SCIENTIFIC PROGRAMME

65TH ANNUAL SCIENTIFIC CONFERENCE OF ISAM

'ONE AIRSPACE - ONE MISSION: AEROMEDICAL SUPPORT FROM RUNWAY TO ORBIT'

Time (Hr)	Day 1: 26 NOV 26 (THURSDAY)	
	Srinagesh Auditorium	**Engineer Auditorium**
0830 – 0930 (THU)	**Scientific Session 1:** ***Simulating Space on Earth: The Human Physiological Response to Altered Gravity*** **Chairperson**: Air Cmde Aditya Sapra, Surg Cmde V Kansal • When Gravity Fades: Differential Neuromuscular responses of predominantly Type I and relatively Type II rich muscles in microgravity. **Lt Col Manu N** • Cardiovascular and Carotid Blood Flow Responses in Healthy Females during Six hours of Simulated Microgravity using Dry Supine Immersion. **Sqn Ldr Krishnaveni M** • Stress Assessment using EEG-Based Biomarkers under Analog Microgravity Environment. **Ms Shazma MA** • Assessment of Changes in Respiratory Parameters in Simulated Microgravity under Hypobaric Hypoxic condition. **Wg Cdr Avishek Sharma**	**Scientific Session 2:** ***From Immersion to Orbit: Advancing Human Spaceflight Medicine*** **Chairperson**: Surg R Adm R Ravi (Retd), Gp Capt DK Khukhar • Neuro-Ophthalmic Responses to simulated Microgravity: A 6-Hour Dry Supine Immersion Study in Healthy females. **Dr Sneha Kahalekar** • Changes in Anthropometric Parameters after exposure to 12 Hrs of Simulated Microgravity in Dry Supine Immersion. **Surg Cdr Vinod B** • Gender Differences in the Acute Pulmonary Response to Six Hours of Dry Supine Immersion: A within Subject Spirometric Study. **Wg Cdr Vinod Raut** • Development and Validation of ORBIT and ANCHOR: Bridging Evidence based Medicine gaps from Runway to the second Orbit. **Mr Vivek Singh Malik**

0930 – 0945 (THU)	***A Video Presentation – 'Dare to Dream'*** **The Life and Legacy of Dr. Peggy Whitson**	
0945 - 1030 (THU)	**AVM MM Srinagesh Memorial Oration (Venue: Srinagesh Auditorium)** **Orator :** AVM Anupam Agarwal, VSM (Retd) **Topic : "***I had 3640 credits…3165 used, tales that need to be told"* **Chairperson**: Air Mshl Vivek Hande, AVSM, VSM, DGMS (Air)	
1030 - 1100	**Tea at 'The Court'**	
1100 - 1200 (THU)	**JHF Manekshaw Panel (Venue: Srinagesh Auditorium)** • *'Inflight Medical Response - Changing Paradigms of Medical Management'* by **Wg Cdr Surender Sodhi (Retd)** • '*Supporting the Human Element: ICAO and Civil Aviation Medicine' by* **Col KN Rao (Retd)** **Chairperson**: Air Cmde NK Tripathy, Commandant, IAM IAF	
	Srinagesh Auditorium	**Engineer Auditorium**
1200 - 1300 (THU)	**Panel Discussion** ***Women in Combat Flying*: *A Decade of Experience*** **Moderator**: Gp Capt Stuti Mishra **Panelists** • Wg Cdr Parul Goel • Wg Cdr Sneha Dinakar • Wg Cdr Ankur Pal • Sqn Ldr Bhawana Kanth • Sqn Ldr Priya Sharma	**Scientific Session 3:** ***Fitness to Fly: Aeromedical Challenges & Decision Making*** **Chairpersons:** Maj Gen VV Joshi, VSM (Retd); Gp Capt P Rastogi • Legs Before Wings: Lower Limb girth as a Predictor of inherent +Gz Tolerance in Fighter Aircrew. **Gp Capt Biplab Bhowmick** • Cervicalgia and Lumbago in Aircrew from Transport and Helicopter Streams: A Questionnaire-Based Survey. **Lt Col Sunil Kumar** • Prevalence of Polycythemia among Commercial Pilots undergoing Medical Examination at an IAF Aeromedical Centre. **Maj Jeya Karthik R** • Aeromedical Decision making in cases of Non-Suicidal Self-Injury. **Wg Cdr Sushree (Retd)**

