62nd ANNUAL ISAM CONFERENCE

23-25 NOV 2023

SCIENTIFIC PROGRAMME

AEROSPACE MEDICINE

STRENGTH SUPPORT SOLUTIONS

Institute of Aerospace Medicine, Indian Air Force
Bangalore - 560017
Day 1: 23 Nov 23 (Thursday)

Registration of Delegates (0800 h onwards)

Scientific Session 1: Military Medicine: New Horizons & Challenges (0845 - 1000 h)
Chairpersons: AVM Shankar S, Gp Capt Rahul Pipriya (Retd)
Navigating the World of Aviation Dentistry: New Horizons & Challenges
Air Cmde M Panwar VSM
Social Media Engagement and Well-being Among Military Aviators
Lt Col Sirhari Iyer
A Case Study on Rapid Action Medical Team Deployment in Northern Part of West Bengal in a Military Exercise
Wg Cdr Suraj Giri
Thromboembolic Disorder in High Altitude Area
Flt Lt Hardik Sahi
Accelerated Rehabilitation after Anterior Cruciate Ligament Reconstruction – Blood Flow Restriction, Normobaric Hypoxia vs Standard Exercise Therapy: A Protocol for Randomized Study
Wg Cdr Anjan Prabhakara

Scientific Session 2: Field Experience: Mixing Science and Administration (0845 - 1000 h)
Chairpersons: Surg Capt PD Ayengar, Col Saurabh Bhardwaj
A Field Study to Evaluate Need for Re-design of Flying Overalls for Female Fighter Pilots
Lt Col Urmimala Bhattacharya
Ejection Procedure Simulator Training at 2AMTC - A Retrospective Analysis of Training Impacted to Fit Cadets and Aircrew
Wg Cdr Omesh Nath
Incidence of Physical Symptoms & Disorientation in Apache 64E Aircrew
Wg Cdr Sushree Sangita Khatau (Retd)
Poland Syndrome in a Civil aircrew: Aeromedical Decision Dilemma
Sqn Ldr Anubhav Upadhyay
Lessons Learnt from the USAF During a Joint Exercise at a Transport Base of the IAF
Sqn Ldr Mohin Sakre

Tea: 1000 - 1030 h

Plenary Session (AVM Srinagesh Auditorium): 1100 h onwards
Air Marshal Subroto Mukerjee Memorial Oration (1210 h)
Playing International Sports for two decades – What it takes!
by Padma Shri Dr Syed Mujtaba Hussain Kirmani
Chairperson: Lt Gen Daljit Singh AVSM VSM, DGAFMS

Lunch: 1300 – 1400 h

Scientific Session 3: Cut-Off Point: Science behind Crew-Cockpit- Compatibility (1400 - 1500 h)
Chairpersons: Gp Capt YS Dahiya, Col S Venkatesh
Comparison of 3D Laser Scanning Anthropometric Technique with Conventional Direct Method for Head and Facial Parameters
Wg Cdr V Raghunandan
Airc rew Selection for an Advanced Fighter Jet - An Anthropometric Standpoint
Wg Cdr Biplab Bhowmick
Bayesian Instrument for Spinal Disability (Bis) - A Predictive Model for Airc rew Flying Fitness
Gp Capt P Biswal
To Be Seated or Not - Maximum Permissible Sitting Height for Garud Microlite Aircraft
Wg Cdr Avinash BK

Scientific Session 4: Aeromedical Stressors: Understanding the Core Issue (1400 - 1500 h)
Chairpersons: Gp Capt PC Ghosh (Retd), Gp Capt P Rastogi
Combined Altitude Depleted Oxygen vis-à-vis Hypobaric Hypoxia: Efficacy in Hypoxia Indoctrination
Flt Lt Sanjay P
Incidence of Ottic Barotrauma during Decompression Test in Indian Armed Forces between 2019-2022
Sqn Ldr Avishek Sharma
Aeromedical Aspects in a Canopy Burst Incident - A Case Report
Sqn Ldr HS Harshith
Study of Combat Aircraft Cabin Pressurization and Occupant Physiology During Cabin Air Supply Failure
A Sathiyaseelan

