84 engine, with Singapore Airlines as launch customer.

The improvement package is expected to yield a 1% improvement in fuel burn and will be delivered to Singapore in the fourth quarter of 2019. The Trent XWB-84EP will incorporate turbine cooling and aerodynamics improvements developed specifically for the XWB-97 engine now in development for the A350-1000, as well as from the next-generation Advance technology program.

The “EP” also includes an improved secondary air system and inter-stage sealing system from the XWB-97, as well as upgrades to the Trent XWB-84 turbine tip clearance control system that Rolls says are “based on recent improvements on other programs.” The engine maker adds that the upgrade will be available to other A350-900 operators following initial deliveries to Singapore.

Rolls is meanwhile poised to deliver the 100th Trent XWB engine, which will enter service on the fourth Singapore Airlines A350-900. The company adds that the delivery marks another milestone in the ongoing transition to a higher-tempo production flow at its Derby, UK, site, from where, next year, new XWBs will be made every working day.

—Guy Norris

Dassault Falcon

Asia-Pacific president Jean Michel Jacob sees promise for new aircraft in new markets fulfilling new missions.

Singapore Launches A350-900 Engine Upgrade
Trent XWB-84EP Upgrade Leverages A350-1000 Engine Advances

ROLLS-ROYCE HAS unveiled plans to develop an Enhanced Performance upgraded version of the Airbus A350-900’s Trent XWB-84 engine, with Singapore Airlines as launch customer.

The improvement package is expected to yield a 1% improvement in fuel burn and will be delivered to Singapore in the fourth quarter of 2019. The Trent XWB-84EP will incorporate turbine cooling and aerodynamics improvements developed specifically for the XWB-97 engine now in development for the A350-1000, as well as from the next-generation Advance technology program.

The “EP” also includes an improved secondary air system and inter-stage sealing system from the XWB-97, as well as upgrades to the Trent XWB-84 turbine tip clearance control system that Rolls says are “based on recent improvements on other programs.” The engine maker adds that the upgrade will be available to other A350-900 operators following initial deliveries to Singapore.

Rolls is meanwhile poised to deliver the 100th Trent XWB engine, which will enter service on the fourth Singapore Airlines A350-900. The company adds that the delivery marks another milestone in the ongoing transition to a higher-tempo production flow at its Derby, UK, site, from where, next year, new XWBs will be made every working day.

—Guy Norris

Dassault Falcon

Asia-Pacific president Jean Michel Jacob sees promise for new aircraft in new markets fulfilling new missions.
Gripen is the ultimate multirole fighter for a range of combat situations. Mission-ready at a moment’s notice, the easy-to-adapt aircraft has a fast turnaround and is specially designed to spend as much time as possible where it’s needed most – in the air.

Gripen offers unbeatable performance, top efficiency and unrivalled reliability, resulting in lower operating costs and more flying hours.

With the addition of technology transfer packages, our customers gain lasting benefits that competition cannot match.

Fuelled with Saab’s **thinking edge** at every stage of development, Gripen is more than a fighter – it’s a national asset that protects sovereign independence and empowers a nation towards a more secure future. That’s why we call it ‘The smart fighter’.

*Visit Saab at Singapore Airshow 2016 at stand D11 to find out more about our defence and security solutions.*

www.saab.com/SGAirshow
Collins Wins More in Asia-Pacific

“Asia-Pacific is the biggest growth region for us on the planet and has grown to 10% of our revenues from 5% in 2010,” says avionics company Rockwell Collins. “That’s a direct result of the strategies we set in place over the last 50 years.”

The supplier of avionics, in-flight entertainment and ARINC communications services is expanding rapidly in the region on several fronts. It has engineering facilities in Australia (where it manufactures optical assemblies for F-35 fighters), manufacturing and services in Singapore, and four joint ventures in China with the latest, Accel, beginning production of full-motion simulators for Airbus A320 and Boeing 737 aircraft.

In India it employs more than 600 engineers in its India Design Centers in Hyderabad and Bangalore, and has a joint venture there to develop simulators for military air and ground operations.

In short, it is in Asia-Pacific 24/7, whether for engineering or customer support, notes Colin Mahoney, SVP for Rockwell Collins (Booth V77). “We see continued positive economic growth through the end of the decade in developed and emerging countries in this region. With our long-standing presence in Asia-Pacific and strong customer relationships, we’re well positioned to accelerate our growth.”

Rockwell Collins earns 43% of its revenues from winning a place on airlines’ aircraft. These direct sales are headed toward 50% by 2020, says Mahoney.

Progress toward that goal can be seen here at the Singapore Airshow with the announcement of a number of new contracts, including one of the largest airline avionics orders in the company’s history. It is also announcing military communications and radar system selections by key customers in Asia-Pacific.

Wins celebrated here include:

- GOAIR. Selection of Rockwell Collins’ MultiScan ThreatTrack weather radar and GLU-925 Multi-Mode Receiver for 72 A320neo aircraft. Deliveries will begin later this year.
- BOC AVIATION. Selection of MultiScan ThreatTrack radar, GLU-925 MMR and TCAS II for new 737 aircraft.
- BOC Aviation will feature Rockwell Collins’ advanced avionics, including MultiScan ThreatTrack weather radar, GLU-925 Multi-Mode Receiver (MMR), and TTR-2100 Traffic Alert and Collision Avoidance (TCAS II) traffic computer. Delivery will begin later this year.
- AIR CHINA. Renewed its contract for Rockwell Collins’ ARINC GLOBALink voice and data communications. The air/ground data communications service, which covers the national flag carrier’s entire fleet of aircraft, provides critical flight information to maximize performance, safety and operations.
- It also introduced its GLU-2100 next-generation MMR for air transport aircraft. The newly designed MMR, which reads in-flight air data into the GLU-2100, replaces in-flight data into the GLU-925 MMR for Airbus and Boeing aircraft.

The GLU-2100 MMR will bring numerous enhancements such as satellite-based augmentation system (SBAS) navigation and turnkey compliance to all known automatic dependent surveillance-broadcast (ADS-B) mandate requirements. It incorporates VHF omnidirectional radio range (VOR) functionality and a form-fit, drop-in replacement for legacy MMR units and will operate with existing antennas.

“We are winning the lion’s share of competitive airline tenders, from in-flight entertainment to avionics,” Mahoney notes.

—John Morris

Major Indonesian Sale for Piper

Officials of Sekolah Tinggi Penerbangan Indonesia visited Piper in Florida before accepting the school’s latest batch of Seneca and Archer trainers.

PIPER AIRCRAFT AN- NOUNCED Tuesday that its Singapore-based regional dealer, Wings Over Asia, recently negotiated a significant sale to an Indonesian airline training school. Sekolah Tinggi Penerbangan Indonesia (STPI), based at Budiarto Airport, Curug, has just received a dozen single-engine Archers and three Seneca V twins from a total order for 20 and five, due to be completed later this year.

The Archers are the TX version, with Garmin G1000 “glass cockpits” similar to those of the current Seneca. The latest deliveries join 18 Piper Warriors supplied to the government-sponsored school four years ago.

In a related announcement, Wings over Asia revealed that it is almost ready to open an authorized service center at Singapore’s Seletar Airport.

