

# New Leaders at Helicopter Associations in India and Canada

By VFS Staff

## Butola Leads RWSI

Retired Indian Air Force (IAF) Air Marshal Arvind Singh Butola was elected as the President of the Rotary Wing Society of India (RWSI) on June 17, 2021, for a period of three years. He succeeded retired Air Vice Marshall K. Sridharan, who led the society since inception and founding in 1998.



Butola entered the National Defence Academy in 1978 and was commissioned in the IAF as a helicopter pilot in June 1982. He has served all over India and abroad, and has 7,000 hours of incident-free flying on 24 different types of aircraft and helicopters. He is a graduate of Defence Service Staff College and National Defence College, with a Master of Philosophy degree in Defence Studies.

Butola is qualified as a flying instructor and an experimental test pilot. He served as an instructor in the basic stage training of both fixed-wing and helicopters, and served as a Senior Flying Instructor for the Namibian Defence Force in 1997–99. As an experimental test pilot, he was involved in prototype testing, certification and induction into the IAF of the Dhruv Advanced Light Helicopter (ALH) and the Cheetal in 2001–05 (see “HAL Finally Sees New Model Production,” pg. XX). He also served as an experimental test pilot with the Mil Design Bureau in Moscow in 2009–10 for the Mi-17V-5 cockpit design project.

After successful operational tenures, Butola served as Principal Director of Administration in the Indian Strategic Forces Command, Senior Officer of Administration and Senior Air Staff Officer of Central Air Command, Assistant Chief of Air Staff at Air Headquarters (controlling all transport and helicopter assets), and Commandant of Air Force Academy, before taking over as Air Officer Commanding-in-Chief of the Training Command. He retired from the IAF on Sept. 30, 2020, after more than 38 years of service.

Butola was awarded Commendation Cards by the Commander-in-Chief and Chief of Air Staff in 1985 and 1988, respectively. For his distinguished service to the nation, he was awarded by the President of India the Vayu Sena Medal in 2002, Vishisht Seva Medal in 2005 and Param Vishisht Seva Medal in 2021.



## Mitchell Takes Over HAC

Trevor Mitchell was introduced as the incoming President and CEO of the Helicopter Association of Canada (HAC) during the organization’s annual conference, held virtually Nov. 22–24, *Helicopters Magazine* reported. Mitchell will succeed Fred Jones, who served as the leader of HAC since October 2008.

“Trevor brings with him a broad range of experience in the Canadian Helicopter industry, including time as a line pilot, heliports consultant, ops manager, and aviation consultant,” Jacob Foreman, HAC Chair of the Board, said in a message to members.

Mitchell most recently served as a heliport planner with WSP — one of the world’s leading professional services consulting firms — based in Regina, Saskatchewan, while also leading his consultancy specializing in rotary-wing operations and infrastructure. He served as the operations manager at Regina International Airport (YQR) — the 15th busiest airport in Canada — with Strategic Aviation in 2016–17, and as a Base Director with STARS in Regina in 2013–2016. In 2013, Mitchell flew as a line pilot for the Winnipeg Police Service after he spent more than seven years with Arrow Helicopters, including time as its operations manager. He also served as a base pilot with Kokanee Helicopters in 2004–05.

Mitchell originally studied at University of Saskatchewan before becoming a commercial helicopter pilot in 1997. He graduated from Athabasca University in 2016 with a Bachelor of Management degree.

In his President’s Report, Jones said, “It has been my great pleasure to serve as HAC’s President & CEO since the Fall 2008. Some years have been better than others, and 2021 has been challenging to say the least — for the industry and your industry association — 2021 was quite a year. While 2020 was the worst year in our industry’s history, HAC was most adversely affected by the pandemic in the membership year 2020-2021. We experienced significant drops in our membership and [virtual] Convention revenue.”

Jones noted that as of Dec. 1, he was transitioning to a part-time consulting role in support of the Board and Mitchell “to ease the transition and to provide any other assistance that your Board sees fit.”

Video recordings of briefings from the HAC Annual Convention can be viewed at [www.h-a-c.ca/convention.html](http://www.h-a-c.ca/convention.html).



# Reflections on the Origins of the Rotary Wing Society of India

By Air Vice Marshal K. Sridharan, Indian Air Force (Ret)

The founder and long-time president of the RWSI reflects on a quarter century of progress. In June 2021, he was succeeded by Air Marshall (Ret) A.S Butola (see “Leadership Moves,” pg. XX.)