1300 - 1400 (THU)	**Scientific Session 4:** ***Mitigating Occupational Risk: Ejection to Environmental Extremes*** **Chairpersons:** AVM SGS Datta, Gp Capt P Biswal • Impact of Fighter Index of Thermal Stress (FITS) Restrictions in Basic Trainer Aircraft Towards Prevention of Heat Stress in Aircrew. **Col Srinivasa B** • Abdominal Pain in an Aviator with Post Nissen Fundoplication during G-Force Stress. **Maj Manu Murali** • Field of View of Two Aircrew Helmets: Operational Significance and Implications for Indigenous helmet design. **Wg Cdr V Raghunandan** • Silent Strength: A KAP Study on Hearing Protection Devices Usage among Military Aircraft Maintenance Personnel. **Sqn Ldr Shruthi Chandran**	**Scientific Session 5: Closed Door** ***Cockpit Resource Management & Crew Performance Optimization*** **Moderator**: Air Cmde Manas Saha, VSM; Gp Capt Ranjan Sarkar • Beyond the Black Box: Human Factors in two Aircraft Accidents. **Gp Capt SK Saini** • CRM: Preparing the Human Element. **Lt Col Virendra Singh, SM** • OPTRAM: Enhancing Operational Readiness. **Gp Capt MS Nataraja**
1200 - 1400 (THU)	**Poster Session: 1** • Atypical presentation of Lyme disease as an isolated case of Erythema Migrans in Aircrew: An Approach to Aeromedical disposition – A case report. **Sqn Ldr Biswajit Bhowmick** • Modeling Microgravity-Induced Changes in First-line Anti-Tuberculosis Drug Crystallization, Stability, and Dissolution: An Integrated Clinostat-based Experimental Framework. **Mr Manish Rawal** • Aeromedical Decision- Making in Trained aircrew with Apical HCM. **Wg Cdr Y Dinker** • Public Health beyond Earth: From Astronaut Medicine to Space population Health. **Sqn Ldr Mohin Sakre**	**Poster Session: 2** • Evaluation of Cardiovascular Variabilites during Simulated Push Pull Maneuver of an Aircraft Pilot. **Mr Munna Khan** • Amoebic Liver Abscess in a Young Military Helicopter Pilot: Aeromedical Challenges in Temporary Flight Down Grading and Return to Flying duties. **Wg Cdr Sourav Gain** • Should Emerging Wake-Promoting and Sleep-Promoting agents replace Modafinil and Zolpidem in Military Aviation? An Evidence-Based Narrative Review. **Sqn Ldr Ruchika Rana** • 'Postpartum Lower Urinary tract dysfunction' in Aircrew: Balancing Symptom Control, Pharmacotherapy and Flight Safety. **Sqn Ldr Gaurav Garg**

	• 'Can a Neural Network Trained on In-vitro Microsomal Data Accurately Predict in-vivo Hepatic Clearance of 50 FDA-Approved drugs?'. **Wg Cdr Pramod Thombre** • Injury Patterns and Anatomical-System overlap in Fatal Military Helicopter Crashes: A Clinicopathological Case series. **Wg Cdr Mayuri Verma** • Disaster & Psychiatry. **Wg Cdr CS Bharath** • Cholesterol Embolisation Syndrome: An Unrecognized Entity. **Wg Cdr Vikrant** • Beyond the Ordinary: A Rare Encounter with Adenolipoleiomyoma polyp of the Uterus. **Sqn Ldr Kshitij Srivastav**	• The Missing Link in the Sky: Challenges of Paediatric Aeromedical evacuation during HADR Operations in India. **Capt Naveen Kanth** • Asymptomatic Pneumonic Consolidation: Aeromedical Decision Making. **Flt Lt Shivika** • Development and Validation of a Novel Cockpit Assessment tool to identify Corresponding point aligning with Ideal Eye Position on Ejection Seat and assess Over the Nose Vision. **Wg Cdr Devdeep Ghosh** • Aeromedical Dilemma- In aborted take- off with nose wheel Collapse. **Sqn Ldr Lohith Tejasvi**
1400 - 1445	**Lunch at 'The Court'**	
1445 - 1545 (THU)	**Scientific Session 6: Symposium - *Back to the Skies, Aeromedical Decision Making*** **Moderator**: AVM Sachin S Shouche, Air Cmde SS Dalal • *Every Aircrew Counts*: Need for Conservation of Trained Aircrew. **Air Cmde Girish Dantale** • *One Diagnosis, Many Decisions*: Risk Assessment and Aeromedical Decision Making. **Wg Cdr Harshavardhan G** • Field Upgradations: Pathway to Early Return to cockpit **Wg Cdr Avinash BK** • Aeromedical Evaluation and Disposals: Current policies and practices. **Gp Capt Innayat Kabir**	**Scientific Session 7: *Body Metrics to G-Metrics: Translating Anthropometry into Aeromedical Insights*** **Chairperson**: Air Cmde Vipin Sharma (Retd), Gp Capt Nivedita Jena • Comparison of Selected Aircrew Anthropometric Parameters measured by 3D Digital Laser Vitus Whole Body Laser Scanner and Manual Anthropometer in females. **Sqn Ldr Nikeata Jha** • Prediction of Manual Anthropometry from 3D Laser Body Scans using Deep Learning and feature extraction. **Dr Sabyasachi** • Study Utility of markers for Examining accuracy of Anthropometric Measurements Using Vitus 3-D Anthroscan. **Sqn Ldr Uday Bansal** • Pulling Gs, Paying the Price: Aeromedical Disposition of Acceleration-induced Cephalea. **Sqn Ldr Neha Rao**