Meanwhile, reports Piper, testing continues in Florida of three prototypes of the new M600 turboprop, these having amassed 1,300 hr. in 800 sorties since May 2014. The good news is that speed and range guarantees have both been upped, from 260 to 274 kt. cruising, and from 1,200 to 1,300 nm. Not so good is the fact that expected FAA certification has slipped from Q4 of 2015 to the third quarter of this year.

Seating six, including pilot, the pressurized M600 is a further development of the Malibu Meridian family, priced at US$2.85 million with standard Garmin G3000 avionics.

—Paul Jackson
Lift your aircraft to new heights

Fuel efficiency and performance in the C-130 has never been better – the Rolls-Royce T56 Series 3.5 upgrade is now proving itself in operation. The US Air Force is on contract to install the Series 3.5 upgrade into its legacy C-130 fleet and the ‘Hurricane Hunters’ of the US NOAA fleet have seen impressive results from the Series 3.5 in their P-3 aircraft. Flight operations have seen fuel improvement of more than 12 per cent, which translates into a significant increase in time on station, lower operating temperatures and reduced maintenance costs. Get on board with the Series 3.5 upgrade, as we provide better power for your changing world.

Come and see us at N23 at Singapore Air Show or visit us at Rolls-Royce.com

Trusted to deliver excellence.
Slim Chance of Any Revival for Rolls-Pratt Collaboration

New Pratt & Whitney president Bob Leduc has poured cold water on the prospects for any potential future commercial engine tie-up with archival and former International Aero Engines (IAE) partner Rolls-Royce.

The two engine makers formerly parted ways with the dissolution of the IAE in 2012, but industry analysts have since floated the notion that Pratt and Rolls could conceivably come back together to forge a much broader strategic alliance. While it is believed the most obvious catalyst for the move would be a next-generation engine for Boeing’s projected midsize aircraft, analysts posit such a teaming would also combine Pratt’s new mid-thrust market penetration with the geared turbofan (GTF) with Rolls’ significant widebody presence. The two would thereby be able to collectively take on the powerful dominance of General Electric and its Snecma joint venture, CFM International.

However Leduc says such a notion faces several hurdles. “To be honest, we have got a set of partners on GTF already. We have got anywhere between 45% and 49% on any given program subscribed to, and most of those partners want to be on any next-generation application we do. I’d say the opportunity to partner with Rolls is very low just because of those existing partner relationships.”

However Eric Schulz, the president of Rolls-Royce Civil Aerospace, says it is premature to say whether any new midsize-program would even merit the search for a partner. “It is very early. Our view is we are not looking for a partnership, but depending on when it is and if it makes sense, why not? But it’s not something today we are betting on. Today we are in a situation where we know that if we want to penetrate that market, we know we will have to have the right opportunity.”

“So far we know all the technology we are developing already fits that possibility. Now, when it shows, where it shows up, to do what and how, do we have a business case, how many engines are involved, is it a single-source or dual-source program … there are so many variables. I can’t tell you today whether we would go it alone or not.” —Guy Norris

Bombardier Offers 90-Seat Q400 Option

Bombardier has increased the possible capacity of the Q400 turboprop, offering a version with 90 seats at a 28-in. pitch. The new Q400 option, unveiled here, adds four more seats to the 86-seat extra-capacity version announced at the 2013 Dubai Air Show. That version features 29-in. pitch seats. To get up to 90 seats on the same airframe, Bombardier cut seat pitch, moved the right forward service door slightly and pushed back the bulkhead. Bombardier said it expects airlines to use the 90-seat version on short-haul flights between secondary cities.

Cessna Latitude Gets EASA Approval

Cessna’s Latitude midsize business jet has been certified by the European Aviation Safety Agency and deliveries have begun to customers in the region. With a maximum range of 2,850 nm, the Latitude can fly non-stop on such routes as London-St. John’s or Lisbon-Moscow. It is also one of few business jets approved to operate into La Môle Airport, a popular European vacation destination near Saint-Tropez, France, which requires special authorization due to the strict aircraft performance requirements, dense terrain and heavy traffic at the airport.

Embraer Signs Pact With Colorful Guizhou

Embraer says it’s signed a long-term agreement for its Flight Hour Pool Program with Colorful Guizhou Airlines, providing a comprehensive components repair package for the carrier’s E190 fleet. The contract is the first that Embraer has signed for the program in China for commercial aviation. “As a start-up airline operating mainly regional lines in the beginning, we need strong and reliable support from the manufacturer,” said Zhai Yan, who chairs the Guizhou Industrial Investment Group and Colorful Guizhou Airlines. “The pool program offers us a comprehensive materials and services package with a predictable cost,” he said. Embraer is at Chalet CD31.

Singapore and GE Extend OnPoint for 777s

Singapore Airlines and GE signed an extension to GE’s OnPoint solution for the maintenance, repair and overhaul of GE90-115B engines powering 19 of the carrier’s Boeing 777-300ER aircraft. “As part of the OnPoint solution agreement, Singapore Airlines will continue to have access to the highest-quality OEM workscopes and materials to keep its engines in optimal performance condition,” said GE Engine Services president and CEO Kevin McAllister. OnPoint is designed to help lower the customers’ cost of ownership and maximize the use of their assets, GE says.

FSI Building Fourth A320 Sim for Wisesoft

FlightSafety International will manufacture a fourth Airbus A320 full-flight simulator for Wisesoft Corp. of Chengdu, China. The Airbus STD 1.8 simulator is expected to receive Level D qualification from the CAAC at year’s end, and will be installed at SafetyWing Aviation Training in Chengdu. It will be equipped with FlightSafety’s VITAL 1100 visual system, electric motion control and cueing. Original Airbus panels on the flight deck will help to ensure the highest-fidelity training. Additionally, all Wisesoft’s A320 FFSs will be upgraded with FSI’s VITAL 1100 visual system.
We keep you flying. Anytime. Anywhere.

World-Leading Full Service Provider of End-to-End MRO Services

From airframes, engines, components and logistic support - we cover them all!
Around the clock, around the world.
- Total maintenance solutions under one roof
- Highly experienced technical teams
- Wide-body hangars & extensive supporting facilities
- Over six decades of reliable operations
The architecture of reliability

Our next-generation LEAP engine is built on solid foundations. Drawing on the legendary architecture of the CFM56, we have expanded our technology and innovation even further. Delivering a new standard in fuel efficiency for CFM customers worldwide.

cfmaeroengines.com
CFM International is a 50/50 joint company between Snecma (Safran) and GE.
Flight Safety Foundation Series of GSIP/SDCPS Workshops Start in Singapore in March

Washington, D.C.-based Flight Safety Foundation has scheduled 12 workshops in the Asia-Pacific and Pan-American regions as part of GSIP, a two-year, U.S. FAA-backed Global Safety Information Project.

The other key acronym? SDCPS, for Safety Data Collection and Processing Systems.

The GSIP/SDCPS goal? Improve aviation safety not through the analysis of accidents, but through knowledge gained from hazards that are discovered during regular operations.

The workshops begin next month, with the inaugural session scheduled for Singapore in conjunction with FSF’s Singapore Aviation Safety Seminars (http://www.fsfgsip.org/gsip).