In this article, I would like to share my experience in building the Rotary Wing Society of India (RWSI) to serve the Indian helicopter industry and improving the safety of civil helicopter operations.

At the request of my colleagues in the helicopter fraternity, I agreed to establish a not for profit, professional institution to assist the growth of the Indian Helicopter Industry. Along with 15 highly qualified and experienced rotary-wing aviation professionals — both serving and retired pilots and engineers — as its founding members, RWSI was registered with National Capital Region New Delhi on June 18, 1998, a year after I began the groundwork for its formation. The objective set for RWSI was to promote advancement of the Indian Helicopter Industry in achieving the highest level of safety and efficiency.

In the formative years of RWSI (before 2000), the high number of accidents of civil helicopters in India — an average of five major accidents per year — convinced the founding members of the need to focus RWSI activities on achieving safer skies through safety education, namely the recurrent training of pilots on aeronautical subjects such as safety management systems. Between 2004 and 2021, a total of 6,600 pilots, engineers and other aviation professionals have benefitted from various courses conducted by

RWSI. Notably, these courses were conducted by experienced members of RWSI on a voluntary basis. We believe that the efforts of RWSI in achieving safer skies through ground training courses on aeronautical subjects for civil helicopter pilots has helped to build their aeronautical decision-making abilities, contributing to a reduction in the number of accidents. The work done by RWSI in other safety promotion areas during the last two decades is outlined in the succeeding paragraphs.

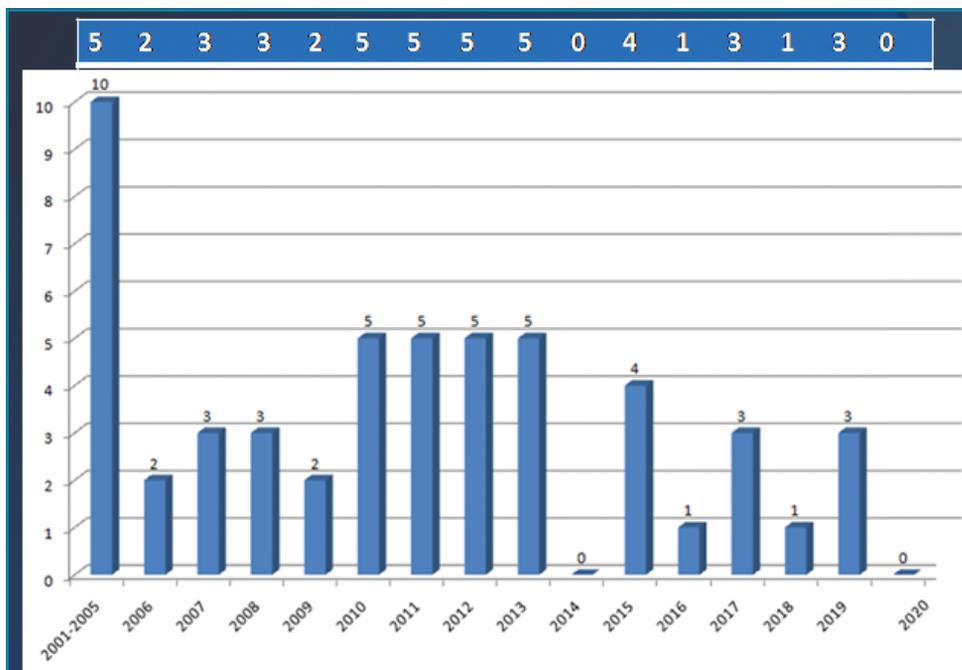
## Safety Promotion

RWSI’s *Rotor India* publication is circulated to members free of cost. The only dedicated publication covering the activities of civil and military helicopter industry in India, the quarterly print magazine and online monthly updates focuses on key issues, helicopter news, special reports, product updates and services.

To enhance the safe operation of helicopters, RWSI helps helicopter operators comply with regulatory norms through



The IULH is being target for a wide range of possible missions, including training, aerial survey, air tourism and emergency medical services.



The high number of accidents of civil helicopters in India inspired the focus on safety during its formative years.



leading members of the industry. RWSI is an active member of Vertical Aviation Safety Team (VAST) — previously known as International Helicopter Safety Team (IHST) — and has successfully organized two IHST/VAST regional conferences in New Delhi. The first one was held on June 12–13, 2006, and the second one during Sept. 6–7, 2018. Many safety recommendations launched by IHST (India) have helped improve the safety performance of civil helicopter operations.

