AgustaWestland A109S Grand

The order book for this updated 109 variant currently stands at almost 60. AgustaWestland received EASA approval for the type in June (as its first customer, a Briton, took delivery) and FAA certification is expected by next month. The company planned to have delivered five airframes by this year, and is expecting by next month. The company is building parts and tooling to construct the first prototype.

Lowest cost, highest performance record of the out-of-production A109 K2 and is aimed at the search-and-rescue (SAR) market. Sliding doors on both sides of the cabin offer improved access and, as such, attract public-service operators as well.

The FADEC-equipped Pratt & Whitney Canada PW207C turboshift engines, providing a combined 815 shp, and an updated transmission give the Grand good performance in terms of hovering-out-of-ground-effect and speed in forward flight. According to the company, the 7,000-pound-mtow helicopter has a 12,000-foot ceiling on a single engine and, with both powerplants running, offers a rate-of-climb of 1,900 fpm. Agusta-Westland also claims that operating costs are up to 36 percent lower than its competitors.

US-101

The U.S. military selected a variant of AgustaWestland’s EH-101 as the new Presidential helicopter last year. Development of the helicopter–christened the VH-71A Kestrel–is now under way. A first airplane, which will serve as a testbed until three actual test vehicles arrive in the spring next year, landed at a U.S. Navy test facility in November, and the air and ground crews immediately began familiarization training.

Technically, the test helicopter is a leased Italian Navy EH-101. Because of the program’s tight schedule (first deliveries are slated for 2009), program managers decided to lease an airplane to get a head start on flight and maintenance training. Testing on a real helicopter will also help the program team figure out where to place antennas and other airplane-mounted devices.

Engine integration testing of the VH-71A began on a contractor vehicle during the summer, at Lockheed Martin’s Owego, N.Y. facility.

Bell Helicopter Bell 210

The Bell 210 achieved FAA certification in July, 18 months after launch and seven months after first flight. The Huey lookalike features dynamic components from the Bell 212 (main rotor hub and blades, tail rotor, main and tail-rotor support structure, transmission, rotating controls and tailboom), and a Honeywell T-53-S17BCV engine. The result, according to Bell, is a zero-time, FAA-certified, single-engine medium utility helicopter for about $3 million, compared with $5 million for a similarly sized off-the-shelf commercial product.

Bell 210

Bell said the 210 has direct operating costs of less than $650 per hour–offering what the OEM terms a “significant reduction in operating costs”–and comes with an “excellent” commercial products warranty. An airplane will be on display at Heli-Expo later this month in Dallas. First deliveries are scheduled for May.

Bell 249

Program development of this IFR twin is proceeding on schedule with Transport Canada and FAA certification expected during the third quarter of next year. Bell said it has taken nearly 140 orders for the new helicopter, which will enter a market sector crowded with established types.

Modified Bell 427 prototypes are already flying with Model 429 components, and first flight of the complete airplane is scheduled for the third quarter. At press time, Bell had successfully completed concept demonstration tests, wind-tunnel tests and inlet and exhaust testing. Detailed design is nearing completion, and the company is building parts and tooling to construct the first prototype.

The Bell 429 will be the first to feature new MAPL components, including a 70 percent larger cabin (compared with the earlier Bell 427), and a new composite horizontal stabilizer that was test-flown last May. Work continues on anti-torque devices, including a rotorless assembly known as PATS (propulsive anti-torque system).

Bell plans this year to run an engineering ground-test rig using a full-size gas turbine engine, inlet fan, bifurcated ducting and a series of test thrusters. PATS provides anti-torque directional control and propulsive thrust without a conventional tail rotor. Combined with reductions in main rotor speed, it could enable helicopters to cruise comfortably at 160 to 170 knots.

Bell/Aguusta Aerospace AB139

With the AB139 now certified and being delivered around the world, Bell/Agusta’s new challenge is to keep its production rate in step with customer demand. With more than 100 airframes on order and capacity still set at around 50 per year, the company will have to juggle numbers and customers for some time to come. The recent announcement of an extension of the Philadelphia facility to accommodate a second and domestic AB139 line has not come a moment too soon.

VH-71A Kestrel
AgustaWestland has also taken an increased 40-percent stake in the BA609 program.

