Safran Helicopter Engines has unveiled its new high-power engine family called Aneto at Helitech International 2017. It will be targeted at the super-medium and heavy end of the market with a 2,500-3,000+shp range.

‘What we believe we are bringing to the market is 25% [higher] power-to-weight ratio – or power-to-volume dependent on the application,’ said Florent Chauvancy, VP of heavy helicopter engine programmes at Safran.

The manufacturer of the RTM322 and Makila engines has drawn on its experience with existing models in the development of this high-power engine portfolio, as well as utilising experience from the Tech 3000 demonstrator.

‘In terms of fuel consumption compared with what we have in our existing portfolio, dependent on the application, it is going to bring 15% lower operating costs either through better fuel consumption or even through the design features that we have implemented,’ Chauvancy noted.

The new technical features of the engine family include a high-pressure turbine, inlet guide vanes with 3D-printed parts, a dual-channel FADEC, a four-stage compressor and compatibility due to its hybridised architecture.

‘This engine is going to increase mission capability for a higher payload. It will bring more power as well as better performance in hot and high conditions in demanding environments,’ he said.

‘We believe we are going to bring to the market an engine with fewer scheduled maintenance tasks.’

The first model of the engine family, Aneto-1K, will be applied to the Leonardo Helicopters AW189K (see p6). The aircraft’s entry into service is scheduled for Q4 2018. Other members of the engine family are expected to be in service by the 2020s. According to Safran, the variants will be meeting separate market requirements.

The first flight of the AW189K with the Aneto 1K engine took place in March 2017, and so far the flight programme has exceeded more than 20 hours.

‘We performed the first flight in March this year and we have an existing dedicated prototype that has been modified with the integration of the new engine,’ Claudio Nittoli, AW189 programme manager, told Helitech International Daily News on 19 September. ‘Up to now we have performed about 25 flight hours across 35 flights. All of them have been successful. We will proceed in the next month with our test campaign in order to validate [performance in] hot and high and low temperatures/conditions.’

Specifics on the other members of the engine family were not available at the time of going to press and will be dependent on OEM requirements.

By Helen Haxell
Vector Aerospace Helicopter Services is a global provider of aviation maintenance, repair and overhaul (MRO). With Major OEM licenses from Airbus Helicopters, Pratt & Whitney Canada, Rolls-Royce, Safran and Sikorsky, Vector offers a range of MRO support services for engines, fuel accessories, dynamic components, airframes and avionics.

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Waypoint demonstrates confidence in H225

**STAND F80**

A Waypoint leasing Airbus H225 is present at Helitech International, being operated on lease by Global Helicopter Service (GHS) of Germany.

GHS leased the aircraft (pictured) in January 2017 with the intention of deploying it for utility and humanitarian support missions.

‘We are excited to display the H225 at Helitech International in close cooperation with Airbus Helicopters and GHS,’ said Allan Rowe, managing director and head of commercial at Waypoint.

‘This static display highlights the significant capability of the H225 in multiple missions around the world, and the opportunity for this aircraft to displace older, less-capable aircraft in the market. Waypoint and GHS have invested in the future of the H225, and we are appreciative of the strong support that we have received from Airbus Helicopters,’ he added.

The appearance of the H225 at the event indicates that lessors and OEMs are once again ready to promote the aircraft following the April 2016 crash.

‘Waypoint’s H225 lease to GHS demonstrates the improving market confidence in the H225 in multiple mission segments,’ said Con Barber, director of sales and relationship management at the lessor.

‘Waypoint’s recent lease with GHS has given Airbus Helicopters, Waypoint and GHS the opportunity to jointly present the H225 at Helitech International.’

The company has also announced that its fleet now comprises over 150 helicopters. Waypoint’s portfolio includes 32 customers in 30 countries, with total assets worth in excess of $1.6 billion.

In addition, it has firm and option orders with aircraft manufacturers for more than 90 rotorcraft – valued at more than $1.2 billion in total – to be delivered over the next five years.

‘Thus far, 2017 has proven to be a very active year for Waypoint as the helicopter market begins to recover from a multi-year downturn,’ said Ed Washecka, the lessor’s CEO. ‘Our team has executed eight new delivery placements with a further three in closing, two sale-leaseback transactions, and over 20 remarketing placements – an impressive achievement by all measures.

‘The growth of our business has been further bolstered by our success in the debt markets, with the recent closing of a large term-loan facility over the summer. This is all indicative of the hard work of our team, and loyalty of our customers, lenders and other industry stakeholders,’ he added.

Over the past 12 months, the company has established a new leasing platform in Tianjin, China, and will soon be active in Hong Kong. Waypoint has placed two aircraft with a customer in China, notably delivering an H135 to Shanghai Skyway General Aviation Company to be used for EMS.

Recently, the EMS market in China has taken an upward turn following changing airspace regulations, which has been good news for leasing companies.

By Beth Maundrill

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**First Enstrom 280FX aircraft en route to Pakistan**

**STAND B20**

Enstrom Helicopter has announced the first sale of an undisclosed number of 280FX aircraft to a customer in Pakistan.

Deliveries of the piston-powered rotorcraft will start at the end of 2017 and will be completed in early 2018.

The sale was managed by Enstrom’s representative in Islamabad, Global Services and Solutions, which provides aviation and other support services to customers in Pakistan.

‘This has been a great team effort, and we look forward to delivering the 280FX helicopters and more importantly, to developing a good and long-term relationship with our customer,’ said Orlando Alaniz, director of sales and marketing at Enstrom.

The 280FX is the result of an initiative to redesign the company’s F28 helicopter. The 280FX has engine air intakes at the top of the cabin and endplates on the horizontal stabiliser.

The rotorcraft is powered by a Textron Lycoming HIO-360-F1AD engine, and has a two-to-three-person cabin.