The gatherings are designed for aviation safety professionals from civil aviation authorities, air navigation service providers, airlines, MROs and airports. They will include Maintenance and Engineering Safety Seminar March 14-15, 2016; a complimentary Safety Management Information and Sharing Seminar on March 16; and a Flight Operations Safety Seminar March 17-18.

The GSIP/SDCPS series is to conclude in mid-July with a final workshop in Mexico City. Other workshops, most of which are to span two days, are planned for Hong Kong, Jakarta, Kuala Lumpur, New Delhi, Tokyo, Sydney, Panama City, Lima and Santiago.

The foundation is considering additional workshops in the Philippines, China, Costa Rica and the Caribbean, says FSF technical VP Mark Millam, who heads the organization’s GSIP work.

“We held information-gathering focus groups in many of these same locations last summer, and at the time promised the stakeholders that participated that we would be back in 2016 for more in-depth discussions about SDCPSs, how they are being used and how they can be improved upon to continue to identify and mitigate safety risk,” Millam said.

Last Philippines Airbus C295 Delivered

The Philippines Air Force has taken delivery of its third and final Airbus C295 medium-transport aircraft from Airbus Defense and Space. The aircraft was ferried from the final assembly line at Seville, Spain, to Clark Air Base, Philippines. In Philippines Air Force service the C295 will play a key role in the modernization of the PAF’s transport fleet and will undertake a wide variety of military and humanitarian missions. The twin turboprop can operate from short unprepared airstrips no longer than 2,200 ft. and from soft and rough ground.

Engine Alliance’s Singapore GP7200 Center

The Engine Alliance has named Pratt & Whitney’s local Eagle Services Asia unit as a center of excellence for GP7200 low-pressure compressor overhauls. ESA will support Airbus A380 operators around the globe with the first shop visits scheduled for LPC performance restoration. “With ESA, we continue to build on the strengths of our member companies,” said Engine Alliance president Dean Athans. “Building the best engine for the A380 is just the start,” he said. ESA will be responsible for disassembly, assembly and balancing of the LPC, fan hub, drum, blades and stator assembly. Pratt & Whitney is at Booth L39.

Twin Otter Series 400 Debuts in Taiwan

CAVU Aviation Finance LLC has signed a long-term leasing agreement with Taiwanese operator Daily Air Corp. for four Twin Otter Series 400s. They will be delivered during Q2 and Q3 2016 and will replace three Dornier Do228s currently operated by the carrier under a Taiwan government contract to provide essential air services to five offshore islands along the southern coast. The aircraft was chosen because of operational reliability and economics well suited for the restrictive operating conditions and short runways on several of the islands being served by Daily Air.

Turning the Tables on Freighter Airliner Loading

Singapore Airlines Cargo has selected UTC Aerospace Systems to provide new-technology Freighter Common Turntables (FCT) for its Boeing 747-400 cargo-carriers, presently fitted with legacy Goodrich power drive units. FCT’s ability to steer, brake, stop and drive cargo, all in one package “eases maintenance requirements and helps operators achieve fuel cost savings,” said Mike Wagner, director of aftermarket for UTC Aerospace Systems Interiors. UTC says the FCT benefits original equipment manufacturers and passenger-to-freighter conversion providers by offering weight reductions as well as cost savings for maintenance and inventory.

PPG Launches Products Mobile App

A new mobile app from PPG’s aerospace business is a one-stop guide to its transparencies, coatings, sealants, packaging and application systems, transparent armor, and chemical-management services, with links to the aerospace website and online technical data and material safety data sheets. It includes a map of PPG’s global aerospace sites with contact details for product and purchasing information, and a form to submit questions. The free app can be downloaded in the Apple iTunes store, Blackberry World and Google Play store or viewed online at bit.ly/ppg-app.
Where the world’s aerospace industry goes to do business...

96 participating countries*

$204 BILLION of orders and commitments placed*

84 of the top 100 aerospace companies participated*

Find out more and book your Visitor Passes today at www.farnborough.com

We’re the best for your business!

*Statistics from Farnborough International Airshow 2014
Cradle-to-Grave Support Is RUAG’s Specialty

A unique, close-working relationship between Switzerland’s air force and its civilianized support agency is an exportable commodity that brings RUAG Aviation to the Singapore Airshow (Chalet CD17).

RUAG is a supplier, support provider and integrator of systems and components for civil and military aviation throughout their entire life cycle, “from the moment you start thinking about an aircraft purchase, to the time you start thinking about its replacement,” says Pirmin Berger, marketing and communications director.

A glance at the inventory of the Swiss Air Force – F-5 Tiger and F/A-18 Hornet fighters, Super Puma helicopters, Pilatus PC-7/9 trainers – explains why air arms in the region will find that RUAG speaks “their language.”

The company’s German branch is also master of the former Dornier 228 twin-turboprop everywhere except India, where a separate licensing agreement is in effect. Having placed the last of a trial batch of eight last year (with Aurigny Air Service of the Channel Islands), RUAG has elected to place the 228NG version in series production from this year onward.

According to Berger, manufacture will average some four per year to meet a modest, but sustained, world demand. Of the first eight distributed five went to “blue chip” commuter airlines (including Japan, Norway and Venezuela) and three to special missions (Bangladesh and German navies). A similar pattern of future sales is anticipated.

About 350 modifications are incorporated in the “NG” 228, including new digital avionics and four-display EFIS instrumentation, as well as newly developed, smaller-diameter, five-blade propellers for the Honeywell TPE331-10 engines.

—Paul Jackson

First A321neo Suffers Tail Strike

The first Airbus A321neo will have to undergo significant repair work and be grounded for weeks following a tail strike during flight tests on Feb. 15. It was performing tests at Perpignan airport, France, at the time. “These things happen,” said Airbus president and CEO Fabrice Brégier. “We go beyond certified limits [during testing].” The aircraft was flown back to Toulouse, where it will be repaired, and flight tests will be suspended for “a few weeks,” Brégier said, adding that he does not expect any impact on planned delivery schedules.

Uni-Top Entrusts CF6-80C2 Engines to AFI

AFI KLM E&M said here that it will maintain CF6-80C2 engines powering seven A300 aircraft operated by China’s Uni-Top Airlines. The contract includes repair and overhaul of the engines, as well as spare engines to guarantee operational availability. A total 14 shop visits have been scheduled to date. AFI KLM E&M (Booth G08) has more than 30 years’ experience with the CF6-80C2 engine and has “developed extensive capabilities for this engine type, aimed at controlling costs and TAT by originating innovative, economical repairs in-house.”

FSI Sikorsky Sim for Singapore

FlightSafety International will be offering training for Sikorsky S-76C+ and S-76C++ helicopters in Singapore starting next month. The FS1000 Level D simulator will be equipped with FSI’s Vital 1100 visual system, CrewView collimated glass mirror display, and electric motion control loading and cueing. VITAL 1100 includes photo-realistic, highly detailed mission-specific imagery that incorporates latest terrain information with geo-specific satellite images, and includes a Whole-Earth environment and worldwide database. The modular design produces fields of view up to 300 deg. horizontally that provide significant improvements in situational awareness by filling the entire windscreen.

