



ISAM NEWSLETTER 2022

FROM THE PRESIDENT'S DESK

It gives me immense pleasure, as I lead the most dynamic professional Society, the Indian Society of Aerospace Medicine (ISAM), for almost two years now. During the period, I have seen not only the contribution of the Society to support aerospace operations but the professional growth of the Society itself.



Tremendous effort has been made by the specialty in optimizing operational aeromedical training. Conduct of one day refresher disorientation training of all fighter aircrew, ejection procedure training on the EPS, hypoxia indoctrination of Combat Free Fall trainees etc. are all testimony to this. The research at IAM has shifted the focus to operational aeromedical research. I am glad that, the specialty continued to excel in the professional domain on bringing out necessary changes in policies considered important to aerospace safety & air operations. The contribution of the members in the challenging Human Space Program for maintenance of the health, periodic evaluation and training of the Astronaut Designates is praiseworthy. The Society has been successful in its endeavors to establish a global presence and the same has been acknowledged by the international community of Aerospace Medicine during ICAM-2022 held at Paris this year.

NMC has recognized both the AMTCs as part of IAM and teaching establishments. Extended and repeat tenures of Aerosp Med Specialists from IA & IN at IAM have already been implemented. Go ahead sanction has been given to increase the number of Aerosp Med Spl in the PE of IAM. I am sure, these developments would help in resolving the issue of post graduate teachership of the specialty.

I convey my sincere gratitude to all the Society members for the support rendered and wish everyone a very Happy 61st Annual Conference of the Society this year.

Jai Hind!





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SALIENT ACTIVITIES OF THE SOCIETY

• **EX-OFFICIO ANNUAL MEMBERSHIP OF AsMA**

Commandant IAM and Secy ISAM were made Ex-Officio annual members of AsMA for academic benefits last year. The same has been renewed for one more year.

• **ADDITIONAL VACANCIES OF AEROSP MED SPL TO DGCA**

Two additional vacancies Gp Capt Aerospace Medicine have been allotted by Ministry of Civil Aviation exclusively for DGCA. Air HQ has taken up a case with MoD through O/o DGAFMS for accretion of 02 additional posts of Gp Capt Aerosp Med over and above the current strength. Draft GSL for the same has been submitted to O/o DGAFMS.



Directorate
General of
Civil
Aviation



In addition, 05 additional vacancies of Aerosp Med Spl for DGCA have been cleared by MoCA. These vacancies will be filled up either by hiring or on contractual basis of ret'd Aerosp Med Spls. This will help in post-retirement career opportunity for Aerosp Med Spls.

• **PILOT PHYSICIAN PROGRAM**

The proposal for reviving Pilot Physical Program in the IAF is underway at Air HQ. The proposal will serve a dual benefit. On one hand, it will provide Aerosp Med Spl the necessary flying experience to render informed solutions to aeromedical issues in-flight. On the other hand, it will encourage and motivate young doctors in IAF to take up Aerosp Med as Specialty of their choice. Seven Medical Officers are proposed to be trained as pilots in all the three streams of flying. The SoC and draft GSL has been taken up for approval of MoD.



• **OPTIMISATION OF OPERATIONAL TRAINING IN AEROSPACE MEDICINE**

The following initiatives have been taken to optimize operational training of aircrew in Aerospace Medicine:-

- Conduct of one day refresher capsule course on DISO simulator for all fighter aircrew has commenced at IAM and both the AMTCs. The objective is to



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expose all the fighter aircrew to disorientation scenario through a day long focused simulator training. This will provide hands on practical training and indoctrination of fighter aircrew on mitigating disorientation in-flight. The one-day duration of the course has been planned to ensure that fighter pilots can be spared from the operational squadrons.

➤ In the current Op deployment of air assets, sparing operational aircrew for regular OPTRAM-F courses for 5 (initial) days / 3 (refresher) days is considered difficult. At the same time, adequate aeromedical training is considered absolutely important for human performance optimization and air-combat readiness. Considering the above, a need was felt to conduct abridged OPTRAM-F courses, by reducing duration of initial OPTRAM-F to three days and refresher course to one day. The abridged courses will focus on currently relevant practical aspects of high G, spatial disorientation and hypoxia training in shortest possible time without compromising quality of training. The abridged OPTRAM courses will help in training of large number of fighter aircrew and clearing backlog of fighter aircrew who have not undergone OPTRAM courses.