1545 - 1645 (THU)	**Scientific Session 8: Symposium** ***Mental Health in Civil Aviation: Challenges to Solutions*** **Moderators**: AVM N Taneja, AVSM, VSM (Retd), Col Rohit Kochhar (Retd) • When Pilots need a Pilot: The Power of Peer Support. **Dr. Shagufta Hasnain** • Psychoactive Substance testing in Aviation: From Screening to Confirmation. **Sqn Ldr Kshitij Srivastava** • Role of Mental Health and Psychoactive Substance Screening in Post-Aircraft Accident at Airport. **Sqn Ldr E Srihari (Retd)** • Beyond the Positive: Role of MRO. **Dr Punita Masrani**	**Scientific Session 9: *Research by the Young Minds (RAM - I)*** **Chairpersons**: AVM Naresh Saidha, Gp Capt MPS Marwaha • Assessment of Operational Performance of Currently issued Flying Boots among aircrew: A Questionnaire-Based Study. **Sqn Ldr Ganesh Dev** • A Retrospective Comparative Study of Initial Medical Examination Findings among Indian Air Force Candidates During 2015-2019 and 2020 - 2026. **Dr Abinesh Raj** • To Study the Prevalence of Vestibular Tolerance to Coriolis Stimulation at 15 RPM in Ab-Initio Pilots. **Maj Kishore** • Descent Rate Dependent Eustachian Tube Dysfunction: A Case Study. **Dr Satyajeet Singh**
1445 - 1645 (THU)	**Poster Session 3:** • Against Altitude and Darkness: Challenges in Aeromedical Evacuation**. Flt Lt Varsha Chhillar** • Implementation Outcomes of Teacher - Led Vision Screening in School Children: A Community Based Cross-sectional Study. **Wg Cdr Shabreen Sultana** • CBRNe Warfare and its Aeromedical Deliberations: Proposed CBRNe Aircrew Aeromedical Continuum (CAAC). **Flt Lt Aman Arya** • A Study of Blood and Urine Levels of Anti-Diabetic Medications as an Indicator of Compliance to Drugs among Known Diabetic Patients. **Maj Suryakiran** • From the Clinic to the Cockpit and Beyond; A Cross-sectional Assessment of Awareness, Exposure and Preparedness Regarding Aviation and Space medicine among Medical Doctors. **Mr Sambhav Singh**	**Poster Session 4:** • Comparative Analysis of Body Composition between Overweight and Normal Weight Flight Cadets using Bioelectrical Impedence Analysis. **Surg Cdr Harsha MR** • OPTRAM Diaries: Extravagant manifestation of G- Measles. **Sqn Ldr Ketan Deshpande** • The Evacuation of Infants and Children with Congenital Cyanotic Heart Disease by Air. **Brig Navreet Singh, VSM (Retd)** • Artificial Intelligence in Medical Research: Accelerating Discovery While Safeguarding Integrity. **Wg Cdr Neha Gupta** • Human Engineering Solutions to Enhance Safety and Efficiency in Aircraft Maintenance Operations. **Wg Cdr Raghunandan**