AAR Announces MOU With Vision Systems

AAR has been selected by Vision Systems to use AAR’s electronically dimmable windows for retrofit programs in Asia, Middle East, Africa and North America. The EDW product developed by Vision Systems is based on suspended particle device technology. The SPD windows can enhance passengers’ experience by improving visual and thermal comfort. AAR says, “The windows’ sleek, elegant design and their capacity to block heat and noise convey a peaceful, spacious and cooler atmosphere.” The technology blocks more than 99.9% of harmful UV light. AAR is at Booth 501.

Uconsystem for Thailand and Philippines

Uconsystem Co., Ltd. of the Republic of Korea and G.A.A. Enterprise (Thailand) have signed an MOU here for mutual cooperation in developing UAVs for the Armed Forces of Thailand. In addition, it is expanding its business through local assembly of its products through Philippines-registered company ACSENS. “Uconsystem and G.A.A have shared a wide range of UAV business in Thailand as partners for win-win growth,” said Uconsystem president and CEO Yong Woo Jeon. “This MOU signing will be definitely be a stepping-stone for (us) to grow further and work more closely . . . for future UAV Business.”
Non-stop service

Every day over 86,000 flights take off with UTC Aerospace Systems equipment on board. Our customers benefit from 24/7/365 technical support and a global network of more than 50 MRO facilities.

With new in-flight position monitoring, we’ve put more real-time data in the hands of operators. Another example of how our advanced systems help connect, explore and defend our world.

This is where ingenuity takes off

utascrc.com
Saab wants to re-energize its attempt to join the small club of companies that produce antisubmarine warfare aircraft. For some years, the Swedish company has been offering the Swordfish ASW aircraft, based on the long-out-of-production Saab 2000 regional airliner. Today, however, it announces a new Swordfish project, with a choice of Bombardier platforms: the Global 6000 business jet and the Q400 turboprop airliner.

The project competes with a similar pair of ASW systems offered by Israel Aerospace Industries, on the Q400 and Global 5000, and to some extent with Airbus Defense’s CN235 and C295.

The market for high-end ASW is going to expand, Saab believes, as the number of submarines grows: Asia is a prime market because the company expects that there will be more than 100 submarines in the region by 2020, an increasing number of them being the dangerous and super-sneaky breed of air-independent propulsion (AIP) boats.

Saab presents two qualifications for the ASW market. The first is its expertise at integrating complex airborne intelligence, surveillance and reconnaissance (ISR) systems, such as the new GlobalEye. Second, since its 2014 acquisition of the Kockums shipyard, in Malmö, Saab itself builds some of the most dangerous and sneaky AIP submarines out there. (More than a few embarrassed surface-warship skippers, their ships photographed through periscopes that they had no idea were there, can attest to this).

“That puts us in a unique position to provide solutions,” says Joakim Mevius, head of Saab’s airborne ISR unit.

Market reaction to the Saab 2000-based Swordfish, however, pushed the company to the new platforms. The Q400 has somewhat better performance and is being offered to customers who are “focused on operations nearer the home base,” Mevius says. But some customers are looking for regional-strategic capability, with long endurance at extended range and the speed to get there quickly. The Global 6000 can patrol for 8 hr. at 1,000 nm in ASW trim, Mevius says.

Processing and display hardware, and some data-fusion software, will be common to the GlobalEye air and surface surveillance system, the aim being “a very high-end capability with fewer operators.” Saab is working with partners on sensors, including Selex for the radar and General Dynamics Canada on the acoustic system, which supports state-of-the-art multistatic active coherent (MAC) processing – “the same kind of system as they have on the P-8A,” Mevius says. MAC tends to require a lot of sonobuoys and the Swordfish system is designed to carry “a significant load.”

Saab’s philosophy is that the ASW mission involves low-altitude work, and the company believes that the Bombardier platforms will work well in that environment. However, the Swordfish system does not require a magnetic anomaly detector, a long-standard low-level sensor, although it is available if an operator requires it.

Neither Swordfish version has an internal weapon bay. Many modern lightweight torpedoes are electrically powered and can be carried externally; internal carriage was needed for Otto-fuel torpedoes because of the propellant’s freezing point.

—Bill Sweetman
Embraer Is Bullish Here: Sees ‘Untapped Opportunities’ in the Asia-Pacific Region

Embraer Commercial Aviation predicted here this week that Asia-Pacific carriers, including Chinese airlines, will take delivery of 1,570 new jets in the 70- to 130-seat range over the next 20 years representing 25% of the worldwide demand for the segment. The aircraft for the region will be valued at approximately US$75 billion, at list prices, the manufacturer said.

“The Asia-Pacific market will become more affluent, competitive and open, further stimulating airlines to seek system efficiencies, brand differentiation and improved service levels,” Embraer says. “In this context, the 70- to 130-seat jet segment will play a key role in supporting the intra-regional development in Asia-Pacific.”

“We are showing to airlines the benefit of moving from ‘red oceans’ to ‘blue oceans,’ that is, to move away from a crowded marketplace and seek out opportunities in markets that are currently underserved, or not served at all, where yields are also stronger, moving from one to two digits,” said Embraer Commercial Aviation president and CEO Paulo Cesar Silva.

Embraer sees “untapped opportunities in Asia-Pacific, where more than 250 markets, or 30% of narrowbody exclusive markets, are served with less than one daily frequency.” Such markets would be better served with 70- to 130-seat jets, the manufacturer says.

The rise of low-cost carriers has been a direct and natural response to the surge in demand for air travel in the region, Embraer adds. But “the large inflow of capacity has influenced ticket prices and created a new dynamic: a vicious cycle in which lower yields force lower unit costs, leading to larger aircraft that add more capacity, which, in turn, lower load factors that promote even more fare discounting.”

Embraer’s answer? Smaller, more versatile and economical regional aircraft. 

Malaysia Air Reviews Long-Haul Fleet Plans

Malaysia Airlines is considering exercising options for additional Airbus A350s, as it appears to be backing off its plans to sell two of its A380s. The carrier told Aviation Daily it is currently “evaluating [its] requirements” for A350s, following a Reuters report quoting CEO Christoph Mueller as saying two more of these aircraft may be needed. In September last year MAB announced a deal to lease four A350-900s, with options for another two.

Pratt & Whitney Shanghai for V2500 Engines

Pratt & Whitney and joint venture partner China Eastern Airlines Corp. (CEA) have agreed to add V2500 engine overhaul capability at their facility in Shanghai. “Pratt & Whitney has helped keep our fleet running through its investment in cutting-edge technology and advanced repair capability in engine maintenance, repair and overhaul,” said China Eastern Airlines VP Feng Liang. “We are pleased to expand our current partnership to include the V2500 engine services.” Shanghai V2500 overhauls are to begin in 2017. Pratt & Whitney is at Booth L39.

Singapore Picks UTC Aero C.A.R.E. for A350s

UTC Aerospace Systems has signed a 12-year agreement with Singapore Airlines to provide asset management and repair services for the airline’s fleet of Airbus A350s. This is part of UTC’s Comprehensive Accessory Repair and Exchange (CARE) Program, under which the global network of MRO companies in Singapore and other locations will provide inventory support and maintenance, repair and overhaul (MRO) services for air management systems, actuation systems, electric systems and lighting. “UTC Aerospace Systems has appreciated working with Singapore Airlines over the years to provide comprehensive support for its aircraft, and we are pleased to extend that relationship to the A350,” said Jim Patrick, VP of commercial aviation services for UTC Aerospace Systems Customer Service.