“We feel the Enstrom 280FX is the best helicopter to operate in the difficult climate conditions of Pakistan. We are looking forward to many continuing sales,” said Abdul Khaliq Awan, general manager of Global Services and Solutions.

By Beth Maundrill
Good vibrations

**STAND H25**

ITT Enidine is showcasing its full portfolio of vibration control solutions for rotorcraft at Helitech International.

The company is currently focusing on the qualification and certification of its vibration system on both the Bell Helicopter 505 Jet Ranger X and 525 Relentless.

‘Bell is currently doing its certification on the aircraft. The qualification for endurance is done on the 505, and qualification is ongoing on the 525,’ Dave Snowberger, business development manager at ITT, told Helitech International Daily News.

“We supply our vibration control solutions to all the major OEMs, including Leonardo, Airbus and Marenco,” he added.

According to ITT Enidine, its systems are central to increasing the longevity of flight-critical rotorcraft components, protecting cabin interiors from noise and vibration, and improving the safety and comfort of passengers and crews.

The company’s vibration absorption technology was selected for the Jet Ranger X in 2016. The Live Unit, the technology was selected for the Jet passengers and crews.

“ITT Enidine’s multi-modulus journal and spherical bearings.

The company has also incorporated its technologies on the 525, which made its maiden flight in 2015 with Enidine solutions on board.

ITT has served the global aviation industry for more than 30 years, providing customised solutions that decrease noise, maintenance and installation time as well as increasing fuel efficiency and critical component lifespan.

In 2016, the company generated revenues of $2.4 billion, with sales in approximately 125 countries.

ITT Enidine is also showcasing its de-icing technology for rotor blades at Helitech International.

*By Beth Maundrill*

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**STAND J71**

Flight Light, a manufacturer of helipad lighting solutions, is tackling the challenge of providing systems that are capable of withstanding the corrosive effect of salt water.

Using stainless steel to reduce the impact of corrosion on offshore helipads, Flight Light has designed a ‘plug-and-play’ lighting solution.

‘They’re heavy so you don’t have to install them. You just throw the cables out and you are ready,’ Isabel Martin, the company’s president, told Helitech International Daily News.

Intended for use on portable and temporary helipads or those still under construction, the lights can be powered by a generator.

Another increasingly popular product, according to Martin, is Flight Light’s range of solar-powered lights, used for temporary installations.

The systems offer flexibility, although their brightness is limited compared to LEDs or incandescent lights.

*By Alice Budge*

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**STAND J75**

ACES Systems is displaying its latest-generation vibration analysis and rotor-balancing tools at Helitech International.

The Cobra II (pictured) and Viper II, released in 2016 and 2015 respectively, provide customers with a more user-friendly system with an improved, full-colour, 7in display, which is LED backlit and can be viewed in direct sunlight.

The Cobra II two-channel analyser provides engine vibration analysis for rotor track and balance as well as propeller balance for fixed-wing aircraft.

The Viper II combines the capabilities of the Cobra II with a four-channel analyser capable of performing on large commercial jets.

‘In Europe, we have sold a couple of hundred of the new Cobra II systems,’ Patrick Vanhamel, director at Aces Systems, told Helitech International Daily News.

The main concentration of sales is in the UK for the helicopter market, where you have a lot of offshore oil and gas operations.’

The company provides training and support for its solutions and is also embarking on providing annual collaboration of its units, according to Vanhamel.

*By Beth Maundrill*

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**STAND L23**

At Helitech International, Technobis is displaying its small, lightweight, fibre-optic maintenance and health monitoring devices, which can be installed on helicopter rotor blades.

The systems are designed to offer ease of installation and measure the force and deflection on the blades during operation, Rolf Evenblij, project manager at the company, explained to Helitech International Daily News.

‘[Technobis] makes these systems very small using integrated photonics,’ he said. ‘I think we are leading the way. You have similar systems which are very big and are unlikely to fly because it is hard to qualify them.’

*By Alice Budge*
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Leonardo reveals new helicopter variant

Leonardo Helicopters has detailed its latest iteration of the AW189 twin-engine helicopter, the AW189K, equipped with two new Aneto-1K engines, which Safran Helicopter Engines unveiled at Helitech International (see p3).

The AW189K (pictured) is the first aircraft to use the Aneto-1K, which will make the aircraft more attractive for customers operating in hot and high environments.

Speaking to Helitech International Daily News, Roberto Garavaglia, senior VP of strategy at Leonardo, said that the company has not yet received an order for the AW189K, but began marketing the aircraft at yesterday’s reveal of the platform.

The final price of the AW189K is yet to be determined, but Garavaglia confirmed that the new model is not a replacement for the current AW189, which is equipped with two General Electric CT7-2E1 engines.

‘There are plenty of market opportunities for both,’ he said.

He added that while Leonardo will focus on the civil market for now, there could be future opportunities for military use of the aircraft with the new engine. ‘The AW189K completes the footprint of the 189 and its military variant,’ he stated.

The company expects to complete EASA certification of the AW189K in Q4 2018. Notably, the engine is ITAR-free.

Garavaglia said that while there are no firm plans to equip the AW139 or AW169 with new engine technology, the company continues to work with engine manufacturers and closely monitor the market.

In addition, the helicopter OEM is displaying its latest-generation AW169 platform configured for HEMS operations at Helitech International. This is the first example of the aircraft to be received by the Essex and Herts Air Ambulance service.

According to Leonardo, the type has gained success in the European EMS market, including in Italy, Scandinavia and the UK.

The company recently received an order for two of the rotocraft from the Norwegian Police for law enforcement operations. The AW169 is already operating in the North Sea in support of wind farms, with additional aircraft due to be delivered in 2018.

Furthermore, Leonardo revealed that it has set up a dedicated training solution for crew that operate EMS helicopters.