**Eurocopter**

In September, Eurocopter’s experimental BK117 lifted off from its Donauwörth, Germany site for the first time with an electrical flap control system. Adaptive rotor systems promise to reduce vibration as well as the noise caused by rotor blade tip vortices.

The FAA has approved Eurocopter’s request to build 350 B2 and B3 AStars at its U.S. facility in Columbus, Miss.

**EC 225**

This new-generation Super Puma entered service last year with the government of Algeria (as a presidential transport) and on North Sea duties with Bristow Helicopters. It was certified for unrestricted operations in icing conditions in time for the northern winter and, by next year, a new FAA level-D simulator will be commissioned in Marseilles, France.

The EC 225 has a maximum weight of nearly 23,000 pounds and can carry two pilots and 24 passengers or more than 11,000 pounds of cargo. Its twin Turbomeca Makila 2A engines deliver a cruise speed of 149 knots.

**EC 175**

Aviation Industries of China (AVIC II) and Eurocopter have agreed to jointly develop a new six-ton (13,230 pounds) helicopter—the EC 175—to fill the niche between the five-ton AS365 Dauphin and the 10-ton Super Puma.

A five-year development phase is due to start soon. The new civil type is scheduled to make its first flight in 2009, with European and Chinese certification, and production, set for 2011. Each company will invest $322 million to develop the new helicopter. Production will be shared on a 50/50 basis and each country will have its own assembly line. Sales forecasts suggest a potential worldwide market for some 800 helicopters over the next 20 years.

Eurocopter president Fabrice Brégier said, “The program guarantees more than 30 years of work and 2,000 high-tech jobs for Eurocopter and its partners. Over 20 years, the program will be worth close to €10 billion ($10.7 billion).”

**EC 222**

The company has upgraded its FH1100 with a new EFIS cockpit, replacement stainless steel rotor blade and a KaFlex lubrication-free driveshaft. President Georges Van Nevel told AIN that the company will display a latest-build model FH1100, based on the original Fairchild Hiller that first flew in 1963, at this month’s Heli-Expo.

The company claims that the FH1100 has the lowest operating costs in its class. The FAA has yet to issue a production certificate for it, and Van Nevel could not predict when one would be forthcoming. “However it is a two-year process and we are getting to that point now,” he told AIN.

**Hindustan Aeronautics**

**Dhruv**

The HAL Dhruv is a multi-role helicopter in the 12,120-pound weight class built to meet FAR 29 and certified by India’s Director-General of Civil Aviation (DGCA). Currently powered by two Turbomeca TM333-2B2 engines, it is claimed to meet Category “A” takeoff and landing performance requirements.

First civil deliveries of the Dhruv are said to be “imminent.” The first of two helicopters for the regional government of Jharkhand is ready, with the second due for completion later this year. A reported order for 20 civil airframes, from Mumbai-based offshore operator Azal Aviation, never advanced beyond memorandum of understanding stage. However, AIN has learned that a recent change of management at Azal might present new opportunities.

**Kamov**

**Ka-32**

With certification or validation held in six countries outside Russia (Canada, South Korea, Mexico, Spain, Switzerland and Taiwan), Kamov will seek approval for the export variant of its specialist loadlifter from the European Aviation Safety Agency this year. Last year the OEM established a service...
center in the Republic of Korea and plans to open another in southern Spain by July.

Logging and firefighting are the Ka-32’s main roles. Spain’s government recently recognized the type as a principal rotary-wing asset in responding to serious fires (defined as those covering more than 1,235 acres). Neighbor Portugal, which also depends on helicopters to contain summer fires, is said to be a potential customer.

Similar contracts are being negotiated farther east, in Cyprus and Turkey. Leased Ka-32s are also in Greece, and some 40 are already flying in South Korea on utility and coast guard duties.

Ka-32

A full-scale mockup of this new utility single was exhibited at an airshow in Moscow last summer. Funding is currently being sought to encourage the OEM to start building a working prototype.

Another co-axial rotor design, the Ka-115 has a single engine and should deliver a 372- to 434-mile range. Despite its basic configuration, it will include rotor blade de-icing and engine anti-icing as standard. The company is currently targeting the domestic market.