AJW Renews Contract With Air Incheon

AJW Aviation will continue to provide full ATA Chapter power-by-the-hour support for low-cost cargo operator Air Incheon’s growing fleet of Boeing 737s. The contract began in 2013 and has been extended for a further two years and will be fully supported by AJW’s Singapore hub and Boeing inventory, which allows Air Incheon to be supported in real-time. It also includes a main base kit consignment at Incheon International Airport in Seoul. Air Incheon operates routes throughout China, Japan, Russia, Mongolia and South Korea.

AirAsia to Resume New Zealand Route

The AirAsia Group is expanding its presence in the Australasian market with the addition of a route to Auckland, New Zealand. Starting March 22, the group’s long-haul affiliate AirAsia X will operate the flight as an extra leg on its existing flight from Kuala Lumpur to Australia’s Gold Coast. The carrier previously operated a direct flight from Kuala Lumpur to Christchurch for about a year, but it was canceled in June 2012. AirAsia X currently flies from Kuala Lumpur to Sydney, Gold Coast, Melbourne and Perth. Indonesia AirAsia X flies from Bali to Sydney and Melbourne, and its sister carrier Indonesia AirAsia flies from Bali to Darwin and Perth.
New Yak Trainer Has German Engine

Russian Air Force Yak-152s will have a German powerplant. Prototype’s first flight is expected shortly.

United Aircraft Corp. (Booth J39) is revealing in Singapore for the first time details of the production version of the Yakovlev Yak-152, which has been selected as the new primary trainer of the Russian Air Force. Perhaps surprisingly, it eschews the venerable VOKBM M14 radial engine, which was expected to be carried forward from the current Yak-52 of the DOSAAF military flying schools, opting instead for a German diesel.

Little-known Raikhlin Aircraft Engine Developments GmbH (RED) is based in Adenau (Nürburgring), near Cologne. Established by Vladimir Raikhlin in 2008, based on a previous venture founded in 1995, it offers V6 and V12 aero-engines, the larger of which has been test-flying in a civilian Yak-52 since 2010. Rated at 500 hp, it is this, designated A03, which has been selected for the new trainer, married to a German propeller, the variable-pitch, three-blade MTV-9.

First mooted over a decade ago, the Yak-152 initially made little progress, even in spite of an agreement with China that was to have seen it enter military service there as the Hongdu L-7/CJ-7. One M14-powered example conducted a brief evaluation in that country in 2010, but nothing further has been revealed. The aircraft’s fortunes changed in 2014, when Yakovlev design bureau won a Russian Ministry of Defense tender for development under the project designation “Ptichka-VVS.” Valued at 300 million rubles (US$3.8 million), it stipulated that the Yak-152 should be available for trials before Nov. 25, 2016.

To meet this tight timetable, Irkutsk Aviation Plant will fly the prototype before mid-year and a second example a few months later. Two more will be employed on static tests. Subject to satisfactory evaluation at the Gromov Flight Research Institute, Zhukovsky, near Moscow, 150 aircraft will be obtained for flying schools as a lead-in to the Yak-130 jet.

The Yak-152 is a low-wing design suitable for aerobatic training but incapable of entering an uncontrollable spin. Student and instructor sit in tandem, beneath a single-piece, side-hinged canopy-cum-windscreen, each with an SKS-94M2 emergency extraction system from NPP Zvezda. Service life is specified as 10,000 hr. or 30,000 cycles.

GKN to Supply Engine Shafts for CJ1000

GKN AEROSPACE IS trumpeting “a milestone first agreement” with AVIC Commercial Aircraft Engine Company (ACAE) to supply a key part for the CJ1000 high-bypass turbofan jet engine being developed to power Chinese commercial jet airliners.

GKN (Booth F87) says that the LPT pressure turbine shafts are to be delivered within 12 months for the CJ1000 engine test and development program. They will be manufactured in Norway.

“This contract represents a milestone first agreement with ACAE of China for our engine systems operation and further strengthens our relationship with the Chinese aerospace industry,” said GKN Aerospace SVP Asia Neil McManus. “ACAE is an important customer and this is a major program in a key market,” he said.

“We believe the breadth of expertise we offer in LPT shaft manufacture, specifically, combined with our track record for product quality and consistency, was at the heart of this decision and we look forward to strengthening and expanding our working relationship with the ACAE team and the Chinese aviation industry on this program in the coming years,” McManus said.

GKN says that its engine systems business is a market leader in the supply of aeroengine static and rotating structures, having delivered more than 10,000 LPT cases to the major prime manufacturers of commercial and military engines worldwide.
Surpassing Boundaries in Space

IAI’s proven space programs tailored to your special needs

- IAI’s OPTSAT, EROS optical observation and TECSAR SAR imaging satellites provide very high resolution and high geolocation capabilities.
- The AMOS family of GEO communication satellites provides very high tailored performance.
- IAI provides comprehensive turnkey solutions, including ground stations, mission centers, exploitation and full services.

www.iai.co.il
marketing@iai.co.il

SEE US AT SINGAPORE AIR SHOW ’16
Israel Pavilion, Booth N-41
A major completions and refurbishment center for large VIP aircraft will be set up in Singapore by ST Aerospace.

The first aircraft will arrive “soon,” says Ang Chye Kiat, executive vice president for aircraft maintenance and modification at the Singapore-based MRO company. Up to two Airbus ACJ or Boeing BBJ-size aircraft can be handled at a time in a dedicated 8,825-sq.-ft. facility at Seletar. Investment in the facility and associated leather and cabinetry workshops totals US$17 million to date, with another US$9 million available over the next five years.

ST Aerospace entered the VIP completions and refurbishment business in 2011 through its U.S. affiliate VT San Antonio, branding it Aeria Luxury Interiors. Now it is extending that brand to Singapore.

Ang explained that while ST Aero’s shop might not be the first in Asia (other companies such as Haeco in Hong Kong, Taikoo in Xiamen and Ameco Beijing have developed VIP interior capabilities), it aims to be the most active. It will initially take two to three aircraft a year, refurbishing interiors while it carries out other maintenance tasks such as C-checks and landing gear and auxiliary power unit overhauls.

It doesn’t plan to complete “green” aircraft at this stage, although Ang pointed out that Aeria in San Antonio, Texas, recently delivered its first fresh-from-the-factory Boeing BBJ. “We’re in no rush to take ‘green’ aircraft in Singapore,” says Ang. “Maybe the first in five years’ time.”

Aeria, between its U.S. and Singapore locations, has won five major maintenance and refurbishment contracts so far in 2016, comprising three BBJs, an ACJ and a Boeing 757, with arrivals scheduled through the first three quarters. The A319ACJ and 737 BBJ will be completed in Singapore.

While developing its own in-house skills, ST Aero believes it will be able to call on craftsmen at other companies such as Jet Aviation if it needs to complete larger projects. “There is a small ecosystem of completions talent” in Singapore, says Ang, and collaboration may well be possible. ST Aero, meanwhile, will focus on high-value expertise such as engineering, design and certification, and project management.