At the show, the company also gave an update on the progress of its developing AW609 tiltrotor programme, which it expects to achieve certification at the end of 2018. The platform’s engine, the Pratt & Whitney Canada PT6C-67A, has achieved Transport Canada certification. Leonardo said that the fourth AW609 will be completed by the end of this year, and fly by the end of 2018. The fifth example is likely to be the first production aircraft.

At Helitech International, the company is also promoting its AW139 helicopter, almost 1,000 of which have been sold to date.

By Beth Maundrill

Airbus sees oil and gas future for H225

Despite some industry doubt over the H225’s future in oil and gas, Airbus Helicopters remains adamant that the aircraft is still a strong force in this sector, among others.

Bristow Group president and CEO Jonathan Baliff told Helitech International Daily News that the group currently has 27 idle H225s on its books. ‘The 225 still has some life left in it from the standpoint that the aircraft is fairly young, but it might not be in oil transport,’ he commented.

When asked by Helitech International Daily News if the OEM still sees a future for the aircraft within this market segment, Régis Magnac, VP and head of customer operations at Airbus, explained that there is an overhang in oil and gas in relation to heavy helicopters, and some platforms might need to find roles elsewhere.

However, he thinks that the versatility of the H225 means that it can be flexible in its market position.

‘There is an over-capacity of heavies in the oil and gas market. There is a need for this over-supply to find its place somewhere else. The 225 has a difference compared with its competitors – it has a great advantage of being more versatile. It is flying offshore at the moment in Asia. We are there to support our customers’ needs – it is not on us to tell them where to operate.’

By Helen Haxell

Helicopter industry warned of regulatory challenges

Environmental issues, autonomous vehicles and the erosion of regulatory authority are just a few of the core issues facing the commercial helicopter industry today.

Speaking at the ‘Aviation Under Attack’ technical session at Helitech International, Matt Zuccaro, president and CEO of the Helicopter Association International (HAI) discussed some of the central challenges facing helicopter operators across the world.

Concerns over noise and the environment are still prevalent – as demand for private helicopter services increases, so do the number of complaints about noise and emissions.

Zuccaro said that such issues are controlling the industry, ‘affecting how and if we can operate’.

Noise complaints are ‘resulting in restricted routing and altitude’, reducing the airspace available to aircraft operators, he explained.

While measures to restrict operations represent a threat to rotorcraft providers, Zuccaro is more optimistic that potential new business opportunities will be offered by UAS.

‘The future is autonomous,’ he said.

HAI has undertaken measures to ensure that the helicopter industry maintains pace with the changes in unmanned systems are bringing, including the creation of an HAI UAS-operator category and a new UAS committee.

However, the proliferation of UAS creates challenges such as regulatory changes, which Zuccaro believes could further threaten operators’ access to airspace.

He explained that UAS are currently regulated at state level in the US, despite their categorisation as aircraft.

This could establish a precedent that may be applied to helicopters, making it increasingly difficult to operate across state boundaries.

Zuccaro raised concerns that an ‘arbitrary’ altitude level could be set, above which would be regulated by the FAA and below at state level, making way for third-party control of airspace.

‘The FAA doesn’t deny that third parties might have authority over certain airspace, and that these third parties have a place at the table,’ he concluded.

By Alice Budge
Flurry of developments for Heli-One

Heli-One Norway is opening a new blade repair and overhaul shop at its facility in Stavanger, and has announced the development of a new Doppler solution for an Airbus Helicopters platform.

The company’s current facility has an average turnaround time on AS332/H225 blades of two to three weeks, with more than 100 blades processed in the last four years.

The 325m² overhaul shop is due to be fully operational by the end of October, servicing blades for the Airbus AS332, H225, AS350/355 and Sikorsky S-92.

The expanded space allows for additional specialised environments, including a preparation room for inspections, a dedicated booth for blade painting and a clean room for all dust-free operations, which will also be humidity-controlled to allow for year-round work.

In a statement, Eddie Lane, president at Heli-One, explained that the addition of the new space places emphasis on safety and the need for fast turnaround times on inspection and repair work for customers.

“We are excited to introduce this new capability at the shop and to operators in the UK and Norway... Adding this platform is a great accomplishment for our team,” he said.

Furthermore, Heli-One is adding AS350 blades to the shop’s capabilities, to provide operators of the platform in the UK and Norway with an additional blade repair option in a fully certified, OEM-approved facility.

By exploiting knowledge gained from serving other Airbus platforms and the use of the latest MRO technology in the new shop, ‘the addition of the AS350 platform is a natural one, as the repair process will leverage existing tooling and resources already in place’, according to the company.

The Doppler replacement solution for the AS332L/L1 will increase accuracy in auto hover situations.

Heli-One highlighted that the system was developed in response to a number of issues with the current system – the most crucial being its instability over homogenous surfaces such as calm sea states, and the failure to provide consistent radar returns.

‘Our design team has come up with a solution that is designed to address a variety of challenges that our customers are facing – safety, operational benefit, obsolescence and costs’ explained Lane. ‘This solution will help give operators greater reliability to perform their mission with enhanced safety and situational awareness.’

The new system, comprising an AHRS and an ARINC 429 converter, will feed the flight director and coupler, and hover meter, with both lateral and longitudinal ground speed.

The AHRS will be augmented with GPS data from the aircraft’s flight management system.

The new system is designed to meet the challenge of reducing maintenance costs and avionics system weight.

By Alice Budge
Crucial collaboration

HeliOffshore’s CEO Gretchen Haskins spoke to Beth Maundrill about the industry’s unwavering commitment to safety for companies working offshore, despite the difficult economic environment experienced by the oil and gas market.

STAND L30

The global safety association HeliOffshore has more than 100 members from around the world working on an aligned strategy to enhance safety. Its mission is to boost safety through collaborative efforts with operators, manufacturers and service providers.