- **INDIAN JOURNAL OF AEROSPACE MEDICINE (IJASM)**

The IJASM is in the process of getting indexed. Towards this, the Journal has become online and e-published. To improve the quality of Journal, comprehensive guidelines and Model Code of Conduct have been formulated.

In addition, a policy towards ensuring robust plagiarism check has been formulated and implemented. The Editorial Board and Reviewer Panel will be expanded. All these activities will help to facilitate indexing of the Journal.



- **OPTIMISING UTILIZATION OF AEROSPACE MEDICINE SPECIALISTS IN AFMS**

The subject issue was discussed in COSC meeting and based on the directions, the following actions have been taken: -

➤ Aerospace Medicine Specialists from IA & IN would continue to be deputed to IAM for instructional duties. DGMS Army & Navy have been sensitized to give an extended/ repeat tenure to these specialists at IAM for instructional duties. This will help the specialists to earn required PG teaching experience.



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➤ A Board of Officers on appointment of common Aerospace Medicine Specialist at co-located flying units has been carried out and approved by DGAFMS. Accordingly, Aerospace Medicine Specialist posted to any flying base will provide cover to flying units of all the three services of co-located units.

➤ A Board of Officers is under progress at IAM to increase the number of Aerospace Medicine Specialists in the PE of IAM.

➤ NMC (National Medical Council) has sanctioned that No 1 AMTC (Hindon) and No 2 AMTC (Dundigal, Hyderabad) would be treated as part of Institute of Aerospace Medicine. This concession by NMC would help in including the Aerospace Medicine Specialists posted at both AMTCs as part of teaching faculty of IAM. This will help in expanding the PG teachers in Aerospace Medicine.



• **SCREENING FOR NARCOTIC AND PSYCHOTROPIC SUBSTANCES IN IAF**

The substance abuse Policy titled "Policy on Screening for Narcotic and Psychotropic Substances in IAF" has been issued vide Air HO/C 26487/16/Med 8 dated 18 Nov 21.

A MoU has been signed between IAF and Dr. Lal Path Labs, for conduct of screening as well as the confirmatory tests for substance abuse. The Lab is also responsible for the collection, testing, dispatch to the referral lab for the confirmatory tests and will ensure the chain of custody as well as the medical confidentiality of the testing.



The testing of Narcotic and Psychotropic Substances has been undertaken at one designated station in each Command in the first phase. Based on the successful trials in phase 1, in the 2nd phase, testing has also commenced in 66 stations in IAF wef 11 Apr 22.



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• AIR MSHL PM SUNDARAM TRAVELLING FELLOWSHIP: SPREADING AWARENESS OF AEROSPACE MEDICINE

Air Vice Mshl Anupam Agarwal VSM, Travelling Fellow of ISAM for the year 2021-22, conducted two guest lectures at Pune on 19 & 20 Apr 22. On 19 Apr 22 a lecture was delivered to **9th term students of AFMC**. This set of students was chosen as they are likely to join AFMS soon and would be appearing for PG subsequently. The lecture was well received and doubts regarding Aerospace Medicine were cleared as they arose.



On 20 Apr 22, a lecture was conducted at **Bharti Vidyapeeth Medical College**, as part of spreading awareness amongst young medical graduates. The guest lecture was hosted by the student council of BVMC and was extremely well received. He also visited SRMS Institute of Medical Sciences, Bareilly, where he delivered his 3rd talk on 01 Oct 22. These lectures were attended by a large number of undergraduate students. Many doubts regarding Aerosp Med as

well as the procedure to join AFMS were clarified.

Gp Capt Rahul Pipraiya, Travelling Fellow of ISAM conducted guest lectures at 03 Medical Colleges during the difficult times of Covid pandemic. The primary objective of the travelling fellowship is to propagate the word about the niche speciality of Aerospace Medicine among the medical fraternity.



He delivered intriguing lectures on topics like 'High Altitude Physiology, Spatial Orientation and Importance of Aerospace Medicine in Flying' at **Chandramma Dayanand Sagar Institute of**



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Medical Education and Research Kanakapura, Sri Siddhartha Medical College Tumkur & Chamaraja Nagar Institute of Medical Sciences.