In the interest of building an enabling environment for growth of the Indian helicopter industry, RWSI has regularly interacted with India’s Ministry of Civil Aviation, Directorate General of Civil Aviation and the Airports Authority of India as a nodal agency of the helicopter industry.

### Significant Safety Progress

After working on these key areas for a quarter-century, I am happy to report that the safety environment of the helicopter industry in India has improved. Between 2001 and 2005, the average number of civil helicopters that met with major accident was five per year. Since 2006, the average has fallen to 2.8 major accidents per year.

RWSI negotiated formidable struggles faced by the society in its formative years, but they were well worth it. As the society



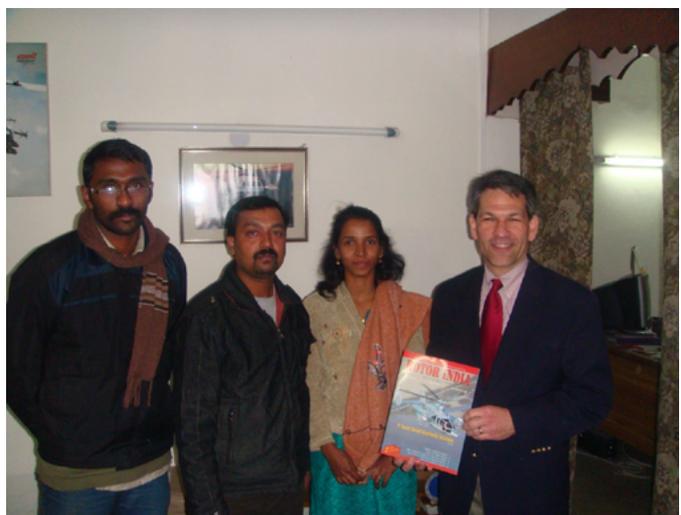
RWSI’s safety leadership resulted in IHST regional conferences in New Delhi in June 2006 (top) and September 2018 (bottom).



RWSI presented HAI President Roy Resavage (middle) a model of the HAL Dhruv at Heli-Expo 2005 in Anaheim, California, by RWSI Board member Chandra Upadhyay (left) and RWSI President Sridharan (right).

third-party safety audits of their operations and maintenance facilities. Of the 67 third-party safety audits conducted, the majority were related to helicopter service providers and helideck operators in the offshore sector.

RWSI has organized over 60 national and international seminars and workshops in Delhi, Mumbai and Bengaluru on the latest technological developments and other topical subjects. These events were designed to build the awareness of rotary-wing aviation professions and were well attended by the



Mike Hirschberg visited with RWSI Board members (top) and staff members (bottom) at its old Delhi offices in 2011.



At Heli Power India 2012 in New Delhi, Hirschberg recognized Indian Institute of Technology Kanpur students Puneet Singh and Sriram Ganesan for their winning entry in the 28th Annual VFS Student Design Competition.

was started with zero investment and no financial help from the Indian government or others, it was operated from my residence in the formative years. Later, we worked from a garage in Sector-21 NOIDA on the outskirts of Delhi before we could afford to shift into a proper office.

It is also a matter of immense pride that the RWSI was built up by the phenomenal voluntary support received through the sponsorship from office bearers and some corporate members. *Rotor India*, the mouthpiece of RWSI, was published through free editorial service of the society's officers and advertisement from its corporate members. The achievement of the society's major objectives was made possible by the voluntary service of its members, driving the revenue that helped build a corpus to operate the society.

RWSI came to be recognized as a nodal agency for helicopter operators by the Ministry of Civil Aviation. The society played a supportive role to civil aviation authorities in finding solutions to common issues faced by the civil helicopter operators.

RWSI is managed by a 15-member elected council, and has earned the patronage of the chiefs of the Indian Army, Navy and Air Force, as well as that of two eminent industrialists and aviators, Mr. Ratan N. Tata, chairman of Tata Trusts, and Air Commodore (Honorary) Dr. R. Vijaypat Singhania, chairman emeritus of Raymond, Ltd.

RWSI has maintained regular contact with professional societies such as VFS, Helicopter Association International (HAI), VAST/IHST and the British Helicopter Association (BHA). RWSI is also proud to include helicopter operators from Nepal and Bhutan. It has extended its membership affiliation to the Helicopter Society of Nepal.

