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TEAM YAKOVLEVS AT AERO INDIA



AEW&C IN FLIGHT

Two Flying Bulls aircraft scraped each other in mid-flight at the Aero India show in Bengaluru. Both planes landed safely and nobody was hurt. The wings of the planes were damaged. PAGE 14

2015: THE YEAR OF 'MADE IN INDIA'



LIGHT UTILITY HELICOPTER (LUH)

BY SP'S SPECIAL CORRESPONDENT

While the lead time in Prime Minister Narendra Modi's 'Make in India' campaign is likely to be substantial, the year 2015 is turning out to be potentially golden for what's already 'made in India'. A walk around Aero India this year is heartening at several levels. A slew of projects that have been in developmental gestation are ready for their big days off the ground.

You couldn't possibly have missed the mock-up of HAL's Light Utility Helicopter (LUH), that's critically needed for high altitude operations and a potential order of nearly 200 helicopters for the Indian Army and IAF. The good news for HAL and for 'Made in India' is that the first flight of the LUH is slated for August this year, and

fabrication of two more prototypes to follow. In a sign that the LUH is a crucial piece of equipment being built in-house, chat with any of the several Indian Army aviators who've been buzzing around the mock-up and receiving briefings on the helicopter. They are uniformly impressed, but insist that timelines need to be met for the goodwill factor to prevail. HAL knows that all too well.

HAL chairman T. Suvarna Raju said, "We are setting up Green Field facilities for manufacture of Light Utility Helicopter (LUH) and Naval Multi-role Helicopter (NMRH). The Government of Karnataka has allotted 610 acres land in Tumkuru District for this purpose. Actions have been initiated for obtaining required approvals/clearances. The development of LUH would be very crucial to our plans as defence market capitalisation is based on timelines of this programme. We need to strive

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Narendra Modi, Hon'ble Prime Minister of India



While we at SP's cherish our journey started in 1964, founded by our Founder Editor and Founder Publisher Shri S P Baranwal; we do believe that the entry into 51st year and beyond is just a beginning for us. We therefore look forward to constantly evolving and expanding our qualitative efforts during coming years and coming decades.

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HAL'S LIGHT COMBAT HELICOPTER

and achieve the operational clearance in line with the operational requirements of our defence services." In the nearer future, the Aeronautical Development Establishment (ADE) Rustom-2 medium altitude long endurance (MALE) unmanned air system is set to take off in mid-April. Honeywell is on the programme to help refine the aerodynamics as well as advise the ADE on flight testing. An effort is also on to give the Rustom-2 new diesel engines. The Rustom-2 is also getting tested out for its data-link, comm/navigation systems and sensors. Once flight test begins, things could speed towards operational clearance. Maritime and armed versions of the Rustom-2 could quickly take shape around the baseline platform that's all set to fly. Ground tests have been fruitful too.

A top ADE official at Aero India says, "The lead time taken to realise some of the technologies on the Rustom-2, including the sensors, communication and navigation system have been worth the effort. They are expected to perform very well in flight operations. The team is ready for final ground tests before clearing decks for first flight in the early-mid April period. We will then take the Rustom-2 platform to other locations, including Visakhapatnam and high altitude for other trials."

The third, of course is the indigenous EMB-145i airborne early warning and control aircraft platform. In the air for a few years now, the aircraft enters service this year with the Indian Air Force, and has elicited major interest in the region already. The platform includes the critical item – AESA (Active Electronic Scanning Antenna) Radar Antenna developed by DRDO and certified from ANAC, International FAR Certification Agency. "The induction will be a major milestone towards realizing the dream of an indigenous Airborne Early Warning and Control System, which will put India in a select club of countries," a senior DRDO official concerned with the project said. The Indian Air Force is expected to receive two aircraft this year and a third later.