Scientific Session 5: Space Medicine: When Man Matters (1500 - 1600 h)
Chairpersons: Air Cmde Vipin Sharma, Gp Capt P Biswal
Space and Entry Motion Sickness in Short Duration Space flight: Challenges and Way Forward for India’s Maiden Human Spaceflight Mission - Wg Cdr Polash Sannigrahi
Design, Development, and Fabrication of a Comprehensive Health Care Kit for Indian Astronauts
Dr Ratnesh Singh Kanwar Sc ‘F’
Blood Clot in Spaceflight could be Catastrophic: Requisite for Risk Assessment and Countermeasures - Dr. Ilt Garg Sc ‘E’
Enhancing Exploration Platforms and Analog Definition: The Future of Commercial Spaceflight (online)
Dr Emmanuel Urquie ta

Scientific Session 6: Aviation Physiology: Back to Basics (1500 - 1600 h)
Chairpersons: Maj Gen Vanamalini Tewari, Gp Capt HMK Murthy
Head-up Tilt Test in Cases of Unexplained Syncope
Maj Savina O George
A Comparative Study of Ultricural Function Between Healthy Aircrew and Groundcrew Using Subjective Visual Vertical
Surg Lt Cdr Karthikeyan S
Prolonged Stay at HA & its Effect on Persistence of High BP
Lt Col Srinivasa AB
A Comparative Study to Evaluate Aerobic and Anaerobic Capacity in Mild Anaemic Individuals (as per WHO criteria) with their Healthy Counterparts
Wg Cdr Ashwini Kumar

Society Banquet at Sterlings Mac Hotel (1930 h onwards)
### Day 2: 24 Nov 23 (Friday)

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| 0830 - 0930 h | Scientific Session 7: G Tolerance: From Strength (Training) to Support (Operations) | Chairpersons: **AVM Anupam Agarwal VSM, Gp Capt MS Nataraja**
Changes in +Gz Endurance after a G warm-up Maneuver and the Duration for which this Change in +Gz Endurance Persists
Wg Cdr Sneha Dinakar
Postural Dysautonomia in Response to Head-Up Tilt in a Military Pilot Aspirant - Aeromedical Considerations
Sqn Ldr Gaurab Ghosh
Study of Heart Rate Changes and Relaxed +Gz Tolerance Levels in Correlation with Different BMI Levels on Exposure toGOR Profile and ROR Profile in DFS Among IAF Aircrrew
Sqn Ldr SP Singh
Phase Angle from Bioelectrical Impedance Analysis Correlates with Gravitational Blood Pooling in the Human Leg
Dr Munna Khan |
| 0930 - 1030 h | Scientific Session 8: Fitness for Flying: Aeromedical Decision Making | Chairpersons: **AVM Tanmoy Roy VSM, Air Cmde P Ghana VSM**
Liver Histopathology in Healthy Aircrrew - An Insight into Aetiopathology of Incidental Abnormalities Found During Routine Medical Examinations
Wg Cdr Neha Gupta
Gender Based Difference in Computerized Dynamic Visual Acuity
Sqn Ldr Anitha T
A Study of Platewise Probability of Errors While Reading 38 Plate Ishihara Chart Among Colour Normal Individuals
Wg Cdr Sridhara Reddy
A Case Report on Obstructive Sleep Apnea (OSA) in a Non-Obese Aviator with Resistant Hypertension: Screening Policies and Future Recommendations
Wg Cdr Snehangsh Dash |

**AVM MM Srinagesh Memorial Oration**

**Patient Safety: Drawing Lessons from Aviation Safety** by Air Marshal (Dr) Pawan Kapoor AVSM VSM & Bar (Retd)
Chairperson: **Air Marshal Rajesh Vaidya VSM, DGMS (Air)**

| 1030 – 1100 h | Tea |
| 1100 - 1200 h | JHF Manekshaw Panel |
‘OPTRAM – The Evolution of a Revolution’ by AVM (Dr) Deepak Gaur AVSM (Retd)
‘Psychological Warfare of China’ by Prof Srikanth Kondapalli

