

The Best of Times, The Worst of Times

By Mike Hirschberg, Executive Director

As 2013 fades behind us and year-end reports remind us of the difficulties that were encountered, it is important to take stock of how vibrant and exciting the future of vertical flight technology is.

Tough Times

By nearly every measure, 2013 was tough. The global economic downturn, now entering its eighth year, has continued to limit the ability of both commercial and government customers to procure new rotorcraft. Militaries world-wide have cut back on their acquisition plans for new equipment. The U.S. military – the world's largest purchaser of rotorcraft – became the primary recipient of severe budget cuts known as "sequestration."

Many companies had layoffs throughout 2013 and into early 2014 – in addition to forced furloughs in both government and industry – as military plans were scaled back. Some analysts have forecast a plunge in U.S. military rotorcraft procurement of nearly 50%, comparing 2018 to 2012 data.

Not so, according to Forecast International. Globally, unit production of civil helicopters is expected to grow annually faster than the number of military helicopters shrinks. Compared to 2012, the number of helicopters produced is expected to have increased 20% by 2018, though total value remains about the same. The quantity and value of world military production are both predicted to fall by about one-fourth, but civil production is expected to increase by 50% in numbers and nearly three-quarters in value. The estimated total world helicopter production is valued at \$23.6B in 2012, \$26.4B in 2013, \$23.8B in 2018, and \$24.2B in 2020.

Most of the world's major helicopter manufacturers had released their 2013 performance results at press time, with every single one producing slightly more aircraft than in 2012, even in this difficult environment.

A Bright Future

At the recent AHS Aeromechanics Specialists' Meeting, Dr. Bill Lewis, the Director of the U.S. Army's Aviation Development Directorate (ADD), repeated his frequent assertion that "this is an exciting time to be in the rotorcraft business." He can



say that, with the Army leading the effort for the Joint Multi-Role (JMR) technology demonstrators, which are hoped to lead the way to the next generation Future Vertical Lift (FVL) requirements for the U.S. military (which doesn't get figured into these procurement forecasts).

In recent years, the Army has also fielded the latest models of the Black Hawk and Apache, and is looking at new blades and other upgrades for the Chinook. The U.S. Navy has fielded the Romeo and Sierra models of the Seahawk. The Osprey is proving its mettle for both the Marines and the Air Force Special Ops, while several countries are asking for the tiltrotor as well. The Marines have also fielded the advanced, four-bladed H-1 models, the Viper and Venom, and will soon be testing the giant fly-by-wire CH-53K.

Sikorsky will be flying its new coaxial S-97 Raider light tactical helicopter demonstrator this year, and MD Helicopters is marketing new models of its product line for U.S. and international customers.

Other military programs are accelerating around the world. The NH90 is nearing its 200th delivery, the latest model of the Tiger is being fielded, the AW101 is continuing to find new customers worldwide, and the Wildcat will enter service with the British Army later this year.

China now has three operational indigenous attack helicopters: the Z-9, Z-10 and Z-19. It has flown a new utility helicopter, the Z-20, and has lofty technical ambitions for future rotorcraft. Russia has finally declared its Night Hunter and Alligator attack helicopters operational, while Russian Helicopters is constantly developing new versions of its wide product range and will soon be flying its

new Ka-62. India has had difficulty with successfully completing helicopter procurements from abroad, but its indigenous programs are slowly but surely meeting success, including the Dhruv Advanced Light Helicopter (ALH) and Light Combat Helicopter (LCH), while its Light Utility Helicopter (LUH) is now taking shape. The Korean Surion is being followed by new designs, while Turkey is also now developing its own indigenous helicopters.

Commercial products are also advancing. Bell's 525 Relentless and Short Light Single are both expected to make their first flights this year. Sikorsky's S-76D has been certificated, as has the AgustaWestland AW189 and Airbus Helicopters' EC175; the EC145 T2 should be certificated soon. Robinson continues worldwide deliveries of its successful R66 light turbine helicopter, while Enstrom is planning new models now that it has better financial backing. Following AgustaWestland's Project Zero and Airbus Helicopter's X³, exciting new concepts for high speed civil rotorcraft – a civil tiltrotor and a compound helicopter – are being planned under the Europe Union's Clean Sky 2, with the AW609 civil tiltrotor being updated in parallel. Meanwhile, new entrants like Hélicoptères Guimbal and Marengo SwissHelicopter offer their innovative approaches with significant market interest.

An Exciting Future

Yes, recent years have been very tough for many in the industry and the sea change is still happening. Global military procurements will continue to come down, even as commercial sales increase. After hitting an expected peak in 2014, the total value of world rotorcraft sales is expected to stabilize at 2012-levels through the end of the decade. The transition from a predominantly military-based rotorcraft industrial base to one on par with civil developments will be painful.

But the exciting programs under development today – and the plethora of new possibilities on the horizon – gives confidence to the rotorcraft technical community that working on the future of vertical flight is indeed an exciting business to be in.