Another big milestone this year is initial operational clearance for the Light Combat Helicopter. Speeding towards completing its test points, the LCH could see squadron service even as a limited series production avatar. HAL's chairman says, "Light Combat Helicopter (LCH) Technology Demonstrator TD-3 made its maiden flight on 12-Nov-2014. This helicopter has shown its capabilities to you during the air display and we are using our internal funds for building more prototypes in order to accelerate the certification process towards obtaining IOC." While the project initially envisaged two technology demonstrators, the HAL board had decided to also roll out two additional technology demonstrators at a cost of Rs 150 crore as a risk mitigation exercise in the interests of better planning, execution and monitoring of the project and enhancement in the overall number of flights required to achieve cold weather trials, hot weather trails and weapon firing trials. HAL hopes to achieve initial operational clearance (IOC) on the LCH by September 2015. The final technology demonstrator is in an advanced state of fabrication at HAL's Helicopter Division in Bengaluru.

IAF pilots who were invited to check out the LCH have been impressed and wish to see more progress in the coming months in the run up to IOC in September.

Yesterday, when Prime Minister Modi visited the HAL stall, he is said to have had a word for the HAL team: 'continue the good work, and make India proud.' He is said to have evinced keen interest in HAL products especially the LCH, which he dwelled on for a few moments. HAL chairman Raju explained to the Prime Minister the efforts made by HAL on the "make in India front". •

Gujarat Beckoning Aviation Investments

BY R. CHANDRAKANTH

The Gujarat State Aviation Limited (GUJSAIL) is making an aggressive pitch for investments in the aviation sector, laying out red carpet to investors by facilitating land, tax incentives and simpler clearances.

Talking to SP's ShowNews, Captain Ajay Chauhan, Director of Civil Aviation, Government of Gujarat, said that the platform of Aero India had helped GUJSAIL to attract significant attention, particularly from non-resident Indians. US-based Affordable Engineering Services has shown interest in setting up MRO facility. He said GUJSAIL is undertaking two studies – one in defence and another on civil aviation – to assess the demand and the capabilities of the State. The reports would be available in the next

six months. Meanwhile, the government is developing about 8 airports, adding to the already 19 airports in the State, thus enhancing regional and remote air connectivity. These airports were forward looking, taking into consideration demand for 20 years. It has taken the services of Airport Vienna consulting to develop these airports which would be more than just runways and airport lounge.

Besides infrastructure creation, GUJSAIL, he mentioned would provide incentives to airline operators, MRO players and other allied services. The GUJSAIL MRO facility, he pointed out, had saved considerable foreign exchange. In one year of its existence it had done business of four million USD, while if the aircraft had gone overseas it would have cost almost 16 million USD. The MRO facility is capable of maintenance of Embraer and Gulfstream aircraft. •

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Honeywell

No Plan B on MMRCA: IAF Chief

BY R.CHANDRAKANTH

The Chief of Air Staff, Air Chief Marshal, Arup Raha has said that even while the contracting committee, one of the four sub-committees going through the 126 multi medium role combat aircraft (MMRCA) deal, is looking at issues of the selected L1 vendor Dassault Aviation (Rafale), there is 'No Plan B'.

Addressing media persons at Aero India 2015, the Air Chief repeated what the Minister of Defence, Manohar Parikkar had said that the government would await the report of the contract negotiating committee to submit its report before taking any decision. "It is important that we get the MMRCA at the earliest."

Stating that obsolescence has hit the Indian Air Force, the Air Chief said there has been a considerable drawdown of the combat force. While, we have had midlife upgrades on aircraft and improved operational availability of aircraft, there is need to replace legacy aircraft and this had been indicated in the long term perspective plan. "We need to build up to 42 fighter squadrons for which we have to have the MMRCA, the FGFA (fifth generation fighter aircraft) and the AMCA (advanced medium combat aircraft) in the next four to five years."

The IAF is phasing out MiG21 which has outlived its life and some of the fleet of MiG27. The induction plan in the IAF has been four squadrons of light combat aircraft (LCA Tejas), starting with two squadrons first, depending upon the production rate of Hindustan Aeronautics Limited. "The LCA has lagged behind, but we now have reached somepoint." The final operational clearance is expected end December 2015.

The series production 1, 2 and 3 of LCA Tejas, he said, were different from one another in terms of design and features. It would be on SP3 that the design and features would be frozen. There is need for 20 aircraft for the first squadron, but a beginning could be made with four aircraft.