**Chairpersons: Air Marshal CK Ranjan AVSM VSM (Retd), AVM MS Sridhar**

| 1200 - 1300 h | Scientific Session 9: Cognitive Integration in Flying Ops |
| Chairpersons: **Surg R Adm R Ravi, Gp Capt Ranjan Sarkar** | Scientific Session 10: Residents in Aerospace Medicine (RAM) Session |
| **Effect of Sleep Inertia post a Short Nap on Cognition and Psychomotor Task**
Lt Col Binu Sekhar M | Chairpersons: **Gp Capt SS Mohapatra, Wg Cdr Ajay Kumar** |
| **Effect of Noise on Visuo-spatial Working Memory: An Aviation Perspective**
Sqn Ldr Devdeep Ghosh | **Comparison of Range of Movements of Spine vis-à-vis IAM-EMP Protocol: A Retrospective Analysis**
Dr Ruchika Rana |
| **Assessing and Predicting Mental Workload using Affective Computing: An Exploratory Conceptual Approach**
Mr Sibin Raj K Sc ‘C’ | **MTHFR Gene Mutation and Risk of Venous Thrombosis: Aeromedical Decision Making**
Major Jeya Karthik |
| **Decoding Air Sickness: Predictive Factors and Psychological Insights**
Ms Sarjia Roy Grandhi, Sc Asst | **A Case Study of Non-specific Tinnitus in a Helicopter Pilot: Aeromedical Perspective**
Dr Preethi R |
| **A Retrospective Study on the Effect of Hyperbaric Oxygen Therapy on Hearing Outcome in Idiopathic Sudden Sensorineural Hearing Loss**
Sqn Ldr BN Bhowmick | **A Retrospective Study on the Effect of Hyperbaric Oxygen Therapy on Hearing Outcome in Idiopathic Sudden Sensorineural Hearing Loss**
Sqn Ldr BN Bhowmick |

**Lunch: 1300 - 1400 h**

| 1400 - 1500 h | Scientific Session 11: Commercial Aviation: Carrying the ‘Health’ Along |
| Chairpersons: **AVM Pankaj Tyagi VSM (Retd), Gp Capt MPS Marwaha** | Scientific Session 12: Closed Door Session 1 - Human Factors in Aircraft Accident |
| **Prediction of Non-Communicable Disease (NCD) Among Civil Pilots Based on Lifestyles**
Gp Capt Rahul Pipraiya (Retd) | Chairpersons: **Air Cmde Rajesh Kumar, Gp Capt Mona Daihya** |
| **Vitamin D Deficiency in Commercial Airline Pilots**
Dr Swathy Kuppala | **Human Factors in Aircraft Accident**
Air Cmde Sharad Pasricha |
| **Self-Medication in Civil Aviation**
Sqn Ldr E Srihari | **Subjective Assessment of Sleep Pattern among Aircrew**
Gp Capt MS Nataraja |
| **In-Flight Thrombosis: Risks and Prevention**
Dr Swati Srivastava Sc ‘E’ | **Integrating Human Factors into Investigation of a Fatal Aircraft Accident - Lessons Learnt**
Sqn Ldr Gaurab Ghosh |
(1500 - 1600 h)

Chairpersons: Maj Gen VV Joshi VSM, Wg Cdr MD Sharma

Assessment of Mass Properties of an Indigenous Fighter Helmet: IAM Experience
Wg Cdr BN Vasudev
Integration Testing and Flight Evaluation of ILS (Tejas)
Dr AA Bhat
Man Rating of Normobaric Hypoxia Enclosure at IAM: Our Experience in Pilot Study
Gp Capt Ranjan Sarkar
Application of Moment of Inertia in Helmet Mass Property Assessment for Improving Aviation Safety
Mr Sabyasachi Nayak

Scientific Session 14: Closed Door Session 2 - Mental Health and Psychological Support (1500 - 1600 h)

Chairpersons: AVM Kaushik Chatterjee, Brig Amit Khurana

Psychological Stress Among the Service Personnel at Andaman and Nicobar Command: A Cross-sectional Survey
Gp Capt SS Mohapatra
Post Accident Support System (PASS): Supporting Aircrew to Safely Return to Cockpit
Gp Capt P Biswal
Post Accident Support System (PASS): Implementation: A Field Experience
Gp Capt P Rastogi
Post Accident Support System (PASS): Supporting Aircrew Safety Back into the Cockpit – A New Perspective
Dr Sowgandhi Chaturvedula Sc ‘F’

ISAM General Body Meeting (1615 h) (Srinagesh Auditorium)

ISAM Fellow’s Night (for Fellows only) at Vayu Vihar Officer’s Mess, Challaghatta (1915 h onwards)

Day 3: 25 Nov 23 (Saturday)

SMO’s Conference (on AFNET platform): (0830 – 1030 h) DGCA’s Workshop for Medical Examiners (0915 -1430 h)

Tea: 1030 - 1100 h

Continuing Medical Education: (1100 - 1300 h)

Common Errors in Medical Board Procedures
Gp Capt Pishu Renjhen
Sample Collection and Disposal for DNA Profiling Using FTA card
Wg Cdr KK Singh
Disposal of Fatal Case Document (FCD) – A Practical Guide for Medical Officer
Gp Capt MB Suja
Sleep Alertness Management in Aircrew in the IAF
Wg Cdr V Raghunandan