I am personally grateful to the guidance received from the leadership of HAI — past presidents Roy Resavage and Matthew Zuccaro, and current president Jim Voila — and AHS/VFS executive directors Rhett Flater and Mike Hirschberg. RWSI became an Affiliate Member of both HAI and VFS in



HAI President Matt Zuccaro (left) presenting the RWSI Life Time Achievement Award to Sridharan (right) at the 2018 IHST regional conferences in New Delhi.

2000. In the years 2006 and 2018, when RWSI organised International Helicopter Safety Team Regional Conferences at Delhi, members from HAI, including Zuccaro, participated in the events and shared their successful safety initiatives in reducing the number of civil helicopter accidents. In January 2011, Hirschberg, VFS, visited the RWSI headquarters in New Delhi. A second meeting in Bengaluru in 2013 helped in opening the first VFS chapter in India.

### **Growing Safety for Tomorrow**

In October 2020, RWSI agreed to HAI's invitation to join its International Partnership Program (IPP). It had also proposed that it was ready to assist future safety education and safety audit programs for civil helicopter operators in South Asian Association for Regional Cooperation (SAARC) countries. Since then, the HAI team has been holding regular meetings with RWSI on areas of common interest.

The growth in RWSI membership is a key indicator of its contribution to the rotary-wing aviation community. Over 1,270 aviation professionals and 187 corporate members have joined RWSI and more are continuing to do so. RWSI has been fortunate in having volunteer members who, through their integrity, discipline and selfless devotion to duty, have made huge contributions to RWSI activities.

Institutions such as RWSI are important to promoting the advancement of the helicopter industry in achieving the highest level of safety and efficiency. RWSI's safety through education initiatives have been a major success in India and may prove instructive for other countries that operate helicopters.

After I stepped down as President of RWSI on June 17, 2021, HAI President Viola kindly wrote of how RWSI had a profound impact on the industry by enhancing training resources available to the operators in our region: "Rotorcraft industry professionals need every advantage available to enhance safety and improve the efficiencies of their operations... The RWSI Recurrent Training Program, which you implemented, is just one example of the benefits

your organization provides to industry... You have provided for an enhanced safety culture across the region for years to come. You have also had a noteworthy influence on the level of international collaboration within our industry. Your contributions to programs such as the HAI International Partnership Program, and the International Federation of Helicopter Associations, have helped to align the industry more closely by facilitating a unity of effort on issues that impact us all. Through your faithful efforts, you have set the standard for all to follow.”



#### **About the Authors**

Air Vice Marshal K. Sridharan (Ret.) is the founding president of RWSI; he continues today as editor of *Rotor India*, the only journal dedicated to covering the civil and military rotary-wing aviation activities in the country. Born in February 1941 in Bangalore, India, he graduated from National Defence Academy and joined the Indian Air Force (IAF) in January 1963. As a qualified helicopter and transport pilot in the IAF, Sridharan served with distinction in numerous helicopter units and transport squadrons. Notable in his career of service was his participation in the air evacuation of disabled Indian prisoners of war from a Red Cross camp near Kibithoo in April 1963, the insertion of the Indian Army's Parachute Regiment during the Indo-Pakistani War of 1971 and the opening of the Andaman and Nicobar Islands for helicopter operations in November 1979.

Sridharan is a flying instructor in both fixed- and rotary-wing aircraft, and a production test pilot with over 6,700 hours of flying experience in India and abroad. He holds a Masters in Military Science from the Universities of Allahabad and Madras. Sridharan is the recipient of a Lifetime Achievement Award for valuable contributions to RWSI in 2018, a lifetime achievement award for valuable contributions in rotorcraft research by the Asian/Australian Rotorcraft Forum in 2015, the Sikorsky Award for Pioneering Work in Rotary Wing Aviation in India in 2004, and the Vayu Sena Medal (Gallantry) in the IAF.

# Legend to Develop Indian Ultra-Light Helicopter

By Dan Gettinger, Managing Editor

**L**egend Technologies (India) Pvt., Ltd., an Indian aerospace firm based in Bengaluru, is making progress on the development of that nation's first indigenous ultralight helicopter. If it succeeds, the Indian Ultra-Light Helicopter (IULH) could be one of the few civil or military helicopters developed and produced domestically (see "HAL Finally Sees New Model Production," pg. XX). The IULH offers a promising prospect for growing India's domestic helicopter industry at a time when doing so has become a priority for a range of government and commercial entities.



The Legend Technologies Indian Ultra-Light Helicopter. (All images from Legend).