As regards inducting additional Su-30MKI aircraft, he said that they were



RAFALE AT AERO INDIA 2015

two different aircraft and that one could not replace the other. To a question on upgrades to Jaguar, the Air Chief clarified that IAF is working with BAE Systems for product support and that upgrades would be in the form of autopilot, new engines, avionics etc. It still has operational life.

Asked about induction of unmanned combat aerial vehicles, the Air Chief mentioned that it was working with Defence Research Development Organisation (DRDO) on this and expected results soon. •

Turbomeca Strengthening Partnerships in India

BY R. CHANDRAKANTH

Turbomeca, the exclusive helicopter engine manufacturer from the Safran Group, is focussed on the Indian market wherein both military and civil helicopter demand is growing. It has a strong partnership with Hindustan Aeronautics Limited (HAL) and will be expanding the same, even while looking at partnerships with the private sector.

Talking to SP's ShowNews, Philippe Couteaux, Vice President and General Manager of Turbomeca, said there were many programmes that the company was involved in with HAL. The light combat helicopter (LCH) of HAL which is entering service by the end of 2015 would be powered by Ardiden 1H1 engines. Similarly it would be powering the light utility helicopter (LUH) programme of the HAL which has plans of producing about 60 to 65 helicopters in a year.

Turbomeca, he said, has been in a relationship of 50 years. The first engine for HAL was the Artouste IIIB turbine installed in the Alouette III (known as Chetak) and Lama (Cheetah). It also powers the Dhruv, advanced light helicopter. Turbomeca has over 250 Shakti engines. The Ardiden 1U/Shakti1U on the LUH allows the helicopter to fly at 6,500 m (20,000 feet).

The company, he said, had recently been signed by Airbus Helicopters to focus on one engine type for its X4 programme. Airbus Helicopters required more power and have lower fuel consumption and Turbomeca's Arrano provided that. "It provides 10 per cent more power." The programme is under development and would be entering service by 2018.

Turbomeca is a world leader in helicopter engines and has about 10 per cent (6000 employees) of the Safran group as also in terms of revenues. It has the largest range of engines from 400 hp to the RTM322 with 2270 shp for the military market. •

HAL to Set up Greenfield Helicopter Facility

BY R. CHANDRAKANTH

Hindustan Aeronautics Limited (HAL) is setting up a Greenfield facility for the exclusive manufacture of light utility helicopters (LUH) and naval multi role helicopters (NMRH) in Tumkuru district, close to Bengaluru.

The HAL Chairman, Suvarna Raju announced that the Government of Karnataka had allocated 610 acres of land in Tumkuru district and efforts are on to start the works over there. The development cost for the helicopter complex would be about Rs. 400 crores. He mentioned that the LUH prototype would be available this year and the certification of the helicopter is expected in 2017.

The future military and civil market in India and elsewhere is huge, he said and added that HAL is positioning itself to address the demands of the market. Based on the current growth rate, there should be about 400 to 600 new helicopter deliveries by 2020. In the past 75 years, HAL he said had major achievements and the light combat aircraft (LCA) Tejas which was handed over to the Indian Air Force recently, is a significant programme. It has a 28,000 sq.m of hangar and the manufacturing line is state-of-the-art. HAL's research and development expenditure in 2013-14 was Rs. 1,083 crore (7.2 per cent) of the turnover.

RAFALE

Asked about the differences between HAL and Dassault Aviation Rafale with regard to contracts, Suvarna Raju said that he was not aware of this. "HAL as a lead production agency will do its role." It has already taken 400 acres of land for the programme and would await directions of the government. "We have 15 indigenous designs and 14 with joint ventures and are capable of handling any project."

As for the regional civil aircraft programme (72-100 seater), the approvals are being obtained and HAL will be in the forefront of this development, he said. •

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BAE Systems Awarded Hawk Support Contract by Hindustan Aeronautics Limited



BAE Systems has secured a five-year contract worth GBP 18.5 million to provide Hindustan Aeronautics Limited (HAL) a comprehensive package comprising Ground Support Equipment, Spares, Support and Training for the Hawk Mk132 advanced jet trainer. This is in support of HAL's plans to establish a dedicated Repair & Overhaul facility for the aircraft in advance of a major servicing milestone anticipated in 2016.