The organisation has a set of clear safety priorities for it to work together with offshore stakeholders to deliver tangible benefits, focusing on those actions that have more potential to save lives.

Safety strategy

The association has previously said that it finds that more operators are now willing to share and jointly analyse output from helicopter flight data monitoring systems with the assistance of HeliOffshore. ‘In this regard, the key areas of our work focus on those that we define as system reliability and resilience, and operational effectiveness, as well as enablers like safety management and safety data sharing that support these more operational outcomes,’ explained Haskins.

‘We have created a space where competing companies can put their commercial rivalry to one side to take a strategic approach to enhancing safety,’ she added.

HeliOffshore is set on developing and implementing technology such as enhanced obstacle warning systems that give pilots up to an additional 30s warning of a collision through the enhanced Helicopter Terrain Awareness System (HTAWS).

HTAWS equipment is developed by a combination of helicopter manufacturers and avionics companies. There are various systems for a diverse range of aircraft currently on the market.

HeliOffshore’s role has been to help define the benefits of HTAWS and how they should work, and it is active in encouraging and supporting industry in implementing these systems.

The association is also working with industry towards a number of other safety goals: to mature and apply pilot eye-tracking research with the aim of ensuring automation in flight is used safely; and to enable collaboration between operators and OEMs for the development of flight crew operations manuals, to name just two.

Fair share

‘Among the technologies with the greatest potential to overcome safety challenges is the increased use of big data,’ Haskins added. ‘HeliOffshore is working with partners to gain a clearer and more complete picture of day-to-day operations that can warn operators much earlier about factors that have the potential to cause accidents.’

With big data in mind, the company is working with GE Digital to utilise its Predix platform. The partnership was announced in March 2017, and will provide HeliOffshore with the tools to analyse helicopter operations.

Predix is an industrial Internet of Things platform specifically designed to meet the challenges of analysing industrial data. The tool was originally designed for GE’s own business, which spans ten industries from aviation to utilities.

Additionally, HeliOffshore has its own Info Share platform through which helicopter operators are able to share summary incident reports. Members are also using the tool to share flight data monitoring analysis and HUMS information.

Furthermore, HeliOffshore is looking to assist with the wider implementation of best practice for the latest HUMS. ‘There is also a lot of promise in improved technology for avoiding obstacles, managing flight paths, helping pilots to avoid hazardous weather, and generally have greater visibility and understanding of difficult conditions,’ Haskins explained.

‘Competing companies can put commercial rivalry to one side to take a strategic approach to enhancing safety.’

Finally, the company is collaborating with regulators and the Flight Safety Foundation, who are working to mitigate the risk that UAS pose to helicopter operations, although Haskins noted that these conflicts are of greater concern to onshore applications.

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Although the recent crisis in the oil and gas sector continues to have a substantial impact on the market, industry figures see some room for optimism, along with potential growth in a number of new or developing sectors. By Gerrard Cowan

It has been suggested that the market is undergoing a slow but necessary recovery following the collapse in oil prices in 2014. Indeed, some leasing companies are looking to capitalise, albeit cautiously, on the upturn in operator expenditure.

According to Crispin Maunder, executive chairman of LCI Aviation, there has been a good deal of activity in the North Sea over the past year or so, and super-medium helicopters like the Leonardo AW189 and Airbus H175 have grown increasingly prevalent. ‘There’s a building demand for those platforms,’ he said. ‘There’s a certain amount of activity again in the North Sea, and a positive trend in Europe as a whole.’

However, he cautioned that Europe – much like the global market – is still suffering from the dramatic reduction in oil prices. The increase in activity has therefore been related to the replacement of older platforms, which is not affecting the volume of active aircraft.

Super mediums are becoming the popular choice for supplanting legacy aircraft. ‘The oil industry is beginning to look very closely at the super mediums, and is realising the efficiency they can have compared to the heavies, particularly as quite often the companies are not flying a full load of passengers on the larger platforms,’ Maunder said. ‘So, there is a growing demand in the industry for the operators to optimise the size of the helicopters.’

Waypoint Leasing is seeing a slight increase in activity in the North Sea, said Clark McGinn, senior VP for sales and relationship management at the lessor. ‘In the oil and gas sector there, the cost pressures are very acute, but it seems to have reached a point where oil companies are interested in investing again,’ he said. ‘So, there’s a bit of activity there.’

Cost cutting

The offshore sector globally has shown both negative and positive trends over the past year or so, said McGinn. Oil companies aggressively cut their spending, creating an environment where the major operators must work at very fine margins to turn a profit and minimise costs.

However, there has been more oil and gas activity over the past few months than previously, he said, with Waypoint making bids for a range of new contracts, mainly in production but even some in exploration and development. With oil prices hovering around $45-55 per barrel, it appears that oil and gas companies ‘believe they have the right cost structure to do some more business’, he said.

These points were echoed by Mike Platt, CEO of LCI Aviation, who confirmed that Q3 2017 had seen far more activity than...
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was the case in the early part of the year or the end of 2016. ‘We have many proposals around the world for oil and gas projects that we’ve given to operators, and we’re waiting for the oil companies to actually award the tenders,’ he told Helitech International Daily News. ‘We are just seeing so much more activity than we saw even six months ago.’

Platt identified two major driving factors. First, while oil prices are far below their pre-crash highs, they have stabilised somewhat. ‘You’re not seeing wild swings,’ he said. ‘Stability allows people to plan. You don’t have to worry that you’ll start a project and then the oil price will drop to $20 a barrel.’

Secondly, due to oil companies cutting costs, the break-even cost of producing a barrel has dropped significantly, perhaps even by 50% in some cases. ‘They have been able to significantly reduce the cost of extracting oil,’ he said, and added that this was through a mix of technical advances and a reduced headcount.