	• Bridging the Aerospace Medicine Gap: A Cross-Sectional Assessment of Knowledge, Exposure and Preparedness among undergraduate Medical Students. **Ms Christina** • Evaluating C-130 J Aircraft for Modern Aeromedical System. **Gp Capt MPS Marwaha**	• Small Passengers, New Challenges: Paediatric Operational Space Medicine for Child-Inclusive Space Missions. **Capt Naveen Kanth** • Aerospace Medicine Perspective from an AN-32 Crash, COI Findings: Human Factors and Medical Analysis. **Sqn Ldr Biswajit Bhowmick** • Assessment of Flying Fitness after Ischemic and Haemorrhagic Stroke: Factors Needing Consideration. **Gp Capt Jitesh Goyal**
1915	**Conference Dinner at Hotel Royal Orchid**	
Day 2: 27 Nov 26 (FRIDAY)		
0900 – 1105	**Plenary Session (Venue: Srinagesh Auditorium)**	
0900 – 0946 (FRI)	• Audio-Visual Presentation on ISAM • Opening Address by Commandant, IAM • Presidential Address by DGMS (Air) • Address by the CAS • Release of Conference e-Souvenir, Presentation of Awards and Trophies by the CAS	
0947 - 1028 (FRI)	**Air Marshal Subroto Mukerjee Memorial Oration** **Orator :** Shri APVS Prasad, Chief Executive, CEMILAC **Topic :** '*Certification Challenges in Autonomous Aircraft'* **Chairperson:** Air Mshl Sandeep Thareja, SM, VSM & Bar, DGAFMS	
1029 - 1105 (FRI)	**Cosmonaut Rakesh Sharma Lecture Series** **Speaker**: Mr Pawan Chandana, CEO Skyroot Aerospace **Topic**: '*Building Deep Technology Future from India to the World: Lessons from the Skyroot Journey'* **Chairperson**: Wg Cdr Rakesh Sharma, AC (Retd)	
1105 - 1145	**Tea at 'The Court'**	

	Srinagesh Auditorium	Engineer Auditorium
1145 – 1245 (FRI)	**Scientific Session 10:** ***Seeing, Sensing, Surviving: The Science of Aircrew Operational Readiness*** **Chairpersons**: Maj Gen Amul Kapoor, VSM, Gp Capt Murtaza • *VYOM-I*: An Integrated, Field-Deployable Aeromedical Solution for Vestibular Assessment, Rehabilitation and Illusion-Based Training. **Wg Cdr Ajay Kumar** • Assessment of Semicircular Canal Function as a predictor of Motion Sickness Susceptibility using Disorientation simulator in Military Flying. **Sqn Ldr Ketan Deshpande** • Mental Health Support and Operational Readiness - Exploring Aircrew' Perceptions of Mental Health Issues: A Qualitative Research Approach among IAF Pilots. **Dr Akansha** • Study of Contrast Sensitivity and Stereo-acuity at Different Simulated Altitudes and their Changes upon Administration of Supplemental Oxygen. **Sqn Ldr Gaurab Ghosh**	**Scientific Session 11:** ***Research by the Young Minds (RAM - II)*** **Chairperson**: Air Cmde Rajesh Kumar, Col Naveen Chaudhary • Is the Time of Useful Consciousness Different Based on the Protocols Used to reach 25000 Feet MSL? **Maj Pooja Raj** • A Retrospective Analysis of Acute Hypoxia Symptoms during the Hypoxia Indoctrination Run. **Maj Ashwini Kumar** • Knowledge, Attitude, and Practice of Military Aircrew towards Physical Conditioning: A Questionnaire-Based Cross-Sectional Study. **Surg Lt Cdr Abhilash P T** • Association Between Innate G-Tolerance & G-LOC in High G Performance Aircraft Pilots: A Retrospective Analysis. **Sqn Ldr Arun Mathew**
1145 – 1245 (FRI)	**Poster Session 5** • Indigenous Human Factors Integration Framework for Indian Military Aviation. **Mr Madhusudhan Pal** • Artificial Intelligence-assisted Chest Radiography in High-Altitude Pulmonary Edema: A Potential Decision-Support Tool for Resource-Limited Extreme Environments. **Sqn Ldr Kailaash B** • Vestibular Schwannoma in Civil Pilots: A Descriptive Case Series and Proposed Risk-Based Aeromedical Framework for Fitness to Fly. **Wg Cdr Abhishek Kumar** • Simultaneous Bilateral Femoral Shaft Fractures in a Military Aviator following Aircraft Ejection: Case Report, Literature Review & Seven Year Follow Up. **Gp Capt Pankaj Rai** • Special Medical Board for Initial Flying Medicals for Army Aviation Pilot Applicants at MH Devlali. **Lt Col KK Dalapati** . The Prevalence of Tolerance in Ab-Initio Pilots to Coriolis Exposure at 25 rpm. **Maj Y Sai Chandra**	