The agreement was signed at Aero India 2015 between Wing Commander Benjamin, Retd., General Manager – Overhaul Division, HAL and Steve Timms, Managing Director, Defence Information, Training and Services, Military Air & Information, BAE Systems, in the presence of HAL's Managing Director, Bangalore Complex Naresh Babu and Chris Boardman, Managing Director, Military Air & Information, BAE Systems.

Steve Timms, Managing Director, Defence Information, Training and Services, said: "This agreement deepens our partnering commitment to HAL and further develops HAL's in-country capabilities that are helping to deliver an enhanced training capability to the Indian Air Force and the Indian Navy."

India is the largest operator of the Hawk advanced jet trainer with 123 aircraft ordered to date, of which over 90 have been delivered to the Indian Air Force and the Indian Navy. The Hawks in service have clocked up nearly 70,000 flying hours. BAE Systems has commenced contract negotiations with HAL on a potential order to supply products and services for the manufacture of a further 20 Hawk aircraft. The aircraft, to be built by HAL in Bengaluru, will fulfil the Indian Air Force's requirement for its prestigious aerobatic team. •

Zen Technologies and Rockwell Collins Launch into India's Military Flight Simulation Market

- Zen Technologies teams with Rockwell Collins to serve the burgeoning need of the military flight simulation market in India
- First jointly developed helicopter simulator unveiled at Zen Technologies Exhibit, Hall C, Stall No- 2.7

Zen Technologies and Rockwell Collins today announced their decision to join forces in military flight simulation by unveiling a next generation rotary wing simulator at Aero India 2015. The two industry leaders recently signed a Memorandum of Understanding (MoU) to combine their strengths in simulation and training to offer advanced and high fidelity aviation solutions.

The strategic alliance between Zen Technologies and Rockwell Collins will produce top shelf solutions while also ensuring cost benefits for customers across the region since the alliance's capabilities are indigenized, including in software, electronics and visuals. With the rotary wing platform launch, both companies aim to emerge, in the near future, as key partners to the Indian armed forces.

The next generation Rotary Wing Simulator housed in an ergonomically designed cockpit is configurable and fully addresses both the flight and mission aspects of rotary wing aircraft. The simulator supports anytime, anywhere training and is a cost-effective, efficient alternative for pilot training in handling routine flights, emergencies and practice missions. Unparalleled realism in training is provided using geo-specific cultured terrains, operations flight profiles, and avionics that can be used to train both new and experienced pilots before any mission. The simulator will enhance combat readiness for crew members through a comprehensive training continuum that is customizable for all types of military platforms.

Commenting on the launch, Mr. Ashok Atluri, Managing Director, Zen Technologies said, "Zen Technologies has over the years emerged as a strong player in the field of land forces simulation in India. Over the next few years, the Indian defence forces will be strengthening their aircraft portfolio, both fixed and rotary wing. Moreover, there are a number of existing simulators which may need some mid-life upgrades both in terms of technology and aircraft concurrency. Therefore, we see a very large opportunity for full mission simulators, flight training devices, and part task trainers, amongst others. Through our association with Rockwell Collins we will be able to fill the existing gap in the flight simulation market in India. Moreover, our alliance with Rockwell Collins marks the first time that a global simulator original equipment manufacturer has teamed with an Indian simulator manufacturing company to cater to the Indian defence market."

Colin Mahoney, Senior Vice President, International & Service Solutions for Rockwell Collins, said, "Being able to unveil this advanced, jointly developed simulator within four months of signing the MOU with Zen Technologies clearly demonstrates the dedication and commitment of both companies to the success of this relationship. This is just the first step in our collaboration. We see tremendous opportunity to provide indigenous, affordable and highly effective simulation and training solutions to India's defence forces through our alliance with Zen." •