Computer-generated renderings of the IULH shared with *Vertiflite* show a two-seat helicopter with a two-bladed main rotor. Legend says that it will be outfitted with an integrated glass cockpit and advanced navigation and communication systems. It is expected to have a maximum take-off weight of 1,764 lb (800 kg) and a 772-lb (350-kg) payload capacity. Operationally, the IULH will have a 186-mile (300-km) range and a flight ceiling of 10,000 ft (3 km). Legend is designing the IULH to be certified against Part 27 rotorcraft standards and capable of conducting day and night flights.

Legend Technologies is considering a piston engine for the IULH, such as a four-cylinder, air-cooled member of the Lycoming family, though other piston and turbine engines are also under consideration. Although piston-powered helicopters remain a minority in relation to those with turbine engines — around 22% of civil rotorcraft sales between 2021 and 2030 are projected to be piston-powered aircraft (see "The World Rotorcraft Market: 2021-2030," *Vertiflite*, May/June 2021) — they remain the engine of choice for lightweight helicopters like the Robinson R22

and Hélicoptères Guimbal Cabri G2. Legend estimates that the IULH will require an engine with a fuel-injected system and capable of delivering 200 hp, with at least 160 hp at an altitude of 6,500 ft (1.8 km) for India's high-altitude regions, approaching the Himalayas.

India's community of civil helicopter operators is small relative to other countries. As of early 2021, fewer than 300 civil helicopters were registered in India, a statistic that has remained stubbornly stable for at least the past decade. By comparison, over 800 civil helicopters are registered in Japan. "Currently, the helicopter operations in India are well below the potential of a country as large as ours," said Hardeep Singh Puri, then India's minister of civil aviation, in a speech at Aero India 2021, in early February 2021.

In a ceremony at the expo, Legend Technologies signed a memorandum of understanding with the government of Karnataka to develop the IULH. At the national level, Jyotiraditya Scindia, Puri's successor as minister for civil aviation, announced a new policy in October creating new helicopter hubs and flight corridors, cutting landing and parking fees, and streamlining regulations — which have been the key barrier to civil helicopter expansion in India.



The IULH is being target for a wide range of possible missions, including training, aerial survey, air tourism and emergency medical services.

Commercial operators like Blade have also taken steps to ramp up operations in the country. In October, after a runway closure forced airliners to suspend flights at Lohegaon Airport in Pune, Blade helicopter stepped in to offer helicopter services to frustrated travelers. In November, Blade India announced that it had partnered with Airbus to introduce new charter routes, part of a government-backed initiative.

Legend Technologies envisions that the IULH will offer a cost-effective, domestically produced solution to India's tepid civil



Dr. E. Ranga Reddy is the Chairman and Managing Director of Legend Technologies.

helicopter marketplace. It has suggested offering the IULH for a range of applications such as pilot training, aerial survey, air tourism, agriculture, advertising and emergency medical services, among others. In doing so, Legend hopes to take an early lead in a field that holds immense potential for expansion.

Legend Technologies is an AS 9100D-certified company established in 1992. Dr. E. Ranga Reddy is the Chairman and Managing Director. The company “offers end-to-end and cost-effective solutions” for the design and fabrication of aerospace assembly jigs, aerostructures and high-precision slip rings. Legend has been involved in indigenized product such as the HAL Tejas Light Combat Aircraft (LCA), Light Combat Helicopter (LCH) and Advanced Light Helicopter (ALH), and was also involved in licensed products like the Cheetah and Chetak helicopter programs. It has hired a number of helicopter experts for the program, including former employees from HAL’s Rotary Wing Research and Design Centre.

Learn more at [www.legendtechnologies.co.in](http://www.legendtechnologies.co.in).



# HAL Finally Sees New Model Production

By Dan Gettinger, Managing Editor

**A**fter decades of development of its two new indigenous models, India's Hindustan Aeronautics Limited (HAL) finally sees deliveries of its light utility and combat helicopters.

## Light Utility Helicopter Advances

On Nov. 2, India's Defence Acquisition Council (DAC) approved the procurement of 12 HAL Light Utility Helicopters (LUH). The 12 aircraft will be divided evenly between the Indian Air Force (IAF) and the Indian Army's Army Aviation Corps (AAC) and are expected to be delivered in August 2022. The decision by the DAC to proceed with the LUH procurement comes amid a prolonged period of uncertainty surrounding the future of the Indian military's helicopter acquisition programs, of which the LUH is but one.

