GENERAL INFORMATION

Venue

Department of Aerospace Engineering,
Indian Institute of Science, Bangalore 560012, India

Lecture Series Secretariat

S Gopalakrishnan,
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Jointly Organized by

- Indian Institute of Science: IISc
- Indian National Academy of Engineering: INAE
- CSIR-National Aerospace Laboratories, Bangalore: NAL

Supported By

- India - US Science and Technology Form: IUSSTF
- Office of Naval Research - Global: ONR-G
- Institute of Mechanical Engineering, UK : IMechIE
- Department of Civil Aviation: DGCA
- Defence Research & Development Organization: DRDO
- Indian Structural Integrity Society: InSIS

Lecture Series Material

All the registered delegates will be provided with lecture notes and handouts on a pen drive.

Accommodation

Very limited accommodation will be available in IISc guesthouses on first - come basis. A number of hotels are available very close to IISc and the Lecture Series Secretariat will help in getting the accommodation. This will be posted soon in the website

Technical Advisory Committee

S Gopalakrishnan	IISc, Bangalore, India Course Coordinator (India)
Lalita Udpa	Michigan State University, USA Course Coordinator (USA)
S.G Sampath	Program Manager (Retd), FAA, USA Course Director (USA)
A R Upadhya	Former Director, CSIR-NAL, India Course Director (India)
Shri J Jadhav	Director, CSIR-NAL, India
Tessy Thomas	DS and Director General (Aero), DRDO
Ramesh Kolar	Program Manager, ONRG, USA
Prof. B. Dattaguru	Former Chairman, Aero Department, IISc

Tentative List of Topics and Speakers

S G Sampath	FAA, USA(Retd)	Introduction
Vinod Agarwala	US Navy (Retd)	Corrosion Prevention and Control
Mohan Ratwani	Northrup Grumman (Retd)	Airframe Repair Schemes
Lalita Udpa	Michigan State University, USA	Non Destructive Inspection Techniques and Inspection Reliability
Colin Drury	State University of New York, Buffalo, USA	Human Factors in Aircraft Maintenance
FAA, AFS-910, USA		Time Management for Aviation Safety Inspectors
FAA, AIR-100, USA		Safety Data Requirements, Archival, Retrieval Analysis
Nam Pham	US Navy	US Navy's Aging Aircraft Initiatives
R Sundar	Bangalore Integrated Systems Solutions, India	Fatigue Design and Widespread Fatigue Damage
Yogesh Kumar	Hindustan Aeronautics Limited, India	Aging Avionics
S Gopalakrishnan	Indian Institute of Science, Bangalore	Structural Health Monitoring
A R Upadhya	NAL, ADA (Retd)	Airframe Structural Life Management Program of the LCA
Dawid Janas	Silesian University of Technology, Poland	Aging Wiring, Insulators, and Dielectrics, and Diagnostic Methods to Estimate Residual Life.
K Vijayaraju	ADA, India	Technology Insertion Opportunities Offered by New Material Systems.
Georg Guenther	Deutsche Airbus, Germany	Aircraft Loads Monitoring and Operational Planning
Mario Colavita	European Aviation Safety Agency, Germany	EASA's Aging Aircraft Initiatives
Ugo Mariani	Leonardo Helicopters, Italy	Aging Helicopters
Prakash Patnaik	NRC, Canada	Effect of Newly Promulgated, Environmental Rules
Prakash Patnaik	NRC, Canada	Aging Engines
R K Singh Bhadhuria	AOC Training Command, IAF	Aging Aircraft-IAF Experience

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IUSSTF Indo-US Science and Technology Forum

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InSIS Indian Structural Integrity Society

India – USA Lecture Series on Aging Aircraft

IULSAA

27 – 29 November 2019
Department of Aerospace Engineering,
Indian Institute of Science,
Bangalore, India

PREFACE

The Department of Aerospace Engineering at the Indian Institute of Science in Bangalore will host a 3 - day seminar like series of lectures (LS) on Aging Aircraft in its department premises on 27 - 29 November 2019. The program will consist of 17 to 20 presentations on various technical aspects surrounding the subject by a distinguished panel of national and international lecturers. The subject is also of interest to the Indian National Academy of Engineering (INAE) in view of its criticality to both strategic and civil aviation sectors and the advanced engineering & technologies involved. Partial financial support is provided by the Indo-US Science and Technology Forum (IUSSTF), Indian National Academy of Engineering and Office of Naval Research - Global, Singapore.