ROCKWELL COLLINS & ZEN TECHNOLOGIES LAUNCH THEIR FIRST CO-DEVELOPED PRODUCT- HELICOPTER SIMULATOR

(FROM L-R) HJ KAMATH- SVP AVIATION, ZEN TECHNOLOGIES, ASHOK ATLURI, MD- INDIA, ZEN TECHNOLOGIES, BOB WUESTNER- SENIOR DIRECTOR, AIR COMBAT & SURFACE SOLUTIONS, ROCKWELL COLLINS, KISHORE DUTT, PRESIDENT, ZEN TECHNOLOGIES, COLIN MAHONEY- SVP, INTERNATIONAL AND SERVICE SOLUTIONS, ROCKWELL COLLINS, JIM WALKER- VICE PRESIDENT AND MANAGING DIRECTOR, ASIA PAC, ROCKWELL COLLINS, RAM PRASAD- MD, INDIA, ROCKWELL COLLINS, NICHOLAS P GIBBS- SR. DIRECTOR, SIMULATION PRODUCTS, SIMULATION & TRAINING SOLUTIONS, ROCKWELL COLLINS

Kalyani Group Announces JV with Rafael Advanced Defence Systems

Kalyani Group Announces JV with Rafael Advanced Defence Systems to develop and manufacture high technology systems for the defence sector. Kalyani Group and Rafael Advanced Defense Systems Ltd. today announced the formation of a Joint Venture Company in India (51:49). The initiative is in line with the 'Make in India' policy of the Government, and will enable the development and production of high end technology systems within the country. This will include a wide range of technologies and systems, like Missile Technology, Remote Weapon Systems and Advanced Armour Solutions.

Speaking on the occasion, Baba Kalyani, Chairman & MD, said, "Kalyani Group has been at the forefront in initialising the 'Make in India' campaign. As part of this campaign we aim to develop and produce high end technology systems and expand the Defence Industry Base in our country. We believe in the vision of 'Make in India' and our proposed Joint Venture with Rafael is a step in this direction."

Brig. Gen (Retd), Itzhak Gat, Chairman, Rafael said, "Rafael has been an active participant in the Indian Defence Market for the past few years. We have always endeavoured to contribute to the modernisation of the Indian Armed Forces. As part of our global strategy, we form alliances to develop military applications based on our proprietary technologies and in Kalyani Group we see a lot of synergy and opportunities for growth in new markets and especially in India which is strategic market for us."

Amit Kalyani, Executive Director, said, "We are in step with 'Make in India' campaign. The Government had recently increased the FDI cap in defence to 49%, and we hope that our proposed partnership with Rafael will be among the first few ventures under the new FDI limits."

Vice Admiral (Retd), Yadida Yaari, CEO, Rafael said, "We see Kalyani Group as an ideal partner for expanding our business opportunities in India. We have supported and will continue to support the Indian Ministry of Defence in gaining technological superiority to technological excellence. Rafael is well aware of



SIGNING CEREMONY BETWEEN PRESIDENT KALYANI AND RAFAEL'S PRESIDENT AND CEO IN THE PRESENCE OF INDIA'S MINISTER OF DEFENCE

the 'Make in India' policy, and the JV with Kalyani Group is a firm commitment in that direction. •

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Gujtsail is the nodal agency tasked with the development of aviation infrastructure in Gujarat. To accelerate development, Gujtsail offers investors single window clearance for all projects in the aviation sector.

The company is already in the process of setting up 8 airstrips at Ankleshwar, Palitana, Dwarka, Morbi, Rajkot, Dholavira, Dahej and Ambaji. On the anvil are plans to connect Mandvi, Mehsana and Amereli in order to further boost business. Gujtsail is also developing helipad facilities to handle tourism and emergency operations.

Regional air services have already been started linking Ahmedabad, Bhuj, Jamnagar and Porbandar. Contracts have already been awarded and services are expected to start shortly linking many more key cities and towns of Gujarat.



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Instituting a benchmark for Business & General Aviation (BA & GA) excellence in India, the Business Aircraft Operators Association (BAOA) declared winners of maiden BizAvIndia Awards, in presence of an august gathering from Global aviation fraternity at the sidelines of Aero India 2015. The winners were adjudicated by an eminent panel comprising of Kanu Gohain, Ex Director General, DGCA, Inderjit Sial, President & MD, Textron India, Kapil Kaul, CEO, CAPA India, and Amber Dubey, Head-Aerospace & Defence, KPMG.