The LUH is intended to replace the Cheetah (Aérospatiale SA-315B Lama) and Chetak (Aérospatiale SA-316B Alouette III) helicopters operated by the Indian Air Force and Army, both of which were introduced in the 1960s. According to VFS Vertipedia database, the HAL LUH has a maximum weight of 6,900 lb (3,120 kg), payload of 880 lb (400 kg), and seats six passengers in addition to two pilots. It is powered by a single Safran Ardiden 1U1 turboshaft engine. HAL displayed a mockup of the LUH in May 2010; the first prototype made its maiden flight in Sept. 6, 2016.

India's push to replace the Cheetah and Chetak began in 2001 with what was then called the Light Observation Helicopter program (see "The HAL Light Utility Helicopter (LUH)," *Vertiflite*, Spring 2011). India formalized the program in February 2008 when it issued the Reconnaissance and Surveillance Helicopter (RSH) requirement. The RSH called for the procurement of a total of

384 helicopters, of which 197 were to be acquired from abroad and 187 from a domestic supplier — i.e., HAL. On May 13, 2015, India's DAC selected the Russian-made Kamov Ka-266T over the Airbus Helicopters AS550 C3 to fulfill its requirement for a foreign-made helicopter for the RSH program.

The early months of 2021 saw progress on the planned replacements for the Cheetah and Chetak. In January, Shephard News reported that Russian Helicopters, the parent company of Kamov, was moving towards serial production of the Ka-226Ts for India. On Feb. 5, 2021, the HAL LUH achieved initial operational clearance from the Indian Army. In October, HAL completed high-altitude trials of the LUH in Ladakh, an accomplishment quickly followed by the Nov. 2 approval of 12 LUH by the DAC. In a response to parliamentary questions in



Lt. Gen. A.K. Suri, Director General and Colonel Commandant Army Aviation, visited the Indian Aviation Squadrons in Ladakh on Oct. 7. He flew a test sortie in the LUH, completing its high altitude trials. (Indian Army Northern Command)



The indigenous HAL Light Combat Helicopter was designed to operate at the high altitudes of the disputed Himalayan regions bordering Pakistan and China. (HAL)

late November, Defense Minister Ajay Bhatt said that an initial group of four LUH would be produced between 2022 and 2023, followed by eight helicopters between 2023 and 2024.

However, as of press time in early December, many questions regarding the future of the program remain unresolved, particularly those involving the Ka-226T. A meeting between Russian President Vladimir Putin and Indian Prime Minister Narendra Modi on Dec. 6 did not produce a contract for the Ka-226Ts, a failure that local media reports attributed to a dispute over the degree to which the Russian helicopters are produced in India. With India far short of its initial goal of 384 helicopters and the planned retirement of the Cheetah and Chetak looming, calls to accelerate the program are growing louder.

### **India Advances Attack Helicopters**

Meanwhile, the IAF has taken delivery of its first HAL Light Combat Helicopter (LCH). In a ceremony marking the 75th anniversary year of India's independence on Nov. 19 in Jhansi, Uttar Pradesh, Prime Minister Narendra Modi handed over the LCH to Air Chief Marshal Vivek Ram Chaudhari, IAF Chief of the Air Staff (CAS). The LCH is the first attack helicopter developed and produced in India and, according to HAL, is the only such helicopter that can take off at an altitude of 16,400 ft (5,000 m). The aircraft was originally conceived as the Light Attack Helicopter (LAH) in 1989 and made its first flight in

March 2010 (see "The HAL Light Combat Helicopter (LCH)," *Vertiflite*, Spring 2011).

Although the government of India has approved the acquisition of 15 LCHs, a contract for the aircraft has yet to be signed, according to FlightGlobal. Still, HAL has begun production of the 15 helicopters using internal funds with the expectation that a contract is forthcoming. In an interview with *India Today*, HAL Chairman R. Madhvan said that the company could fulfill an order of as many as 150 LCHs depending on the final acquisition decision by the government.

The LCH was a development of the HAL Advanced Light Helicopter (ALH) Dhruv, which went into service in 2002, and is now used by the IAF, Indian Navy and Indian Coast Guard. More than 300 Dhruv's have been produced for military and civil operators around the world. 

Editor's note: On Dec. 8, India's Chief of Defence Staff Gen. Bipin Rawat, his wife and 11 others were killed in an IAF Mi-17V5 crash in southern India. The Indian Army released a statement describing Gen. Rawat as "a visionary who initiated far reaching reforms in the Indian military's higher defense organization." VFS extends its heartfelt condolences to the family and friends of the victims, and to all of India.