ST Aero president Lim Serh Ghee noted that the Singapore center expects to capture work in the region from operators of large business jets who until now have had to fly 10,000 mi. to Europe or the U.S. “We will be able to perceive and understand the cultural inclinations and subtleties of these customers” in designing their interiors, he added.

“ST Aerospace’s VIP interiors center is an example of how local companies can move up the value chain by diversifying into high value-added design and engineering services,” said Lim Kok Kiang, assistant managing director of Singapore Economic Development Board at the opening ceremony on Feb. 11. “This center enhances Singapore’s attractiveness as a hub from which premium aftermarket services are offered to the region.”

—John Morris

Bell 429’s a Clean Machine – Passenger Report

Bell’s medium-size twin-engine 429 is as easy to fly in as it is to look at.

BELL HELICOPTER HAS committed to clawing back a bigger share of the medium-size rotary market from its competitors, following some recent lean years. Part of this push comes from the twin-engine Model 429, which Bell promises brings a smooth ride for both passengers and pilot with a larger than average passenger cabin, significant safety and automated systems, and lower noise and vibration levels.

These, and a competitive pricing and ongoing service regime, have seen the company gain market share in every segment that the 429 is sold into, says Sameer Rehman, Bell’s managing director, Asia-Pacific. “Our live demo tours in Asia-Pacific have shown we now have the right products, and the right multi-mission capability,” he said.

Aviation Week took a 20-min. flight from Seletar Airport in the helicopter prior to the Singapore Airshow. First tarmac impressions, of a smooth and composite-rich exterior free of rivets and screws, gives the 429 a sleek look. This and the generous windows appeal to corporate clients says Bell, as does the excellent access: One passenger on crutches had no problem boarding through the large, wide-hinge doors.

In front, the twin pilot seats face a full-glass three-screen cockpit with excellent field of view, plus significant safety extras including dual three-axis autopilot and an integrated auto data recorder and maintenance flag system.

Behind, the 204-cu.-ft. cabin accommodates up to seven passengers and can easily be adapted to a wide variety of medevac, policing, coast guard or VIP configurations.

In the air, twin Pratt & Whitney PWC207D1 engines gave the 429 plenty of power to deal with the day’s turbulent conditions, even during extreme slow-and-low taxi out. En route, the lack of vibration and noise was impressive even at our 140-kt. cruise speed - something Bell says it has paid special attention to as part of its sales pitch to the EMS and VIP markets.

—Jeremy Torr
Naval Force Multiplier

AW159

From January 2016, AgustaWestland has become the new Finmeccanica Helicopter Division. The AgustaWestland AW159 is the new twin-engine multi-role, multi-mission, maritime aircraft, with advanced day/night all weather operational capability.

In production for the UK Royal Navy, on time and on budget.

One Company. Stronger Together.

finmeccanica.com

Visit us at Singapore Airshow, Booth G55
Jet Aviation to Open MRO Facility in Macau

Jet Aviation (Booth S87) is scheduled to go operational with its business jet MRO at Macau International Airport in the second quarter of this year. The facility, which won the exclusive 10-year concession last year, will operate from an airport authority-built hangar. Jet Aviation will add its Gulfstream and Dassault Authorized Service Center (ASC) approvals and will extend its EASA and FAA Part 145 approvals to cover Macau and gain Part 145 approval from Macau’s Civil Aviation Authority.

“We will be extending all approvals that we have from Jet Aviation Hong Kong,” says John Riggir, VP and general manager of Jet Aviation Singapore. “Macau is really part of our Hong Kong footprint and gives us the option to put aircraft into Macau for longer term maintenance projects. Hong Kong can be a challenge for hangar space so we now can take care of that by having Macau supplying extra maintenance capacity, hangarage and parking.” —Mike Vines

Indonesia BizJet Registrations Seen Rising

“VAST NATURAL RESOURCES and the magnitude of its territory” make Indonesia a promising market for business aviation, although 2015 was a challenging year due to an economic slowdown, currency depreciation, “and reinforcement on the restriction of foreign-registered aircraft operating in the country,” says the Hong Kong-based Asian Sky consultancy, a sister company of Hawker Pacific.

The Indonesian government has restricted operations between internal airports in Indonesia to Indonesia-registered aircraft, Asian Sky says, reducing business aviation. “Business aviation stakeholders are taking a ‘wait and see’ attitude,” the new report says, noting that further pronouncements could be forthcoming as soon as the current first quarter, and that “the number of business jets to be Indonesian registered could be expected to increase given the new regulatory environment.

With 50 business jets and 178 civil helicopters registered in Indonesia as of 2015, the country represents the sixth-largest market in the Asia-Pacific region. “Most of the aircraft based in Indonesia,” Asian Sky says, are “registered locally in order to utilize privileges available only to Indonesian-registered aircraft.”

—Asian Sky

Indonesian-registered aircraft.”

Also, according to the report, demand for charter lift in Indonesia “was very slow until the fourth quarter” of 2015, when activity was spurred by state and provincial elections.

“Charter demand in previous years came from oil, mining and plantations,” Asian Sky says - “most of which have capped their spending on chartering as part of cost savings. Growth going forward is expected to be less than 5%.

“With the importance of Indonesia as a player in the emerging markets, its vast natural resources and the magnitude of its territory, the government needs to aim for ways to make it easier for global companies to operate their business aircraft in and out or within the territory,” Asian Sky says - “not increase limitations.”

“Despite all the challenges, Indonesia continues to be a promising market in the long run for business aviation, with more aircraft deliveries expected to come in the next five years.”

Indonesia’s top three business jet operators are Premiair (Booth R95), Jhonlin Air Transport and Airfast Indonesia, with 16%, 6% and 4% of the total fleet, respectively.
Indonesia hopes to show that unsophisticated airplanes can sell, too. A prototype 19-seater will fly soon.

Rolled out on Dec. 10, the N219 turbo-prop has yet to fly, and so is not able to take its place as star exhibit representing PT Dirgantara Indonesia (PTDI) at this year’s Singapore Airshow. Nevertheless, it is here in spirit, as the embodiment of the fresh, “can-do” spirit at the company’s Bandung headquarters.

A decade ago, PTDI was still under the command of its founder, B. J. Habibie, and enthused with ambitious plans for the N250 50-seat turboprop and a regional jet airliner. But financial realities got in the way, and Dr. Habibie moved on to become president of the Indonesian republic.

His aeronautical successor, director-general Budi Santoso, has the more modest goal of producing a light transport best suited to the smaller (500-meter) airstrips of Indonesia’s remoter areas. This, it seems, is not pleasing all of the people all of the time.

“Every meeting Mr. Habibie scolded us,” recalls Budi. “Habibie says, ‘Are you going to continue making toys? It’s a toy; a small plane!’”

Small it may be, but Budi notes that the manually flown N219 is designed and built with a higher level of technology than the fly-by-wire N250.

And it seems to be pleasing customers, too. Lion Air set the ball rolling with a 2014 provisional order for 50, plus 50 options. Early last year, Buana Air placed an order for 20 plus 10 options; Aviastar Mandiri for 20 plus 10; and Trigana Air Service for 10 plus five. At time of roll-out, Air Born revealed an order for eight.

The hope is to sell 200 over five to 10 years, starting off with 12 per year, and increasing to 24.