BizAvIndia Hall of Fame was conferred to Naveen Jindal, Chairman, JSPL for his relentless contributions and towards the growth of Indian BA & GA sector. Nominations for 'Operator of the Year' were invited across Non Scheduled and Private Operators in the country through an online application. This Award was jointly presented to Air Charter Services & Himalayan Heli Services after a thorough analysis based on stringent criteria for safety, operations, fleet and crew adequacy. 'Award for Innovation' was bestowed upon Mahindra Aerospace for opening up a new avenue and employment opportunities for



WINNERS OF BIZAVINDIA AWARDS 2015 (L-R) AIR MARSHAL J.S. GUJRAL (RETD) OF MAHINDRA AEROSPACE, HARSH VARDHAN OF HIMALAYAN HELI SERVICES, SEMOUN JOLLY OF AIR CHARTER SERVICES & COL. SANJAY JHULKA OF INDIA FLY SAFE (ON BEHALF OF NAVEEN JINDAL)

Hawker. BizAvIndia Awards are a part of BAOA's flagship initiative 'BizAvIndia', to bring Indian BA & GA industry into focus and build cohesion between stakeholders, regulators and the Government. •

Read more at <http://bizavindia.com/>

industry by manufacturing utility aircraft and aero structures that meet the varied needs of the global markets, from its facility in India.

Expressing his thoughts on the occasion, Rohit Kapur, President, BAOA, said 'BizAvIndia Awards have been instituted as the most revered distinction for Business & General Aviation Organisations and contributions towards the sector in India. We hope the Awards will set a gold standard for recognising merit within the Industry'.

'These awards are a welcome initiative by BAOA to recognize and promote general aviation in India' said Inderjit Sial, President & MD, Textron India

The BizAvIndia Awards 2015 were presented in partnership with Textron, a multi-industry company known around the world for its powerful brands such as Bell Helicopter, Cessna, Beechcraft &

BEL Receives Additional Purchase Order for CoMPASS

Navratna Defence Public Sector Undertaking Bharat Electronics Limited (BEL) has received an order at Aero India 2015 from Elbit Systems Electro-Optical Elop Ltd. (Elop), of Israel, for the production of Elop's Compact Multi-Purpose Advanced Stabilized Systems (CoMPASS). This is in addition to an earlier order for the supply of CoMPASS, received by BEL from Elop in 2014.

Previously, BEL had entered into a Technical Collaboration Agreement with Elop for the joint production and D-Level maintenance of CoMPASS for the Advanced Light Helicopter (ALH) Programme. BEL had absorbed transfer of technology (ToT) for production of CoMPASS in India.

CoMPASS is used in the ALH being manufactured by HAL.

The CoMPASS is a day-and-night surveillance system that includes a colour TV daylight camera, 3rd Generation 3-5 µm Forward Looking Infrared (FLIR) sensor, Laser Target Designator and Range Finder (LTDRE) and automatic tracking capabilities, as well as command and control capabilities. It is distinguished by a wide variety of interfaces, enabling integration with various aircraft / helicopter systems, such as Mission Computer, fire control, radar, GPS, data downlink and helmet-mounted tracking systems. Its small dimensions, low weight, high level of stabilisation and coverage angles make it an optimal choice for long-range, day-and-night surveillance, target tracking, fire control applications and search and rescue.

CoMPASS is the most advanced payload version of its family, featuring reduced weight, high degree of modularity and flexibility, space-saving packaging and advanced operational and video processing features. •



DEFENCE MINISTER MANOHAR PARRIKAR VISITED THE NAVRATNA DEFENCE PSU BHARAT ELECTRONICS LIMITED (BEL) STALL AT AERO INDIA 2015 ON FEBRUARY 18, 2015. HE WAS SHOWN AROUND BY BEL CHAIRMAN & MANAGING DIRECTOR, S.K. SHARMA

Carl-Gustaf Weapon System for Any Scenario

FFV Ordnance, part of defence and security company Saab, presents the newly-developed next generation Carl-Gustaf M4 for the first time in India at the Aero India. The Carl-Gustaf M4 is the latest man-portable shoulder-launched multi-role weapon system from FFV designed to provide users with flexible capability and help troops to remain agile in any scenario.