His zealous effort was received cordially at all institutes and he generated lot of interest amongst the bright minds seeking further guidance for the post-graduation in Aerospace Medicine. He was felicitated by this Colleges in the traditional style.

• INTERNATIONAL PRESENCE BY ISAM MEMBERS

The **1st International Conference of Aerospace Medicine (ICAM 2022)** was held at the **City of Science and Industry in Paris, France from 22 to 24 September 2022**. The ongoing COVID-19 pandemic has had dramatic consequences throughout the world. As countries struggled to contain the spread of the coronavirus, many national and international scientific, economic, cultural, and sporting events were cancelled or delayed in 2020/ 21. The Organising Committee took the decision to hold the First International Conference of Aerospace Medicine, (ICAM) at Paris, France, on 24-26 September 2020. The conference was jointly organised by the Aerospace Medical Association (**AsMA**), International Academy of Aviation and Space Medicine (**IAASM**), European Society of Aerospace Medicine (**ESAM**) and the Societe Francophone De Medicine Aerospatiale (**SOFRAMAS**).



The theme of the Conference was '**Extending the Limits of Global Aerospace Medicine**'. ICAM 2022 was the first international conference to bring together all the



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civilian and military specialists involved in Aerospace Medicine, Airlines Medical Doctors, Repatriation and Occupational Health.

A dedicated panel on '**Advances in Cardiovascular Management: Implications on Aeromedical Decision Making**', sponsored by Indian Society of Aerospace Medicine (ISAM) was accepted by ICAM organizers and was held during ICAM 2022 on 23 Sep 22. DGMS (Air) & President ISAM took special interest in conceiving the idea and finalizing the contents of the panel. The five panelists were **Dr Punita Masarani, Dr Sasirajan Jeevarathinam, Col KN Rao (Retd), Gp Capt Yashvir Singh Dahiya** and **Gp Capt Prathu Rastogi**.



The ISAM sponsored panel during the Conference was a grand success. The panel was given unique weightage and was chaired by none other than '**Dr David Gradwell**', President International Academy of Aviation & Space Medicine, and co-chaired by '**AVM Deepak Gaur AVSM (Retd)**'. All the panellists presented brilliantly. The scientific content was highly appreciated by all. This was the only panel that was conducted by an individual society and holding the same so professionally offered high recognition to ISAM in such a conference of international repute.

Two official delegates from Indian Air Force also made podium presentations during ICAM-2022. Both the presentations delivered their talks in the highest professional manner and were highly appreciated by the attendees. The details of the presentations are as follows:-



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(a) Gp Capt NK Tripathy presented on '**Continuous Wakefulness of Short Duration: Effects on Psychomotor Cognitive Performance & Subsequent Sleep Physiology**'. This was one of the presentations in the session on '**Sleep, sleep disorders and aircrew**' scheduled from 1600-1730 h at Louis Armand East Hall on 22 Sep 22. The session was chaired by **Dr Caldwell**.

(b) Wg Cdr Biplab Bhowmick presented on '**Effects of Whole-Body Vibration on Human Contrast Sensitivity Function**'. This presentation was included in the session on '**Human Performance & Aircrew**' scheduled from 1600-1730 h at Louis Armand West Hall on 22 Sep 22. The session was chaired by **Dr. Hernando (Bugs) Ortega**, Col USAF (ret), and **Dr. David Powell**, IATA.



ISAM also sponsored a MD Student for an oral presentation. '**Flt Lt Sanjay Purushottam**' from 5 Wg AF who was recently commissioned in the IAF after completion of his MD in Aerospace Medicine presented his paper on '**Combined**



Altitude Depleted Oxygen vis-à-vis Hypobaric Hypoxia: Efficacy in Hypoxia Indoctrination'. This was scheduled as the last presentation in the session on '**Hypoxia & Hypobaria**' scheduled from 1400 to 1530 h at Louis Armand West on 22 Sep 22. The session was chaired by **Dr Henry Lupa**, Chief of Aerospace Medicine at QinetiQ PLC and **Dr Bruno Chenuel**.