With a cantilever, high wing and fixed landing gear, the N219 is powered by a pair of 634 kW (850-shp) Pratt & Whitney Canada PT6A-42 turboprops driving Hartzell four-blade metal propellers. Price is around US$4.5 million. —Paul Jackson
New ‘Seaboots’ for the Twin Otter

Carbon-fiber floats and other specific modifications will optimize the aircraft for water operations.

Is a seaplane just a land plane with floats? “Not anymore,” replies Viking Air, the Canadian manufacturer of the DHC-6 Twin Otter Series 400, displaying here in the static display and at Chalet CD11.

Twin Otters on floats are nothing new, for the seabooted turboprop twin is often to be seen on the myriad lakes of its home country – and on waters farther afield. What will make the forthcoming 400S Twin Otter different is the accompanying range of modifications being introduced to optimize the 15-/19-passenger airplane for its specific duties.

Priced at “under US$6 million” in 17-seat, VFR configuration, the “Twotter” is well suited for short trips and can break even when only half full of paying passengers. Thus, the 400S is adapted for quick turnarounds, having a battery dedicated to the Honeywell "Super-Lite" avionics, so they can be left switched on while (un)loading.

Getting passengers off and on is assisted by modifications to the double swing-out rear doors and internal access to the baggage compartment.

In the 400S, which will be available from early 2017 onward, what were optional corrosion protection (airframe, engine and fuel system) and drainage and sealing packages are incorporated as standard. At extra cost, operators can select IFR avionics, 19 seats or the 15-seat "combi" interior.

Current Twin Otter floatplanes use the Wipaire 13000 twin-float system, either "straight" or with amphibious wheels – the latter, obviously, imposing a further weight penalty. On the 400S, Viking is promising composite floats, suggesting that it will adopt the new CA-125 "straight" float being offered by Carbon Aerospace of Everett, Washington, for delivery from late 2016. As an added bonus, the CA-125 offers a weight saving of 300 lb. (136 kg), compared to aluminum float sets.

"With the modifications we are making to streamline the flight deck and optimize the aircraft for seaplane operations, we see our market share expanding even further,” said Evan McCorry, VP of international sales and marketing at Viking. “Quite simply, no other twin turboprop can do what the Twin Otter can do, especially on water.”

Seastar Secures Sino-Springboard at Show

CHINESE FUNDING ENDS the long march to production for Dornier’s Seastar amphibian. Manufacturing lines are planned in both China and Europe.

Aircraft production lines are like buses: You wait 30 years, and then two come at once. In this case, the doubled-up manufacturing is for Dornier Seawings’ Seastar, a 14-seat, amphibious flying boat with high-mounted push/pull turboprops, designed in the early 1980s by Claudius Dornier as a venture separate from his father Claude’s better-known Dornier company. Two prototypes were built, one of which continues to fly as a demonstrator.

More recent attempts by son Conrado Dornier to launch Seastar production in either the U.S. or Canada proved unsuccessful – and should not be confused with the S-Ray two-seat amphibian being built in the Philippines by his cousin Iren Dornier.

Enter, into this confusing situation, Dornier Seawings GmbH as current promoter of the Seastar. Owned jointly by the Dornier family and two Chinese companies, Dornier Seawings (Booth J79) is based at an airport with the typical, southern German name of Oberpfaffenhofen – where, by pure coincidence, the post-World War II incarnation of the original Dornier company was based.

Late last month, Dornier Seawings announced that Diamond Aircraft, the renowned manufacturer of light singles and twins, would build an initial batch of 10 all-composite airframes for the Seastar and deliver components to Oberpfaffenhofen for final assembly on a production line there.

Given that Diamond has its headquarters “next door,” in Austria, this would seem to simplify the logistics – except that the contract is with the Canadian branch of Diamond, in London, Ontario.

In Singapore this week, Dornier Seawings is expected to announce the establishment of a second production line at Wuxi, China. This is, presumably, to satisfy the ambitions of the Chinese backers, although it is presently unclear where fuselages for Wuxi will be sourced.

The Seastar fits neatly in the range of amphibians and flying boats currently under development in China. Offerings begin with the two-seat Oxai M2 Wind Ling now seeking funding; and progress through the six-seat Shijiazhuang HO-300 (development of Lake LA-250 Renegade) undergoing flight testing; to the giant, four-engine China Aviation Industry General Aircraft AG600, of which the prototype will fly shortly.

Sino-seaplanes for sundry situations. Just add water.
AVIAGE Working to Be Global Player

AviationWeek.com/ShowNews

A VIC and GE’s joint venture for the global avionics market, Aviage Systems, is making its debut here at the Singapore Airshow as a major supplier of avionics systems for the Comac C919 airliner.

Next, it intends to leverage that experience into winning avionics business on widebody programs, especially the Comac/UAC large-airliner program, for which it is preparing its proposals.

The JV with AVIC was established in March 2012, following GE’s acquisition of Smiths’ avionics business, which was a distant fourth in the avionics market behind Rockwell Collins, Honeywell and Thales.

Folding Smiths’ avionics into the JV meant GE effectively nudged Rockwell Collins and Thales out of the running for the C919 avionics contract.

Aviage president & CEO Alan Jones says Aviage may be new, but it has experience thanks to the Smiths Aerospace acquisition and the involvement of AVIC’s avionics business. Jones says it will win the confidence and trust of people in the industry by doing a good job with the C919 and by positioning itself as an innovator.

“We are committed to executing on the C919, while developing solutions to grow our market position, demonstrating next-generation product capabilities on business jet and widebody platforms both in China and worldwide,” says Jones.

In the short term, "our number one priority is to exceed the expectations of Comac through our execution on the C919 program. We are keenly focused on the C919’s 2015 first flight needs and are making steady progress toward completion of its certified integrated modular avionics (IMA) platform.

"Also a priority for our business is the evolution of this IMA product to meet the needs of next generation civil aircraft. This entails the development and application of new technologies and architectures to yield even greater system performance with reduced size, weight and power. Within the next five years, this next generation solution will be flying and available for both new aircraft designs and life extension programs,” says Jones.

“We hope that we can discuss and establish cooperative relationships with more partners on special requirements of widebody aircraft in the future,” and especially the COMAC/UAC widebody program, he says. Aviage is here at Booth J78.

—John Morris
Vietnam, Philippines Lead Region’s Reaction to China

China is a big country and other countries are small countries, and that’s just a fact,” Beijing’s then foreign minister, Yang Jiechi, impatiently told Southeast Asian leaders looking for U.S. support in the South China Sea in 2010. The message was clear enough: They should do as they were told.

With a great power expressing such an attitude, and increasingly seeming to want control of just about all of the South China Sea, one might expect countries adjoining that body of water to begin hurried rearmament efforts. In fact, only two are clearly reacting to China – Vietnam strongly and the Philippines much less so. There is also a hint that concerns of Chinese dominance are influencing Singaporean defense procurement policy, though the city-state makes no such public suggestion.

Vietnam, with a maritime territorial dispute with China, has been shifting resources from its army to its navy and air force while keeping defense spending steady at around 2.2% of GDP. Its strategy is to make nearby waters dangerous to China in case of war, just as Beijing is trying to deter the U.S. from operating close to China, says Tim Huxley, Singapore-based executive director for Asia of the International Institute for Strategic Studies (IISS).