The new light-weight Carl Gustaf M4, weighing less than 7 kg, offers significant weight savings to the soldier. It is also compatible with future battlefield technology such as intelligent sighting systems for programmable ammunition. With a wide variety of munitions available, it is a weapon system

capable of handling multiple tactical situations, bridging the gap between full scale operations and low intensity conflicts, and providing the modern warfighter with unprecedented flexibility and capability on the battlefield.

"We are very proud to present the new Carl-Gustaf M4 at Aero India for the first time. It has been developed as a response to the evolving needs of our customers and we are very pleased to show the new capabilities to such a distinguished audience," says Bo Thörn, head of FFV Ordnance.

Carl-Gustaf M4 is the next evolutionary step in multi-role, man-portable weapon systems. It can be taken into any combat environment and used effectively in a variety of strategically useful ways. •

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In a heart-stopping moment at a display of aerial pyrotechnics, two Flying Bulls aircraft scraped each other in mid-flight at the Aero India show in Bengaluru. Both planes landed safely and nobody was hurt. The wings of the planes were damaged.



Rolls-Royce Awards Contract to TAL

Rolls-Royce has awarded a contract worth over US\$ 19 million to TAL Manufacturing Solutions Ltd., (TAL), a Tata enterprise and a wholly owned subsidiary of Tata Motors Ltd., for manufacture and supply of precision aero engine components for Trent XWB and Trent 1000 aero engines. The contract will run until 2022, and has been awarded after a selection process which involved several global companies.

Kishore Jayaraman, President - India and South Asia, Rolls-Royce, said: "Rolls-Royce is proud to welcome Tata into its family of world-class aerospace suppliers, and we are confident that this partnership will help Rolls-Royce and TAL leverage each other's capabilities. India is rapidly emerging as a preferred

destination for sourcing and manufacturing of aerospace components, and companies like TAL have already demonstrated their ability to supply globally by adopting international quality standards, and better efficiency and manufacturing facilities."

"The signing of this contract holds strategic importance for us, as it adds to our portfolio of manufacturing and supply of precision aero engine components for next-generation engine programmes. With this, our capabilities in aerospace will extend to thin-walled forming and special welding technologies, which will make us a truly one-stop solution for aerospace parts and assemblies," said Rajesh Khatri, Executive Director and CEO, TAL Manufacturing Solutions Ltd. •

LCH to be Powered by Turbomeca's Ardiden Engines

Hindustan Aeronautics Limited (HAL) light combat helicopter (LCH) will be powered by the Ardiden 1H1 engine from Turbomeca (Safran group). This new twin-engine military aircraft is being showcased at Aero India 2015.

Turbomeca will also power the new HAL-designed light utility helicopter (LUH), a three-ton single-engine aircraft under development, with the Ardiden 1U engine. Featuring state-of-the-art technologies, the Ardiden 1 family develops 1,400shp. The Ardiden 1H1 variant was EASA-certified in 2009 and over 250 units have already been co-produced, under the 'Shakti' designation with HAL. Ardiden 1U/ Shakti 1U on LUH will allow the helicopter to fly at 6,500 m = 20,000 feet

The first bench testing of the Ardiden 1U, the single-engine variant, took place in early December 2014 and first models were delivered to HAL by the end of 2014. EASA type-certification is scheduled for 2017.

Olivier Andries, Chairman and CEO of Turbomeca said: "Our participation

in the LCH and LUH programme builds on our track-record, established since 2003, of cooperating on the Shakti project. We are extremely proud of the continued confidence placed in us by HAL."

LONG-STANDING PARTNERSHIP WITH INDIA

HAL and Turbomeca are celebrating 50 years of working together on helicopter projects. The relationship started with an agreement to produce, in India, the Artouste IIIB turbine installed in the Alouette III (known as Chetak) and Lama (Cheetah). With the TM333 fitted in the civil Dhru and the Shakti in LUH and LCH, Turbomeca has been involved in the ALH/Dhruv programme since the very beginning.

