OEMs tap lucrative oil and gas segment

Thierry Dubois and Mark Huber

While the U.S. Congress has avoided mandating budget sequestration until March, including anticipated defense spending cuts, Pentagon sources have been predicting a new austerity approach or further cuts in defense programs. The impact all this will have on new helicopter development programs remains to be seen. However, if the impact is indeed as severe as Pentagon officials are forecasting, it will be a serious blow to a sector that is already dealing with the impact of the now-called “slow [and] after the fact” approach to spending on the defense acquisition process. Some analysts are already forecasting that the military will opt to maintain its inventory of helicopters and all that has been invested in the initial research and development of these aircraft, including airframe and rotor technology. If that comes to pass it could dampen expectations that new technology, including that for more efficient rotor systems, would find its way through to the civil sector. This is the same trend that has been observed throughout Europe and parts of Asia.

New civil programs such as the AW189, B2S and EC175 rely heavily on technology originally developed for the military, and shifting all related R&D expense onto the private sector could inhibit development of future new helicopters. In the U.S. Army Bell officials are concerned that the current dynamics will erode industry’s ability to design future military helicopters.

Last year the Defense Undersecretary for Acquisition, Technology and Logistics, Mr. Frank Kendall, presented a Credit Suisse investor conference that it was likely the Pentagon would launch an initiative to fund research into the next generation of military helicopters, in keeping with synthetic vision, moving map and other advanced augmentations. The U.S. Army aviation program office acknowledged the number of future military helicopter programs to be smaller and that the R&D budget was expected to be smaller. The impact all this will have on the equipment of modern air forces, whether the government or new helicopter companies, is likely to be minimal. The impact of this will continue to mean smaller R&D budgets, which continues to be a factor in the development of the future military helicopter.
Continued from preceding page

MD

540F

MD Helicopters announced plans last year to offer a six-blade variant of its MD530F single with a more powerful Faidec Rolls-Royce 250-C30HU turboshaft and more robust landing gear. The new helicopter would be available for both the commercial and military markets—the latter as a scout/gunship—and will include a full suite of Elbit glass panel avionics. Preliminary specifications call for the MD540F to have a maximum external gross weight of 4,100 pounds, a useful load of 2,000 pounds, hover in ground effect at 16,000 feet and out of ground effect at 14,300 feet, a VNE of 152 knots, a range of 232 nm and a service ceiling of 20,000 feet. Certification is expected in this year’s first quarter.

Quest AVQ

Dubai-based Quest Helicopters has postponed first flight of its AVQ light twin by half a year, to “August or September” of this year. A prototype four-seater is said to be almost ready to fly, although the company would not provide any photo.

Unveiled in November 2011, the AVQ has two counter-rotating rotors in tandem configuration and an ejection capsule for the occupants. Another feature is fly-by-wire controls. Quest Helicopters wants to have the AVQ certified in Ukraine, where it is being designed, before involving the EASA. The four-seater could be produced in “limited” quantities (if any) in a factory to be built in the United Arab Emirates. Quest designers have now turned their attention to a 10-15 seater, which they believe will appeal to a broader market. It would have tandem rotors but neither fly-by-wire controls nor the escape pod.

Robinson R66 Police

The police variant of Robinson’s R66 turbine single was certified in September last year, and the company plans to release an electronic news gathering variant later this year. The $1.104 million police model comes standard with Flir camera, fold-down color monitor, searchlight and dual audio controller. Many additional options are available. The R66 police has a maximum cruise speed of 120 knots, a full-fuel payload of 800 pounds and a hover ceiling OGE at max weight of 10,000 feet.

Russian Helicopters

Redeveloped Ansat

Russian Helicopters announced last spring that it is redeveloping the Kazan Ansat light twin with conventional flight controls in place of the fly-by-wire (FBW) system it has been flying with thus far. Kazan Helicopters has started a test program with two prototypes fitted with a hydro-mechanical flight control system. The manufacturer has filed an application with the Interstate Aviation Committee’s Air Registry for additional type certification.

The FBW control system that equips the original Ansat met “an unexpected obstacle, as no FBW civil helicopter had been certified before and no standard requirements existed,” Russian Helicopters said. Russia’s defense ministry currently uses the FBW variant of the Pratt & Whitney Canada PW207K-powered aircraft for pilot training.

Kamov Ka-226TG

Although the Kamov Ka-226T single is still in development, Russian Helicopters is already working on the Ka-226TG, a “modernized” version to “meet the client’s needs for operations in the Far North and on the Arctic shelf.” It will feature a KOBO-226T avionics suite for low-visibility operations, and additional fuel tanks will boost range.

The coaxial-main-rotor Ka-226T/FG uses Turbomeca’s 730-shp Arrius 2G1 turboshort, which is already certified. It has an mtow of nearly 8,000 pounds, a maximum payload of 2,860 pounds and a maximum speed of 135 knots. It can carry up to seven passengers. The service ceiling is 24,000 feet. Russian Helicopters plans to deliver the first Ka-226T/G this year.

Kamov Ka-62

Russian Helicopters plans to fly the Ka-62 medium twin in August. Russian certification of the 12- to 15-passenger helicopter is planned for the fourth quarter of 2014, with deliveries beginning in 2015. Offshore oil and gas passenger transportation is seen as a major application. Other roles include EMS, search-and-rescue, law enforcement, border patrol, training and executive transport.

Turbomeca is powering the aircraft with two Ardiden 3G turboshortshafts of 1,680 shp each. Also new, among other improved structures and systems, is the five-blade main rotor. Austria-based Zoerklker supplies the rotor gearboxes. The Transas KBO-62 avionics suite includes a health and usage monitoring system (Hums).

The Ka-62’s mtow is 14,300 pounds, for a maximum payload of 5,290 pounds. Maximum range is said to be 405 nm. The Ka-62’s maximum cruising speed is 157 knots. The Ka-62 is a redevelopment from a 1980s design.

SiKorskY

S-76D

The FAA certified the Sikorsky S-76D medium twin, launched in 2005, on October 12 last year.

The new version features major changes such as a digital four-axis autopilot and a Thales TopDeck avionics suite. The dual-speed main rotor provides a quiet mode. A still-to-be-certified rotor de-icing system for all-weather capability will be available as an option. Each PW210S engine provides 1,077 shp at takeoff and offers 8-percent better fuel efficiency than its predecessor powerplant, according to Pratt & Whitney Canada. The 11,700-pound S-76D has a range (without reserves) of 442 nm.

S-434

Sikorsky did not respond to AIN’s repeated requests for fresh information on the S-434 light single. Certification has been postponed several times.

An improved Schweizer S-333, the S-434 sports a four-blade rotor, a new tail-rotor blade design, a structurally enhanced landing gear, a new trim system and an improved Kaflex driveshaft. The main rotor and its transmission come from the unmanned Fire Scout.

The S-434 and the S-333 use the same Rolls-Royce 250-C20W turboshort, which provides 320 shp. The new main rotor allows the mtow to increase by 300 pounds, to a maximum of 2,850 pounds. This translates into a useful load of “more than 1,400 pounds.” The new tail rotor can generate some 20 percent more thrust than the tail rotor on an S-333, improving handling and controllability, despite the increased weight, according to Sikorsky.

© 2013 AIN Publications. All Rights Reserved. For Reprints go to www.ainonline.com.