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• OUTSTANDING ACHIEVEMENTS BY AEROSPACE MEDICINE SPECIALISTS



Dr Punita Masrani, Aeromedical Physician and Aviation Medical Examiner Mumbai, Maharashtra, India, an ISAM EC Member and Fellow presented her Poster during the ICAM-2022 Conference in Paris on 24 Sep 22. She was awarded the '**Best Poster Certificate**' amongst a total of 73 Posters presented over 03 days of the Conference. She presented her poster on '**Aeromedical Decision-Making Paradigm for Return to Flight after an Infectious Disease**'. That is in fact a proud

moment for the ISAM.

• HUMAN SPACE PROGRAM-'GAGANYAAN'

The Institute of Aerospace Medicine, continued to provide aeromedical support to the Nation's Gaganyaan Program. The aeromedical training of Gaganauts, their periodic medical evaluations and continued aeromedical consultancy to ISRO on multiple facets were the mainstay of the activities this year. The brief details of some major activities carried out over the last one year has been brought out in the subsequent paras.



• VISIT TO EUROPEAN ASTRONAUT CENTRE, COLOGNE, GERMANY

A team comprising of four Aerospace Medicine Specialists of Indian Air Force and four officials from Indian Space Research Organization (ISRO) visited the European Astronaut Centre (EAC), Germany from 07 to 10 Jun 22. The aim of this visit was to participate in 'Hands on Training on Medical Management of Crew'. The objective of the visit was to gain expertise in operational readiness of crew management team for 'Gaganyaan' Mission.

The team visited the following facilities of EAC:-

- (a) Mock-up Model of **International Space Station (ISS)** which included the Simulator Bay, The Automated Transfer Vehicle (ATV) module, The Russian segment and Columbus (ESA segment) of the ISS, and the Soyuz module.
- (b) **Neutral Buoyancy Lab (NBL)**, a 22 x 17 x 10 m³ pool with a submersible platform on one side. Columbus module was placed in the facility which can also



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be lowered into the water. Pre-EVA familiarization training is conducted in the NBL for ESA astronauts.

(c) **Envihab**, a one-stop aeromedical centre for evaluation, training and scientific research on Space Medicine under DLR Institute of Aerospace Medicine, Germany. It is equipped with a Short-arm Human Centrifuge, Tilt Table, Hypobaric Chamber, Physiology Module, Isolation and Group Confinement Facility, PET-MRI machine, laboratory for astrobiological research and evaluation.



(d) Medical training room with Mannequins (for hands on medical training of the ESA astronauts).

• TALK AT NATIONAL CONFERENCE ON AEROSPACE QUALITY AND RELIABILITY



Maj Gen Vijay V Joshi VSM (then Air Cmde) was invited to deliver a talk on '**Aerospace Quality and Human Safety**' at the National Conference on Aerospace Quality and Reliability on 06 May 22 at Vikram Sarabhai Space Centre, ISRO, Trivandrum. He delivered the talk highlighting the role of Human Engineering in design and development of various aerospace platforms and human safety certifications of the human-use products inside the aerial

and space vehicles. He also presented an overview of Space Medicine and explained the role IAM is playing in India's Gaganyaan Mission.

• TALK AT 7TH EDITION OF BANGALORE SPACE EXPO

Air Cmde Vipin Sharma, Commandant, IAM IAF was invited to deliver a talk on '**Human Spaceflight and Space Exploration Missions**' at the 7th edition of Bangalore Space Expo organized by ISRO at Jawaharlal Nehru Planetarium, Bangalore on 07 Sep 22. He highlighted the involvement of IAM in Space Medicine right from the



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time when Russians sent the first man to space. He brought out IAM's role in selection of Indian Cosmonauts during Project Pawan and astronaut candidates for India's indigenous Gaganyaan Mission. He also brought out the different facets of Space Medicine which relate to short duration and long duration exploratory missions. The different aeromedical factors in spaceflight and their countermeasure strategies were also brought out. The Air Officer concluded the talk by giving a brief overview of IAM's present role in Mission Preparation for Gaganyaan with respect to their aeromedical training and evaluation.

- **SPACE CAPSULE WORKSHOP AT AFS YELAHANKA**

Wg Cdr Stuti Mishra from IAM was invited to deliver a lecture on '**Space Medicine**' at the Space Capsule Workshop for IAF Officers on 22 Sep 22 conducted at AFS Yelahanka. She introduced the domain of Space Medicine and how it is different from conventional General Medicine on ground. She also highlighted the distinct physiological changes that happen due to the microgravity condition and their mitigation strategies. She briefly mentioned an overview of a Mission's pre-flight, in-flight and post-flight Space Medical activities.