Turbomeca conducts business through its Turbomeca India facility, supporting military customers and 200 civil engines in operation. Some 1,500 Turbomeca engines, most of them locally produced by HAL, are flying in the country. •



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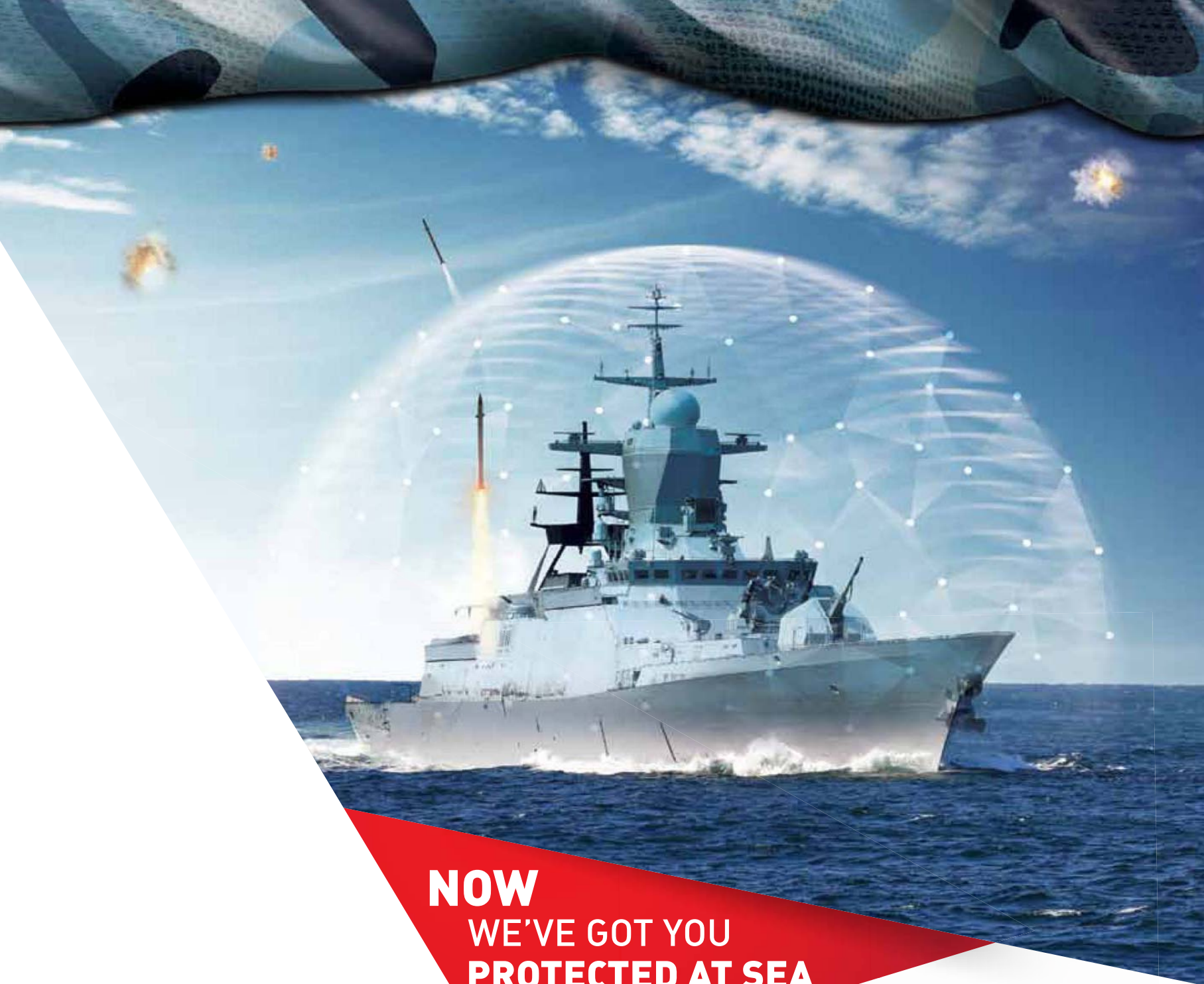
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