However, while oil companies appear to be growing more willing to bring large projects online, they are not pursuing the more marginal or riskier work that may have been attractive in previous years. ‘It’s not like it was six or seven years ago, where if they smelled oil they went after it,’ Platt explained. ‘That’s not the case. It’s stuff that they know are big finds. Big projects – there are fewer than there were before, but there are enough of them now for us to see increased activity.’

Geographical advantage
The level of activity naturally depends on the area of the world in question. Platt highlighted the Asia-Pacific region as having seen particular growth in tenders in the oil and gas market, notably in Australia, as well as Myanmar and other parts of Southeast Asia. ‘It’s not growing as rapidly in Europe and in the Gulf of Mexico,’ he added.

Wolf said that there has been an overall incremental growth in capacity among oil companies. ‘Even in this oil price environment, they have long-term projects that they have started which are coming online,’ he said. ‘The majority of the money was spent a long time ago, so they’re going to complete them,’ he said. He also pointed to Southeast Asia, Australia and West Africa, and said there is potential in the offshore market in the Gulf of Mexico, though this would be realised by the Mexican government rather than its US counterpart.

In Europe, the major boost for Waypoint in recent years has been in utility operations, McGinn said – areas like firefighting and the lifting of heavy materials, for example. ‘We think there’s a real opportunity for people to upgrade their fleet, which is quite old, and move into more effective, more efficient and more modern firefighting and lifting capabilities across Europe,’ he said.

Maunder pointed to the European EMS market, saying that there ‘is certainly a major re-equipping cycle in the EMS market at the moment’, in which LCI has been very active. ‘We have also been very active in SAR,’ he confirmed. The company recently placed a Leonardo AW139 with the Spanish Coastguard.

There are a lot of SAR projects developing, Maunder said, pointing to the progress of the UK SAR contract with Bristow. ‘Then there are various other national SAR projects going on in Europe as a whole, which are looking more at replacing older equipment than acquiring new equipment,’ he said.

Wolf highlighted a range of other markets beyond oil and gas where Lobo is active in Europe, including general SAR. He drew particular attention to the offshore wind farm sector, which he described as one of the most interesting growth areas for the helicopter sector on the continent, despite being nowhere near as big as oil and gas.

He told Helitech International Daily News that the segment is getting a lot of traction and is steadily growing. He explained that a number of offshore windfarm developers are seeing cost benefits from flying a helicopter to a turbine for maintenance or monitoring.

‘There are also a lot of projects being proposed further offshore,’ he said, ‘so we really like the wind farm space.’

Wind farms are going to be a big growth area in Europe looking forward, said McGinn, adding that Waypoint is working to close its first deal in the sector at the moment. There is a growing trend towards light, twin-engine aircraft in this domain, he said, with Waypoint currently operating six in the North Sea. ‘That could easily treble within the next couple of years,’ he added.

Face to face
Waypoint will be announcing a number of deals – in different countries and mission categories – at this year’s Helitech International, McGinn confirmed. He also pointed to the less tangible benefits of the show: ‘There’s a great cross-section of our industry at the show, from manufacturers to operators to lessors to suppliers to oil companies, so for me it’s just a barometer of how noisy, how buzzy, the market is.

‘Is this going to be the year where the industry sees a turn in the market? Are they going to be considering more investment and new deals?’ he continued.

Shows like Helitech International are always useful, said Wolf, but this is especially true in today’s market. ‘Nothing beats getting in front of your customers,’ he said. ‘It is absolutely critical to get in front of your clients and to share views, have discussions, and start new conversations. We always say that deals don’t get done at Helitech [International], but a lot of deals get started there.’

Waypoint has been supporting helicopter operators globally since 2013. (Photo: Waypoint Leasing)
Safran is the world's leading manufacturer of helicopter engines. It offers the widest range and supports 2,500 operators in 155 countries with one constant aim: to stay focused on their missions and to keep their helicopters flying every day, everywhere.

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Super-medium helicopters have been establishing their presence since 2014, first marked by the arrival of the AW189 and H175. Three years on, the class has become a staple in the fleets of SAR providers across the world. **By Alice Budge**

Weighing 7-9t and capable of carrying 16-20 passengers, super-medium aircraft have quickly filled an apparent gap in the market, offering SAR providers extended range and increased passenger capacity over medium-class types, while reducing operator reliance and operating costs compared to the heavy class.

**An appealing option**

Babcock Mission Critical Services (MCS) currently operates a number of super-medium platforms as part of its SAR fleet, which carries out thousands of flights across Australia, Italy, Spain, and the UK every year.

In a statement to Helitech International Daily News, José Manuel Gutiérrez, head of EMS/SAR at the company, explained the attraction of the class for SAR service providers.

‘The super-medium fleet offers the right combination of power, performance and safety with seating for more than 12 survivors,’ he said. ‘[The platforms have] a full icing protection system, four-axis autopilot plus flight director with SAR modes, and advanced SAR radar and equipment.’

In particular, Gutiérrez emphasised the importance of SAR aircraft being capable of ‘flying in all weather conditions, both at day and at night’. The super mediums that emerged on the market in 2014 host some of the latest technology to enable such flying.

Talking to Helitech International Daily News, Mick Fry, director of international sales of SAR/EMS at CHC, expressed the belief that the demand for certain helicopter platforms is primarily pushed by operators looking at aircraft fit, how it is put together and its cameras and mission equipment.

He added that in established markets, ‘advanced data links and communication capabilities will become an increasingly important consideration’. Fry also identified an upward trend in the demand for hybrid service provision, something that is being met by super-medium platforms as they offer the necessary additional payload capacity that traditional medium-class aircraft cannot provide.

‘Traditionally, customers are looking through the lens of wanting either a SAR or EMS aircraft. However, OEMs are starting to fit hybrid models, which are SAR or EMS blended with law enforcement. Secondary roles are creeping into services already provided.’