AEROSPACE MEDICINE TRAINING- A LEAP FORWARD

- **CONTINUING AEROSPACE MEDICINE EDUCATION ONLINE (CAMEO)**

CAMEO (Continuing Aerospace Medicine Education Online) is being conducted once a month on virtual platform (CISCO-WEBEX). It has proven its effectivity as a platform for Interactions, sharing of thoughts and experiences by Aerospace Medicine Splts from different sectors (civil/ military or serving/ veterans) for the benefit of the entire fraternity. The platform will be extended for conducting few Guest Lectures by experienced veterans of the specialty.

- **NEW HIGH-G TRAINING PROTOCOL FOR AIRCREW USING DFS AT IAM**

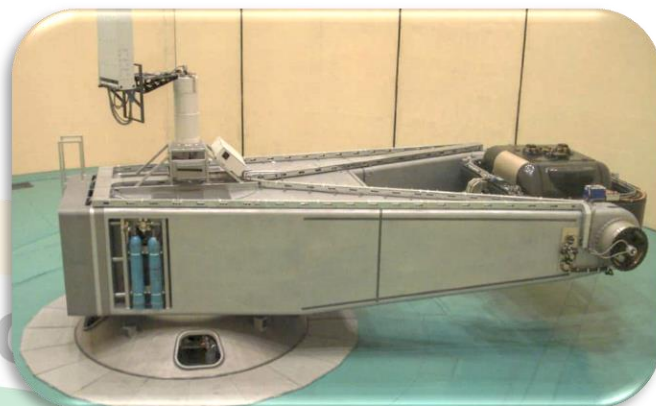
High Performance Human Centrifuge (**HPHC**) has been upgraded to **Dynamic Flight Simulator (DFS)** in 2020. This advanced simulator has enabled improvement in the aeromedical training of the fighter aircrew by providing better and more realistic training capabilities to train with 1 v/s 1 combat, missile avoidance and simulated experience of tactical air combat manoeuvre. To exploit the maximum capability of the simulator and to incorporate the same in the aircrew training, a new protocol of High-G training has been formulated in consultancy with Test Pilots and implemented for high G training.



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- **STANDARDISATION OF High-G PROCOL FOR VARIOUS MEDICAL DISABILITIES**

Based on the previous experience of more than 40 years and practices being followed in other Air Forces, the HPHC profiles for aeromedical evaluation of aircrew with medical disabilities were revised and standardized. In addition, guidelines have been issued on the medical disabilities that would necessitate exposure to HPHC evaluation.



- **VITUS 3D WHOLE BODY LASER ANTHROSCAN**



Vitus 3D whole-body Laser Anthroscan was installed in the dept of Human Engineering since Oct 19. Department has done trials to identify laser scanning compatible tight body fitting clothing material for male and female subjects. Subsequently, the protocol for positioning and scanning the subjects were formalised. A study on data collection of 1000 subjects is nearing completion. The study results will help in standardization of scanning postures and methodology and bringing out the potential utility of the facility in transiting from manual to digital mode of anthropometry for future aircraft and flying clothing design and development programs.

AEROMEDICAL SUPPORT TO FOREIGN EXERCISES

- **EXERCISE PITCH BLACK 2022 AT DARWIN, AUSTRALIA**

Exercise Pitch Black is a biennial warfare exercise hosted by the Royal Australian Air Force. The aim of the exercise is to practise Offensive Counter Air (OCA) and Defensive Counter Air (DCA) combat in a simulated war environment. As inferred from the name of the exercise, it is conducted in low light conditions. It was conducted at Darwin Base situated in Northern territory of Australia. A total of 17 countries participated in the exercise from 22 Aug to 08 Sep 22. Even though, this exercise is being conducted since 1981, this is only the second time IAF has



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participated in the exercise. The same contingent participated in the Hop on exercise at Kuantan Air Base, Malaysia from 12 Aug 22 to 17 Aug 22.



