



## The Vanguard Lectures

<b>Guest</b>	<b>Mr. S. Bhattacharya</b> Chief Designer Rotary Wing Research & Design Center (RWRDC) Hindustan Aeronautics Limited, Bangalore
<b>Date</b>	28 <sup>th</sup> September 2018
<b>Title</b>	<i>Development Challenges of Modern Transmission Systems</i>
<b>Attendees</b>	B.Tech. (All) Students +M.Tech./ M.Sc./ Ph.D. (All) Students Interested Faculty Members and Technical Staff Members
<b>Venue</b>	Lecture Hall Complex (Room number )
<b>Time</b>	4:00pm –6:00pm
<b>Abstract</b>	<p>Changing trends in the military aviation &amp; warfare keeps redefining technologies which necessitates a continuum of change in the products. Accordingly, future rotorcrafts need to address the following requirements which are primarily high speed, lower vibration levels, less noise, high reliability, less maintenance, higher pay-loads, user friendly cockpit with lesser pilot work load, smart systems, low life cycle cost etc.</p> <p>Drive system is one of the critical system of the helicopter which transmits power from engines to the rotors. It also provides drive to various accessories, provide the anchoring points for the control system of the rotor blades. Also its mounting on the structure through vibration isolation system should ensure isolation of rotor vibration to the structure to the acceptable level of comforts to the crews and the passenger. Over the years there may not be drastic changes in the design philosophy of the gears and bearings, however the market is demanding more and more from the systems in less and less weight. Also each system should be highly reliable, ensures low and predictive maintenance by way of diagnostics. All these need to come with highest level of safety. The development time and cost is being continuously crunched, challenging the designers to get early feedback of the product in the design stage itself by way of analysis and simulation to reduce the cost and time in testing and prototype development phase.</p> <p>The talk mainly concentrate on indigenous development and manufacturing of helicopters and specific to development of one of key subsystem like its drive system. With the challenges as explained above, the talk mainly concentrates on the various aspects, tools and strategies of successful development of such key system.</p>



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<b>Bio-Data</b>	<p>Mr. S. Bhattacharya is a technical and management executive with more than 30 years of experience in the field of helicopter engineering. Presently he is working as Chief Designer at Rotary Wing Research &amp; Design Center (RWRDC), Hindustan Aeronautics Limited, Bangalore. He did his M.Tech. (Machine Design) from Indian Institute of Technology-Kharagpur and B.E. (Mechanical Engineering) from Jadavpur University, Kolkata.</p> <p>He possess functional, technical, leadership and management skills and have been using industry knowledge to drive engineering operations, analysis, validation testing and certification of helicopters.</p> <p>He possesses vast experience in the field of design and development of Drive system of Helicopters. He has held various positions in his organization which is a centre of design, development, upgrade of helicopters and their airworthiness certification from Indian Certification Authorities.</p> <p>Mr. Bhattacharya manages and supervises the execution of R&amp;D projects. In his current role, his work involves guiding a team for developing Helicopters with specific to its Drive System which encompasses</p> <ul style="list-style-type: none"><li>- Identifying Stake holders' needs and requirements for helicopters</li><li>- Architecture definition and studies</li><li>- Configuration freeze</li><li>- Detail design analysis and validation process</li><li>- Follow up process in the complete life cycle of the product from realization of prototypes, testing, verification and validation, transition to production and Maintenance and Overhaul related activities.</li></ul>
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