The proposed lecture series will be designed to provide regulatory personnel, fleet operators, managers, military commanders, designers and industry personnel responsible for upgrading the capabilities and safety of their fleets, maintenance personnel at air logistics centres and depots, and specialists involved with aircraft design, insight into issues involved in ageing aircraft and their impact on safety and economic burden due to higher cost of maintenance, repair and replacement. It will help them in making tactical adjustments to better manage their aging fleets in terms of capacity and maintenance costs, and in the case of military aircraft their operational readiness in a changing environment also.

The attendance to this workshop will only be through Invitation and will be limited to 100 - 125 persons. Invitations will be sent to stake holders in the aviation community, in both civil and military sectors.

The term Aging Aircraft suddenly entered our lexicon in 1988 when a commercial jet aircraft operating in the United States suffered an in-flight structural failure. Though a major catastrophe was averted and almost everyone on board survived, the ill-fated aircraft's structural integrity was found to be severely degraded due to fatigue and corrosion. The aircraft was operating well beyond its manufacturer-suggested economic life of 20 years, like many aircraft in present day service are. However, it must be emphasized that current regulations offer adequate protection to ensure that even if an aircraft has reached or exceeded superannuation it would be airworthy but only if structural degradation like what was found in the ill-fated aircraft is absent. Post failure examination of the subject aircraft and subsequent analyses that were conducted revealed that 60% of the jet transport commercial fleet worldwide was at risk due to the same kind of failure. Almost simultaneously, the United States Air Force (USAF) came across a disturbing pattern of structural degradation occurring in one of their older models, which concern was exacerbated a short time later by concerns about the safety and integrity of other critical subsystems. Although there are several other reasons for developing awareness among the community in India about the challenges involved in operating aging aircraft, the unacceptably high threat that could be posed to the nation's transportation infrastructure by aging aircraft is sufficient motivation for conducting the LS.

ABOUT IISc, BANGALORE

The Department of Aeronautical Engineering was started in December 1942. Thus, after the Department of Electrical Technology, the Department of Aeronautical Engineering is the oldest engineering department at the Institute. The services of Dr. V M Ghatage, one of the few trained aeronautical engineers in the country at that time and who was working in HAL, were lent to the Institute during 1942-- -1947. He was the head of the department till 1945. During 1945-- -48, Dr. R.G. Harris of the Royal Aircraft Establishment U.K. was professor and Head of the Department. Prof. O G Tietjens was appointed as the Head of the department in 1949 and continued till 1954.

After 1955, induction of foreigners to head, the department was discontinued and one of the professors acted as Head or Chairman of the department. Prof Satish Dhawan was the first Head of the Department when he took over in the year 1955. This heralded a phase of rapid growth of the aerospace science and technology in the country and concomitant emergence of the department as the leader in those areas. Therefore, the year 2018 - 2019 is the Platinum Jubilee year of the creation of the department. The department was renamed as the Department of Aerospace Engineering in the year 1982.

REGISTRATION

The attendance to this workshop is only by invitation. The registration fee for regular delegate is Rs. 5000 only and for students is Rs. 1000 only. The registration fee includes all the Lecture Series lunches, banquet dinner and the Lecture Series notes/handouts. The maximum student delegates will be 25 on a first-cum basis. The registration will open on May 1, 2019 and the registration will positively close on November 1, 2019. The registration fee in the form of check/DD drawn in favour IULSAA should be sent to Prof. S Gopalakrishnan, Department of Aerospace Engineering, Indian Institute of Science, Bangalore 560012

Email: krishnan@iisc.ac.in
https:/www.aero.iisc.ernet.in/users/gopalkrishnan

Delegate can also pay online through NEFT. The details of the account are as follows:

Bank Name: Canara Bank, IISc Bangalore
Account Name: IULSAA
Bank Account number: 0683101034052
IFSC Code:CNRB0000683

After payment, please send the transaction details to Prof. Gopalakrishnan through e-- -mail at krishnan@iisc.ac.in

Website

The www.aero.iisc.ac.in website has been prepared for the Lectu Series. It will be updated regularly.