As the provision of rescue and recovery services increases, Fry believes this hybrid capability will materialise, and will look something like an SAR platform with a secondary EMS role covering coastal and onshore missions.

CHC currently provides on-shore operations in Ireland and Australia. Fry expects this service to become more sought after, as ‘government budgets remain under pressure and customers are looking for more bang for their buck. Therefore, these operations are becoming increasingly attractive.’

The configuration flexibility offered by super-medium aircraft allows for the incorporation of secondary capabilities onto a predominantly SAR platform, thus driving increased interest in the class in established markets.

In a demonstration of the company’s continued investment in the class, CHC recently launched a super-medium aircraft programme which included a commitment to lease five new aircraft from GECAS’s Milestone Aviation Group.

In a company statement on the agreement, in which three
AW189s and two H175s will be added to CHC’s existing fleet, the new platforms are described as ‘designed to meet long-range, high-endurance requirements in demanding environments, which will allow CHC to use them for missions that have been traditionally limited to heavy aircraft’.

**Solid performance**
Fry explained that demand for SAR platforms in developing markets continues to be driven heavily by price points and budget constraints, with technology remaining very much a secondary consideration.

However, ‘in established markets, private SAR providers are looking primarily for modern technology and range as operators want to go further and further offshore’.

‘As super-mids in the market today are filling a blank space, customers are looking for super-mids that meet 90% of target range with an emphasis on performance, as some are also looking for improved hot and high flying abilities,’ Fry added.

With operations covering the Spanish and Italian coast, the super-medium aircraft in Babcock MCS’s SAR fleet have had to respond to a ‘huge variety of tasking, from drifting ships, medical evacuations or distress calls from oil platforms’.

According to Gutiérrez, other missions relating to illegal immigration involve dealing with ‘dangerously overloaded boats arriving at the Spanish and Italian coasts’, and mean that ‘an ability to carry multiple survivors on board is increasingly important’.

While Babcock MCS operates the Leonardo AW139 for its SAR operations in the UK, Spain and Italy, Gutiérrez identified the Airbus H175 as ‘an alternative option to the current super-medium helicopters in Babcock MCS’s fleet’. The H175 offers increased passenger capacity with space for 16-18 individuals, as opposed to 15 in the AW139.

In early September, CHC welcomed three new H175 aircraft to its fleet, although Fry also noted that the AW189 is currently proving popular across a range of applications.

The Bell 525 Relentless will be the latest super-medium to emerge on the market. Following a number of setbacks on its path to certification, the aircraft is expected to be operational in 2018. Since it can carry up to 18 passengers and is designed to provide configuration flexibility, the platform is likely to be met with interest from SAR providers.

Fry and Gutiérrez both confirmed that super-medium platforms have come to play a significant role within their respective fleets and in SAR operations. However, they also drew attention to the Sikorsky S-92 as a medium-class platform that has performed well and should not be ruled out as an important part of any SAR fleet.
Information age

In an era of unprecedented data generation, successful helicopter missions rely on the transmission of information in a timely and effective manner, and this is no easy task. By Beth Stevenson

Maintaining a robust communications link between any aircraft and the various entities to which it needs to pass information is frequently challenging, and this is especially true of helicopters. Turbulence caused by rotor wash can interfere with the link used to transfer voice and data, and vibrations apparent during all phases of flight mean that the equipment used need to be rugged enough to deal with the added stress.

Beyond-line-of-sight communication is the optimal way of ensuring that information is transferred effectively, but this is not always easy, largely due to the natural interference of the rotors and the weight of the systems required to communicate with satellites.

Efficiency measures

Honeywell leveraged its fixed-wing SATCOM systems for helicopter use in 2015. The solution uses Inmarsat’s constellation and incorporates technology to counter the effects of rotor wash. The single-channel Aspire 200 and two-channel HSD-400 had previously been used by fixed-wing aircraft but were reconfigured for the helicopter market, and the product achieved its first STC with Leonardo Helicopters’ AW139.

‘Spinning metal rotor blades between the antenna and the satellite cause a natural blockage and interference, [and] the equipment itself on larger platforms is bulkier. What we’ve been able to do is get that down to a much smaller and lighter weight at a scalable size for the helicopter,’ Tim Roberts, senior director of SATCOM at Honeywell, told Helitech International Daily News.

‘In addition to bringing it to a smaller form factor weight and size for the helicopter market, we’re also able to work around the installation aspects of it.’

Roberts noted that high levels of vibration mean that rugged systems are necessary for rotorcraft integration. Similarly, the variety of operations that helicopters carry out require resistance to dusty and moist environments, so ‘enduring, long-standing avionics are necessary to meet those missions’, he said.

‘Now that we’re actually communicating with a satellite, we’re able to provide that high-speed data network regardless of where [helicopters] are operating from, hundreds of miles away or even in the middle of the ocean,’ he added.

The system counts rotor wash through air correction, using a so-called interlever in the physical layer of the communications link between the system on the helicopter and the satellite, explained Mark Goodman, senior manager of marketing and product management at Honeywell.

‘What that does is take the information it is transmitting or receiving, mixes it up over a longer period, and then it automatically checks and corrects for missing information in real time to compensate for information that is lost or blocked by the rotors,’ he said.

If this technology was not present, the system would still work, but it would take longer for applications on either side to link and realise there was missing information.

‘But over a high-latency link like satellite communications, that would effectively drive your effective throughput to zero,’ Goodman added.

‘By correcting at the physical layer in real time, it has very little impact on the overall throughput of the link – 5-10% overhead on the link – and it allows us to achieve close to standard fixed-wing broadband rates without any impact to the applications or the user.’

Great aspirations

This is available in both the Aspire 200 and HSD-400. The former is smaller and more lightweight, and while it can go on larger rotorcraft, it can be scaled down to systems such as the Bell 429 and Airbus Helicopters AS350.