1245 - 1345	**Lunch at 'The Court'**	
1345 – 1445 (FRI)	**Panel Discussion** ***Space Analogues - Anugami to Antariksham*** **Moderator**: Gp Capt YS Dahiya **Panellists** • Dr Ch N Sowgandhi Sc 'F' • Gp Capt P Biswal • Gp Capt Angad Pratap • Wg Cdr Polash S • Wg Cdr Divya N (Retd)	**Scientific Session 12: *Innovate, Investigate, Elevate: Aeromedical Research and Operational Readiness*** **Chairperson**: Surg Cmde B Vikas, Col KK Sharma • The Efficacy of Hypoxia Training in Aviation: A Systematic Review of Physiological Adaptations, Symptom Recognition, and Cognitive Performance in Pilots. **Dr Nawaf Almndil** • Assessment of Mental Demand in cockpit among ALH pilots in Day and Night: A Questionnaire Based Study. **Maj K Vigneshwaran** • Visual Adaptation Time on Discontinuation of Gen 2++ and Gen 3 NVG using various light levels. **Lt Col Binu Shekhar M** • Modernizing the Medical Module of the Military Aircrew Personal Survival Pack: An Evidence-Based Narrative Review. **Sqn Ldr Ruchika Rana**
1345 – 1445 (FRI)	**Aerospace Medicine Sandbox - I (Venue: 'The CAR Hall'**) **Moderator:** Wg Cdr HPS Sahota, Lt Col Ashok Warthe • To Study the Physiological Changes and Effect of Intermittent Mild Normobaric Hypoxia Exposure on Acclimation to High Altitude. **Wg Cdr Harshvardhan** • DEU AE Capabilities & Training. **Col (MC,GS) Dr. Mathias Borsch** • Study of Morbidity Patterns and Disability Trends in Indian Civil Aviation Pilots. **Wg Cdr Vijayavardhan** • Doctor, What Do You Do? – The Unseen Clinical Universe of an Airline Medical Officer. **Dr Shagufta Hasnain** • Efficacy of 'Go Pill' and 'No-Go Pill' during Extended Wakefulness - A Comparative Analysis. **Wg Cdr Devdeep Ghosh** • Does Flying Experience affect the Perceived Utility of Operational Training in Aerospace Medicine? - A Retrospective Analysis. **Maj Divyjyoti Sinha**	

1445 - 1545 (FRI)	**Scientific Session 13: Symposium: Design and Development of Indigenous Aircraft: Concept to Cockpit** **Chairperson**: Surg Capt DK Kagti, Lt Col Binu Sekhar • Engineering the Ejection System for the Pilot Safety. **Gp Capt Faiz R Shaikh** • Designing the Software for Indigenous Life Support Systems. **Mr Amrit Roy, Sc 'E'** • Drawing Board to Production Line. **Gp Capt Venugopal (Retd)** • Aeromedical Risk in Human System Integration. **Wg Cdr Anubhav Upadhyay**	**Scientific Session 14: Gen Z to Zero-G** **Chairperson**: Air Cmde Piush Renjhen, Gp Capt Biplab Bhowmick • AKSH (Adaptive Kit for Space Health): A Modular, Reconfigurable Medical Kit for Autonomous Care in Long Duration Spaceflight. **Short Symposium by AFMC UGs** • Artificial Gravity: Rethinking Brain and Balance Adaptation. **Dr Pragnya Prusty** • Systems Thinking in Post Splashdown Crew Recovery: A Human Centric Approach to Integrated Recovery Operations. **Ms Mahi Ajmera** • Training for Crew Autonomy in Human Spaceflight: Implications for Gaganyaan. **Mr Anirudh Srikanth**
1445 – 1545 (FRI)	**Aerospace Medicine Sandbox - II (Venue: 'The CAR Hall')** **Moderator:** Col Saurabh Bhardwaj, Wg Cdr Raghunandan • Type I Diabetes Mellitus in Military Aircrew: Aeromedical Considerations and Deliberations. **Surg Lt Cdr Aswathy Sundaram** • Aeromedical Decision-Making Following Cortical Mastoidectomy with Tympanoplasty in a Military Aircrew. **Maj Akshitha** • A Case of In-Flight Incapacitation in a Commercial Pilot: Approach to Aeromedical Disposition. **Maj G Chaithanyasree** • Aeromedical Decision Making in Cases of Carcinoma in Civil Aircrew. **Dr Ajay Beniwal** • CNS Tuberculoma in Fighter Pilot: Aeromedical Decision Making. **Sqn Ldr Rahul Tiwari** • Case Report: Hemifacial Spasm in Aircrew – an Approach to Aeromedical Disposition. **Surg Lt Cdr Manish Kharub**	
1545 - 1615	**TEA at 'The Court'**	
1615 – 1715 (FRI)	**ISAM General Body Meeting**	