Sqn Ldr Harshavardhan G, Aerosp Med Spl & SMO 46 WF, AF was part of the IAF contingent for the exercise. He provided medical cover to the IAF team and was an advisor on all aeromedical issues. As part of community activities during the exercise, he visited Darwin General Hospital to interact with the patients admitted at the hospital. Both exercises were successfully completed without any major incidents.

• CONTINUING MEDICAL EDUCATION- 2022

A **Continuing Medical Education (CME)** program for the year 2022 titled '**Aerospace Medicine: Newer Frontiers**' was conducted at IAM IAF on 29-30 May 22. A total of 80 delegates (30 outstation and 50 local) including 8 resource persons participated in the said CME. Five aircrew from local units also attended the CME. The entire event was live streamed on AFNET platform.



The CME was inaugurated by **Air Marshal Sandeep Singh PVSM AVSM VM ADC, Vice Chief of the Air Staff, Indian Air Force**. He was also the chief guest and the keynote speaker. In addition, Air Mshl Prashant Bharadwaj AVSM VSM & Bar PHS, DGMS (Air), Air Mshl Sajju Balakrishnan AVSM VM, SASO HQ TC, AVM Ashutosh Sharma VSM, ACAS (Med), AVM Narinder Taneja VSM, PMO HQ EAC, AVM Sadhna S Nair VSM, PMO HQ TC, AVM MS Sridhar, Comdt CHAF(B),

other senior PSOs of HQ TC and AOsC of local AF units attended the inaugural function of the event.



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Seven scientific sessions were conducted during the two days of CME. The topics were broadly divided as aero medical solutions to high altitude deployment, aero medical efforts towards policy changes, use of newer facilities at IAM and recent aero medical tasks and trials.

A guest lecture on **'Managing Risk and Ensuring Patient Safety with 21st Century Health Care'** by AVM Devesh Vatsa VSM, Commandant, Software Development Institute, Indian Air Force.

The session was chaired by AVM Ashutosh Sharma VSM, ACAS (Med). The presentation pertinently brought out the use of current technological advancement in IT for providing patient safety and managing risk in a healthcare set up. The speaker highlighted cyber security and medical data management. He brought out that all embedded chips in various diagnostic and therapeutic electromedical tools could be hacked or accessed in unauthorised manner and could be used to gather intelligence and also to sabotage the medical facilities as a part of cyberwarfare.



The scientific content of the CME was well appreciated by all. Papers could generate valuable discussion among resource personnel, speakers as well as delegates. Active interaction and sharing of information by all on the pertinent contemporary topics chosen for the CME made all attendees wiser and educative. Overall, the event was a great success.



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60TH (DIAMOND JUBILEE) ANNUAL CONFERENCE OF THE ISAM

The Indian Society of Aerospace Medicine organised its **Diamond Jubilee** Annual Conference at IAM IAF, Bangalore from 25 to 27 Nov 21 on a hybrid platform. The Diamond Jubilee conference presented an opportunity to introspect on stupendous past achievements and dwell upon the future with a view to charter the way ahead for Aerospace Medicine in the country. The **hybrid online-offline platform** of the Conference was designed to encourage greater participation and exchange of scientific knowledge, while overcoming the challenges of COVID-19. The conference was attended physically by 120 members and online by around 250 representatives inclusive of Armed Forces Medical Officers, IAF Aircrew, representatives from DRDO, ISRO & Aviation Industry and the past Presidents of the Society. A total of eight sessions consisting of fifteen live podium & eleven online presentations and four poster sessions were held. A total of 108 scientific papers including scientific posters, speaking posters, panel discussions and closed-door sessions were presented during these scientific sessions.

• THE CONFERENCE THEME AND THE LOGO

The theme of the 60th Annual Conference of the ISAM was '**Aerospace Medicine: Atmosphere and Beyond**'. The conference logo was conceptualized and designed by Wg Cdr AVK Raju (Retd), Aerosp Med Spl. Description of the logo and its individual components is as under:

1. This logo is to commemorate the rich and illustrious years of the Society, and to celebrate **60th Annual Conference of the Indian Society of Aerospace Medicine**.

2. Keeping in mind the special place that this 'Diamond Jubilee Conference' would hold for its members, colours, Gold & Royal Blue, and glitter of the diamond have been chosen for the logo.