Ka-226

Kamov is seeking FAA certification for this lightweight (7,480 pound) twin this year. The Ka-226 has a replaceable cabin “pod” enabling quick interior changes, such as from a six-place passenger interior to EMS configuration in less than an hour. With the cabin detached, the helicopter can carry 2,860 pounds externally.

Production of the Ka-226 started in 2004. Rolls-Royce is contracted to supply 50 additional 250-C20R engines for the program this year. Turbomeca’s Arrius 2G2 is also listed as an option.

Kazan Aktai

Still being prepared for flight tests, now expected “sometime in 2006,” the Aktai is designed for commercial VFR operations carrying passengers or cargo, as well as search-and-rescue operations.

It is equipped with a simplified main rotor hub with elastomeric hinges and composite main and tail rotor blades. The helicopter is powered by a single VAZ-4265 piston engine.

PZL Swidnik SW-4

Celebrating 50 years of helicopter manufacturing this year, the Polish manufacturer is close to UK CAA certification of its SW-4 light single, after which EASA approval will be sought. The company has signed a deal to purchase 10 Rolls-Royce 250-C20R light turbine engines for the program.

Company spokesman Jan Mazur says PZL has also signed a memorandum of understanding with Rolls-Royce, to pursue the idea of using the 650-shp 250-C30 to power a SW-4 growth variant. “Upgrading the engine would be a relatively easy procedure,” he said, “due to the R-R unit’s small size and high parts commonality with the current unit.” The SW-4 is claimed to deliver ranges approaching 500 miles.

Mi-38

In partnership with the Mil design bureau and Eurocopter, Kazan continues to develop the latest Mi-38 (based on the ubiquitous Mi-17 transport), with plans to begin flight testing next year. Three variants—VIP, passenger transport and medevac—will be offered. The plan is to meet FAR/JAR 29 requirements and be suitable for single-pilot IFR operations in temperatures ranging from -60 degrees C to 50 degrees C.

According to Kazan, the helicopter’s performance and fuel consumption will offer “significant advantages” over other types in its class. Its PW-127T/S engines, rated at 2,500 shp, were developed by a Pratt & Whitney Canada/Klimov joint venture and enable the helicopter to carry up to 13,200 pounds internally or 17,600 pounds externally.

The helicopter has an EFIS cockpit and the airframe features composite blades with increased service life, “anti-vibration crew seats” and a large cargo compartment. Triple-redundant electric and hydraulic systems are also included.

Sikorsky S-76D

Launched at last year’s Heli-Expo in Anaheim, Calif., the S-76D variant will feature composite rotor blades, a quiet tail rotor, a rotorcraft icing protection system (RIPS, which was recently certified on the S-92), a Thales cockpit with an integrated avionics system and P&W PW210 engines.

An announcement about the blade supplier and wind-tunnel tests was expected at press time, and a full-scale mock-up, complete with the Thales cockpit, will be on display at Heli-Expo this month. The first S-76D is planned for delivery by the end of 2008.

X2

Sikorsky’s new light helicopter, based on two contra-rotating rotors and a rear propulsion fan, promises a maximum speed approaching 250 knots. A two-seat demonstrator, to be built at Sikorsky subsidiary Schweitzer at Elmina, N.Y., is scheduled to fly before year-end. The helicopter’s fly-by-wire package has already taken to the air aboard a Schweitzer 333 testbed.

Sikorsky CEO Steve Finger said the X2 will “maintain or improve” all the vertical flight capabilities of rotorcraft while still delivering the speed increase. “Aircraft such as the V-22 tiltrotor and the vertical-landing Joint Strike Fighter are compromises—they deliver the speed but at the expense of hover performance. We believe there is a market for a true helicopter that offers this significant speed increase, not only for the military but in civil applications such as offshore support.”

Finger added, “A true helicopter that goes fast has the widest market potential; everything else is just niche.”

The X2 bears a striking resemblance to Sikorsky’s advancing blade concept demonstrator that reached similar speeds in the 1970s. That aircraft suffered particularly from vibration and inherent drag, drawbacks that Finger said the company has since overcome. “It’s a matter of technologies developed over the past 30 years coming together.”

The X2 fly-by-wire (FBW) system made its first flight at Elmina, N.Y., in November. The FBW testbed was said to perform “flawlessly” during the 30-minute flight, while demonstrating the basic capabilities of the Hamilton Sundstrand/Honeywell fly-by-wire package.