Hanoi’s key move has been building a submarine arm, a traditional weapon for a small naval power facing a large one, and all the more useful in this case because China’s anti-submarine capabilities are not strong.

In military preparations, the Philippines has responded only halfheartedly to the escalation of its dispute with China over features in the South China Sea in the past few years. The main move has been an order for 12 Korea Aerospace Industries FA-50 light strike aircraft in 2014 to restore the fast-jet force. According to Huxley, the Philippine armed forces have good plans for modernization, but the country’s politicians have other priorities.

Singapore’s armed forces look so overly capable of defending against Malaysia or Indonesia that Sheryn Lee, of Macquarie University, Sydney, wonders whether the risk of involvement in confrontation with China has entered the city-state’s defense-procurement calculations. War with China would be just about the last thing that Singapore would want. But Lee suggests situations could arise in which Singapore may want to refuse Chinese demands backed by military force. An example would be an order from Beijing to cease supporting the U.S. in a confrontation in the South China Sea.

Singapore spent 3.3% of GDP on defense in 2014, according to Sipri.

Indonesia has no territorial claim in the South China Sea that overlaps with China’s, though the famous dashed line that Beijing prints on maps intrudes on the Indonesian exclusive economic zone. Jakarta is aiming at raising the sophistication of its military, but, according to Lee, “it’s clear that Indonesia’s force modernization is a reaction to keep up with developments in Southeast Asia.” Indonesia spent only 0.8% of GDP on defense in 2014, but the budget is supposed to rise.

Malaysia, another claimant in the South China Sea, was increasingly concerned about China’s activity there last year, notes IISS. “However, the country’s economic slowdown and the government’s prioritization of domestic spending continued to restrict efforts to develop the maritime and air capabilities that the armed forces’ leadership saw as a necessary response to China,” the think tank adds.

The Thai military, meanwhile, remains domestically focused – to the extent that it has been running the country since it took control in 2014. Thailand and Malaysia each spent 1.5% of GDP on defense in 2014.

—Bradley Perrett
CAN YOU MAKE OUR SATELLITES FASTER?

EARTH OBSERVATION SATELLITES BUILT FAST AND TO LAST.
The advanced way we build means that we can deliver satellites in record time, without compromising on quality or reliability: not one we’ve built has ever failed in orbit. And if you still can’t wait for your satellite to be built, you can enjoy access to our existing Earth observation constellation immediately. Well, as a builder of spacecraft that circle the Earth at up to 8 km per second, we know a thing or two about speed. Find out more at airbusds.com/EarthObservation

ASK US
AIRBUS
DEFENCE & SPACE
The global economy is in transition. Global economic growth is slowing as the Chinese economy cools off. Oil and commodity prices are plummeting. The U.S. Fed is beginning to increase interest rates at the same time that Europe and China are engaging in looser monetary policies. And the Bank of Japan just introduced negative interest rates to stimulate growth.

A byproduct of this macro environment is significant changes in currency exchange rates (FX); namely the strengthening of the U.S. dollar versus key global currencies.

Consider what has happened in the last 18 months. The Russian ruble has lost more than half its value versus the U.S. dollar and the Brazilian real isn’t far behind. Canada is feeling the hangover of the global commodity bust with a 30% decline, and the euro and British pound have weakened 20%.

Aircraft, parts and aviation fuel are generally priced in U.S. dollars. So how is this FX volatility impacting aerospace suppliers?

For U.S. suppliers, the news is mostly negative. Prices for equipment and services have effectively increased for customers outside the U.S. and most costs are born in dollars. The immediate impact has been in the aftermarket, where MRO demand in Europe and Latin America curtailed over the last 18 months as airlines struggled with a weak revenue environment and higher costs for aircraft parts and services.

Business aircraft manufacturers are also affected as some of the key markets for large-cabin aircraft are beset with currency weakness. A Gulfstream G650 order by a Russian oligarch 18 months ago for 2.2 billion rubles now costs 4.9 billion rubles. It’s no wonder that production rates of large business jets are now falling.

In contrast, there is some positive news – particularly for those European suppliers that price in U.S. dollars with significant cost elements in euros. At Dassault, for example, each one cent weakening in the euro/U.S. dollar rate can add 8-10 million euros to the bottom line. For Airbus, which prices 70% of its revenues in U.S. dollars, the same figure is 100 million euros. Results are even more significant for firms with labor-intensive activities like aerostructures or aircraft maintenance. To what extent this tailwind contributes to the bottom line, of course, depends on currency hedging policies.

What about the elephant in the room – the potential impact on the huge backlog of air transport aircraft? Here, the story gets fascinating – particularly when combining higher local aircraft prices with 60-70% lower fuel prices. Consider an airline like Lion Air, which placed a massive US$21.7 billion order (list prices) for 29 Boeing 737-900s and 201 737 MAXs in 2011. Since then, the Indonesian rupiah has weakened 40% at the same time that economic growth in Southeast Asia has declined. The 180 trillion rupiah deal now costs 295 trillion. If these conditions don’t change, it seems like only a matter of time before airlines like Lion, Gol (Brazil) or even European carriers begin to cancel or defer orders – particularly when progress payments are due in a few years.

Why hasn’t there been a larger impact from FX on the air transport aircraft backlog? In part this may be due to the financial breathing room for many airlines created by plummeting fuel prices. With aviation fuel priced in U.S. dollars, U.S. airlines have posted record profits, although in other countries weaker currencies offset fuel cost reductions. All eyes are focused on the volatile nature of fuel prices, while the shifts in FX are generally more gradual.

Of course FX isn’t static and the U.S. dollar will eventually weaken in the long run. But given China’s need to devalue its currency, Japan’s ongoing funk, Europe’s shift to looser monetary policy and Latin America’s malaise it isn’t an unreasonable bet to expect an even stronger U.S. dollar in 2016 and 2017.

Aerospace executives have been challenged by a volatile environment in recent years with geopolitical unrest, the lingering effects of The Great Recession, and wild swings in fuel prices. A new wildcard – FX – is now on the table.
NC212i, the most versatile and reliable light lift aircraft with advanced glass cockpit avionics and autopilot system, is designed to be well operated in rural area due to its Short Take-Off and Landing capability. This twin turboprop engine aircraft is the only aircraft in its class equipped with ramp door. NC212i is also a multi-purpose aircraft that can be used as passenger transport, cargo transport, troop/ paratroop transport, medical evacuation and maritime surveillance.

Find out more about NC212i and other Indonesian Aerospace (IAe) products at Singapore Airshow 2016.

COME & VISIT US at
Singapore Airshow 2016
Booth No. C77
HOPE. DELIVERED.

AT LOCKHEED MARTIN, WE’RE ENGINEERING A BETTER TOMORROW.
The all-weather capable S-92® helicopter continues Igor Sikorsky’s vision of the helicopter as a lifesaving tool. The S-92 helicopter features a cockpit design that reduces pilot workload, and has exceptional handling qualities and maneuverability during approach, hover and landing. SAR. VIP. Oil and Gas. No matter the mission, Sikorsky provides safe and reliable performance. Fly Out. Fly Back. Fly Safe.™

Learn more at lockheedmartin.com/sikorsky or contact your Sikorsky representative.