3. Description of the individual elements of the logo:-

(a) **Diamond** – Gold, Royal Blue and 'Sky' Blue coloured Diamond in the centre forms the sterling backdrop of the logo. It signifies 'Diamond Jubilee Conference' of the Society. The compartments of the Diamond indicate





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various subsets of Aerospace Medicine, which work in unison to give indomitable strength to the niche speciality of Aerospace Medicine.

(b) **Digit 60** – 60 in gold, with ISAM insignia and a sparkling diamond mark the 60th Annual Conference, an important milestone in the Society's history. Circles of digits six and zero represent 'aircraft wheels' which give a perfect take-off, for the aircraft to reach out to people and places far and wide. Putting the same in context, it is indicative of the continuing support which the Society has been making to the aviation industry, and the assurance that it will continue reaching out to the industry whenever called for.

(c) **Golden Wings** – Wings are synonymous with the business of flying. While the wing feathers represent the Society's members, Society acts like wind beneath the wings to help its members soar high and scale greater heights in the field of Aerospace Medicine.

(d) **Golden Banner** – Golden banner with the inscribed numbers 1954 - 2021 indicate the glorious golden years of the Society since its inception. Words '**ISAM Golden Jubilee Conference**' spell out the momentous academic extravaganza that awaits unfolding in days to come.

• **PLENARY SESSION OF THE 60TH ANNUAL CONFERENCE**



The 60th Annual Conference (Diamond Jubilee) was inaugurated on 25 Nov 2021 at 1100 h by Chief of the Air Staff and Chief Patron of the Society **Air Chief Marshal VR Chaudhari PVSM AVSM VM & ADC**. Air Marshal B Chandra Sekhar AVSM, SASO Training Command IAF, senior Air Officers of HQ TC and local units, Ex-Comdt IAM and senior veteran Aerosp Med Spls were some of the important dignitaries who graced the occasion. The Session started with an audio-visual presentation on the history and achievements of the ISAM. Following Welcome Address by Comdt IAM, Air Mshl Prashant Bharadwaj AVSM VSM & BAR PHS, DGMS (Air) and President ISAM delivered the Presidential Address. This was followed by the Inaugural Address by the CAS.



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- **AIR MARSHAL SUBROTO MUKERJEE MEMORIAL ORATION**



The Air Marshal Subroto Mukerjee Memorial Oration was delivered online by **Dr Quay Snyder, President, CEO & Co-Founder of Aviation Medicine Advisory Services (AMAS), USA**. His talk was on the topic, '**Pilot Physician's Evolution to HIMS**'. The orator shared his invaluable experience of 17 years as an US Air Force Flight Surgeon and family practice physician. His talk provided an insight to the highly effective concept on aviation safety, pilot health and career preservation.

- **AVM MM SRINAGESH MEMORIAL ORATION**

The AVM MM Srinagesh memorial oration was delivered online by **Mr Steve Roberts, Project Engineer & Head of Business Development, Martin Baker Aircraft Co Ltd** on the topic, '**Evolution of Escape System: A Safety Perspective**'. He was commissioned into the Royal Air Force (RAF) as a Squadron Maintenance Officer working on Tornado, Hawk, Jaguar, Harrier & C-130 aircraft, prior to joining Martin-baker 31 years ago, as a Project Engineer. He discussed evolution of escape systems, from a safety perspective, how the requirements continue to evolve with new aero-medical research and how Martin-Baker is introducing innovative seat design technology to meet them. Overall, it was an excellent oration enriched with information latest in the field of escape system.



- **AVM JHF MANEKSHAW PANEL**

The JHF Manekshaw Panel was delivered by two eminent speakers; **Dr AK Ghosh, Project Director, AMCA, ADA & Dr Pratima Murthy, Director NIMHANS**.



Dr AK Ghosh spoke on the topic, '**Human Interface in 5+ Generation Fighter Aircraft**'. The presentation was an eye opener to the challenging effort to design & development of AMCA. He categorically brought out the human safety & aeromedical perspective in the design considerations of AMCA.



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Dr Pratima Murthy spoke on the topic, '**Mind Matters in Modernity**'. She presented on the functioning of the mind which has been a source of intrigue for centuries and there have been different historical notions about its functioning in health and disease. Her presentation provided a historical understanding of the mind from different perspectives, the complex interaction of thought, emotion and behavior and how mind can be trained to meet the current challenges.