‘It gives scalability in what and how we install, solely with the intention of meeting or exceeding the customers’ mission requirements,’ Roberts said.

The HSD-400 is suited to larger aircraft, and can be configured with extra hardware to include additional channels.

However, the single- and dual-channel nature of the system is sufficient for many types of data transfer, and voice and data can be pushed through each channel at once.

‘In a helicopter, prior to our solution, that was very limited,’
Roberts said: ‘You had a very basic high latency voice connectivity. Imagine we’ve gone from Iridium capability of a 1.2kb/s, to several hundred kilobits. We can get between 300-800kb/s depending on the channels and how they are utilised, so it is a huge leap forward.

‘So now we’re finding the application we can put on top of that. Law enforcement operators are now able to provide real-time video from a FLIR camera or any type of sensor, and provide that down to the ground in real time, high definition and quality.’

The company is working on achieving STCs for a number of other rotorcraft types with both the FAA and EASA, including for the Airbus AS332, Sikorsky UH-60 and S-92, and Bell 429, all of which Honeywell hopes to receive by the end of 2018.

‘The customer interest on all of those platforms has been significant and we’re trying to get these certifications completed as soon as possible – it’s a very high priority throughout our business,’ Roberts said.

He added that there have also been requests from other nations outside of Europe and the US, and other potential markets include Australia, Brazil, Canada, Japan and New Zealand.

‘There might be different requirements and we’re willing to work with those customers in those different regions to ensure that if the FAA or EASA don’t meet the bill that we can work to assist to get the certifications necessary,’ he said.

Other developments include rolling out different variants of the Aspire family of systems, as well as reducing the size of them.

‘The biggest challenge with installing these systems on helicopters is finding the real estate to put the antenna,’ Goodman said.

‘We recognise that as we get smaller in platform there is less real estate, so we’re working on some ideas to shrink the antennas down to make them fit on [not just] the bigger dual-engine helo platforms that we’re working on now, [but] pushing it down to the single-engined smaller and lighter helos.’

For an expanded version of this feature, please see RotorHub Jun/Jul 2017.

“High levels of vibration mean that rugged systems are necessary for rotorcraft integration.”
Opportunities are widening for night vision OEMs, but these developments go hand in hand with declining business in cockpit modifications. By Rob Coppinger

Turning away from the dark side

In the last year, the night vision market has developed, with a wider use of the technology by civilian helicopters expanding the goggle and helmet-mounted display sector. At the same time, the latest cockpit instrument installations are reducing demand for compatible lighting modifications.

The potential for greater civilian use of night vision is appearing in some surprising areas. ‘We’re getting into some things now that years ago you wondered if they would ever be applicable to NVG,’ Richard Borkowski, REB Technologies’ (REBTech) president and CEO, told Helitech International Daily News.

The Texas-based company installs NVG-compatible equipment, modifying civil and military helicopters. ‘Aerial fire-fighting, crop spraying and anti-poaching are three markets that are emerging where they have a tremendous interest in night vision,’ he added.

Last year, REBTech modified its first fire-fighting Kamov Ka-32, certified by the Korean Office of Civil Aviation. Borkowski explained how pilots use goggles and a FLIR system to see the fire’s hot-spots and help the fire-fighters on the ground make better use of their water or fire-retardant spray. ‘They can direct their ground guys away from harm,’ he added.

The company has also modified a helicopter for spraying pesticides at night to fight mosquitos. ‘The reason they do that at night is because the winds in the evening are usually less and they can get a more precise drop,’ Borkowski commented.

New markets

The anti-poaching market has emerged in Africa. REBTech carried out work for a wildlife reserve in Kenya to help combat rhino and elephant poaching. ‘The poachers come in at night in a [Robinson] R44 with goggles and a rifle in the aircraft, down the animal, jump out, cut off its face and jump back in,’ said Borkowski.

The company modified one helicopter for the Lewa Wildlife Conservancy and, after the new night patrol capable rotorcraft got a lot of local media attention, claimed Borkowski, the poaching stopped. His theory as to why it stopped is ‘because we did articles in the local newspapers and got the word out and the poachers said: “Why the hell go to this guy? He’s flying at night with goggles.”’

Another first for REBTech took place at the beginning of the year, when it attained its first EASA STC for the Robinson R44. ‘Other than that, we have 28 [FAA] STCs, but [we had] never had an EASA one,’ said Borkowski, who sees Europe as a big growth area for the firm.

‘The European market is very, very much our main target right now. [It] is target rich for us and we’re spending a good portion of our energy trying. I think we’ve broken in; we’ve done several contracts, but we need a heavier presence. [Europe] is where we’re moving.’

Aviation Specialities Unlimited (ASU) also views European helicopter NVG work as a growth sector. ‘We’re establishing a large footprint in Europe,’ said Kim Harris, senior business development manager. ‘We’re establishing a large footprint in Europe,’ said Kim Harris, senior business development manager. ‘We’ve

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This night vision-compatible cockpit is installed on a modified Bell 412EPI. (Photo: Aero Dynamix)
done a number of different STC aircraft within the EASA system in Europe and been very successful, and there are more projects on the horizon. Our partnership with Heli Air is maturing; they’re doing more and more cockpits of their own and modifying the aircraft.’

ASU is also offering equipment, launched last year, aimed at the civilian commercial market. The Aeronox NVG mounts for the helmet and the battery pack itself have more expensive, durable designs, but there is a cost saving in the long run, Harris explained. The previously cheaper, less durable mount and battery pack used to be discarded, and governments would pay for replacements because ‘money wasn’t such an object’, but civil operators have different priorities. ‘The real change is [that] the mount and battery pack are maintainable.’