Poster Sessions (Anteroom)

Session 1 (23 Nov 23 1400 - 1600 h)

• Cardiovascular Deconditioning on Orthostatic Challenge After Exposure to Exposure to Microgravity Simulation in the form of Dry Supine Thermoneutral Water Immersion for Eight Hours Among Sports Personnel: Endurance trained vs Resistance Trained Participants - Col N Subhans Reddy
• Screening of Haemoglobinopathies using HPLC among Candidates aspiring for Induction in Armed Forces at an IAF Boarding Centre: A Retrospective Analysis – Wg Cdr Smita Rani Borgohain
• Photo Dermatitis and High UV Index in Jorhat (Northeast India) due to Single Time Zone – A Study - Wg Cdr Chetan Patil
• Lab in Space: Point of Care Testing for Astronauts in Space Missions of Emerging Economies – Dr Seshadri Das
• Renewing the Understanding of Aviation and Aerospace Medicine with Substitutive Physiological Adaptations to Weightlessness: Beyond Boundaries of Earth Environments – Dr Jayashri O Sharma
• Suicide Prevalence & Cause Analysis in One of the Commands of IAF – Wg Cdr Yijay S

Session 2 (23 Nov 23 1500 - 1600 h)

• Same Diagnosis, Different Story: First case of Holme’s Adie Syndrome in Current Epidemic of Viral Conjunctivitis – Dr Agnima Bhalla
• MI - Air Evacuation - A Case Report – San Ldr Anurag Singh
• Comparison of Outcome of Simulated Ejections Among Trained and Under-trainee Aircrew During the Training on Ejection Procedure Simulator – Gp Capt HMK Murthy
• Report on Subject Matter Expert Exchange (SMEE) to Republic of Korea – Sqn Ldr B Nanda Kishore
• Aerodentalia – A Case Report – Wg Cdr Jaipreet Singh Juneja

Session 3 (23 Nov 23 0830 - 0930 h)

• Sports Injuries in Aircrew: Prevention – Gp Capt Pallavi Goswami
• Recurrent Bilateral Nasal Polyp - A Case Report – Lt Col TS Rana
• Normal Digital Contribution to grip Strength Assessed by Digital Hand Grip Dynamometer – Wg Cdr V Raghunandan
• Accidental Exposure to Cyanide in an Occupational Setting: A Case Report – Sqn Ldr Abhay Singh Tomar
• Retrospective Audit of Medical Evacuations in the IAF in Recent Past – Wg Cdr V Raghunandan
• Obstynological Challenges in Prolonged Spaceflight Assessing and Addressing Vestibular and Auditory Changes in Zero Gravity – Wg Cdr Sanjay Kumar

Session 4 (23 Nov 23 1200 - 1300 h)

• To Study the Changes in Pulmonary Volumes, Flow Rates and Capacities Following 12 hours Dry Supine Immersion – Maj Hemant K A
• Unexplained Physiological Event: A Case Report – Lt Col Shrihrat Iyer
• Outbreak of Food Poisoning at Military Establishment – Wg Cdr Aniket Kulkarni
• Space Medicine: Pharmacokinetic, Pharmacodynamic and Formulation perspectives to Provide Safe and Effective therapy – Dr Phil J Mehta
• Android Phone Based Audiometry for screening of Hearing Loss – Wg Cdr Sunil Mathew
• KAP of Armed Forces Personnel in an Air Force Station regarding Obesity – Sqn Ldr A Shukla

Session 5 (23 Nov 23 1345 - 1445 h)

• Adult onset Myopia – A Case Study of Flight Cadets in Indian Air Force – Sqn Ldr Sourav Gain
• A Case of Guillain Barre Syndrome in a Fighter Pilot: Aeromedical Decision Making – Surj LCol Shreem Deepthi
• Psychiatric Arctic in Military Flying: Aeromedical Concerns & Disposal – Sqn Ldr BN Bhowmick
• Tele-mental Health Care: An Effective Alternative Way to Psychological Well-being for Aircrew in IAF – Dr Akanksha Gautam Sc ‘E’

Organising Secretary: Gp Capt SS Mohapatra (+91 9531938804)
Assistant Organising Secretaries: Wg Cdr Biplab Bhowmick (+91 9482609151) and Wg Cdr BN Vasudev (+91 9449764568)