The battery pack is smaller and more compact while maintaining the mount’s functionality. However, it has an ‘additional 2mm of vertical travel’, according to Harris. In addition, there is a detachable, retractable lanyard for the goggles. Harris described its predecessor as a ‘shoelace’, and added, ‘Last year, we made some big introductions with the Aeronox mount and battery pack. That’s the first new change to the hardware of the NVGs in 20 years.’

**Aiming for expansion**

Like ASU, REBtech also has a partner in Europe, but Borkowski declined to discuss its identity or location. However, he did outline the advantages to having a European partner: ‘Instead of [the customer] sending all the instruments, displays and radios here to Texas, now they just ship it to [our partner]. They have our NVG kit on the shelf, they’ll follow our EASA- and FAA-approved process to modify it and then it goes back to the customer; it helps in time and money and [limits] chances of shipments getting lost, which has happened.’

Another firm expanding its STCs to include more civilian helicopters for NVG modification is Aero Dynamix (ADI). In January, ADI, also based in Texas, announced that the FAA had issued an STC for the R44 Night Vision Compatible Lighting System.

‘As this platform has successfully grown and gained popularity in the marketplace over the years it’s been an opportunity that we have been looking forward to for some time,’ ADI’s chief operating officer, Tonka Hufford, said in his firm’s FAA STC approval announcement. ‘Our team is very proud of this modification and once again [has] provided the superior solution in both night and daytime instrument readability for our customers.’

The ADI R44 system consists of a combination of both internal avionics modifications, an aviation night vision system, white LED overlay and an instrument cluster. Also making progress with third-party models and in Europe is Israel’s Elbit Systems. In March, the company announced that it had a long-term deal with Leonardo Helicopters to jointly market and equip the Italian company’s commercial helicopters with the Heli-ClearVision suite for enhanced flight vision systems (EFVS). Elbit is working with the FAA to get the product certified next year and hopes to have approval for EFVS-enabled lower landing minima three years after that.

[Heli-ClearVision] is very similar to what we use in commercial airlines and commercial business aviation,’ Dror Yahav, VP of commercial aviation at Elbit Systems’ aerospace division, told Helitech International Daily News. Leonardo is the launch customer for the product. ‘It allows pilots who do not use or are not qualified for NVG or [who] can’t procure NVG for some reason… to do night operations based on the display device and EVS [enhanced vision system] sensor.’

As well as being installed in new helicopters, Heli-ClearVision can be retrofitted and is not exclusive to Leonardo models. ■

For an expanded version of this feature, please see RotorHub Jun/Jul 2017.
## CONFERENCE SCHEDULE

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<th>Time</th>
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### Photo: Tony Skinner
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### INSIGHT SEMINARS

#### Accidents / Incidents Responsibilities:
**Focus on UAVs – The Legal Approach**

*Paul Cornu Theatre, 10:30-11:15*

Organised by: European Helicopter Association (EHA)
Moderator: Jaime Arqué, Chairman, European Helicopter Association (EHA)

#### Utilizing GNSS from Concept to ConOps

*Paul Cornu Theatre, 11:15-12:00*

Organised by: European Helicopter Association (EHA)
Moderator: Jaime Arqué, Chairman, European Helicopter Association (EHA)

#### Search & Rescue: Evolving Operations

*Juan de la Cierva Theatre, 10:30-12:00*

Moderator: Jim Payton, Vice President Customer Business - Helicopters, Rolls-Royce Defense, Rolls-Royce Corporation

- 10:30-10:35 Welcome & Introduction
- 10:35-10:55 The Future for Commercial SAR
- 10:55-11:15 Evolution of Commercial Provision of a State SAR Service
- 11:15-11:40 Case Study: Rescue operations at Puerto General San Martin, Argentina
- 11:40-12:00 Panel discussion and audience Q&A

#### KEYNOTE

In Conversation with Sergey Ananov

*Paul Cornu Theatre, 12:30-13:30*

Moderator: Tony Skinner, Editor-in-Chief, Shephard Media

Keynote presenter: Sergey Ananov, Five Time World Record Holder and Director, Russian National Air Sport Control

#### INSIGHT SEMINARS

The Connected Helicopter

*Juan de la Cierva Theatre, 13:30-15:00*

Moderator: Jim Payton, Vice President Customer Business, Helicopters, Rolls-Royce Defense, Rolls-Royce Corporation

- 13:30-13:35 Welcome & Introduction
- 13:55-14:05 The Operator’s Perspective
- 14:05-14:15 Digital Engine Life: Opportunities for Data Collection and Connection
- 14:15-14:25 Why is Data So Important: Turn Digital Insights into Business Value
- 14:25-15:00 Panel discussion and audience Q&A

#### TECHNICAL SESSIONS

Getting Benefit Using Performance-Based Navigation

*Paul Cornu Theatre, 14:00-14:30*

Presenter: Laurent Delétraz, Senior Manager Business Development, Skyguide

An Open Architecture Approach to Cockpit Modernization: Where It Works & Where It Doesn’t

*Paul Cornu Theatre, 14:30-15:00*

Presenter: Grady Dees, Director, Technical Sales, Universal Avionics Systems Corporation

#### HELICOPTER EMERGENCY MEDICAL SERVICES: ONE SIZE FITS ALL?

*Paul Cornu Theatre, 15:30-17:00*

Facilitated by: Association of Air Ambulances

Moderator: Clive Dickin, National Director, Association of Air Ambulances

- 15:30-15:35 Welcome & Introduction
- 15:35-15:50 Patient Transfer Between Rotorcraft and Ground Vehicles – a European Standards Perspective
- 15:50-16:05 Introducing a New Helicopter Type to Today’s HEMS Theatre of Operations
- 16:05-16:20 Introducing a New EMS Interior in a New Helicopter
- 16:20-17:00 Panel discussion and audience Q&A

**LEARNING & SKILLS**

**Learning & Skills Zone, 09:30-15:00**

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