- **TECHNICAL MINI SERIES (TMS) ON 'OPTIMISING PHYSICAL FITNESS IN AIRCREW: A GUIDE TO MEDICAL OFFICERS'**

The Technical Mini-Series (TMS) titled, '**Optimising Physical Fitness in Aircrew: A Guide to Medical Officers**' was published and released by Chief of the Air Staff during the plenary session of the Diamond Jubilee Conference of the ISAM on 25 Nov 21.

As a guide to Medical Officers, this TMS has been prepared by the Institute of Aerospace Medicine with specialist inputs from Physiologists and Sports Medicine Specialists. The contents of the TMS provide basic concepts of physical conditioning, description of specific exercises with pictorial depiction, customized exercise regimes tailored to the need of different fleet of aircrew and information on prevention & mitigation of exercise and sports injuries. Implementation of such a programme at station level and methods for assessment of fitness level have been contained in one chapter.

Technical Mini Series in
Aerospace Medicine
First Edition

**Optimising Physical Fitness in Aircrew:
A Guide to Medical Officers**



Indian Society of Aerospace Medicine

The TMS has been made simple, easy to understand and practical. This TMS will serve as a ready reckoner for the Medical Officers in guiding aircrew for optimising their physical fitness.



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• GENERAL BODY MEETING OF ISAM-2021

For the second time in a row, the General Body Meeting (GBM) of ISAM was conducted on a Hybrid platform on 26 Nov 21 from 1530 h to 1700 h. This was attended by approx. 80 members physically and 150 members virtually. The GBM was chaired by **Air Marshal Prashant Bharadwaj AVSM VSM & BAR PHS**, DGMS (Air) and President of the Society and **Gp Capt Prathu Rastogi**, Secy ISAM conducted the proceedings. The approved minutes of the GBM have been made available on the Society website. Fellowship and life membership were conferred during the GBM by the President, ISAM



• NEW FELLOWS AND ASSOCIATE FELLOWS OF THE SOCIETY

Gp Capt RR Kapur (Retd) and **Gp Capt Rahul Pipraiya** were conferred Fellowship and **Gp Capt BK Umesh Kumar (Retd)** and **Air Cmde Rajesh Kumar** were conferred Associate Fellowship of the Indian Society of Aerospace Medicine during the General Body Meeting.

• NEW LIFE MEMBERS OF THE SOCIETY

Life membership was given during the GBM by the President ISAM to the following medical officers.

- Col VK Malhotra (Physiology)
- Gp Capt Kavita G Bhatnagar (Aerosp Med)
- Gp Capt SS Rao (Medicine)
- Wg Cdr Neha Gupta (Pathology)
- Wg Cdr CS Guru (Sports Med)
- Wg Cdr G Srinivas (Aerosp Med)
- Dr Abhishek Kr (CMO, Big Charter Aviation Pvt Ltd)
- Gp Capt Talasila Bharati (Aerosp Med)



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AWARDS AND TROPHIES

- THE CHIEF OF THE AIR STAFF TROPHY FOR STANDING FIRST IN PAMC

The Chief of the Air Staff Trophy is awarded to the officer who scores the highest marks in all the Primary Aviation Medicine Courses (PAMC) held during the year. For the academic year 2020-2021, the trophy was awarded to the joint toppers **Sqn Ldr Arjun Malhotra** & **Flt Lt Shalini Bajpai**. The trophy was presented to the officers by the CAS during the plenary session of the Conference.



- AVM MM SRINAGESH TROPHY



The **AVM MM Srinagesh** trophy is awarded to the officer who scores the highest marks in the Advance Course in Aerospace Medicine. The trophy was awarded to **Lt Col Manu N** by the CAS during the plenary session of the Conference.

- AOC-IN-C TRAINING COMMAND ROLLING TROPHY

AOC-in-C, Training Command Rolling Trophy is awarded for the best dissertation in MD Aerospace Medicine Course. **Dr Shivani Kasture**, later commissioned as Flt Lt was awarded the trophy for her dissertation titled, '**Validation of Hypoxia Signature**'. The trophy was awarded by the CAS plenary session of the Conference.





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- **PRESIDENT'S GOLD MEDAL**

The President's Gold medal is awarded to the student standing first in the MD Aerospace Medicine. The President's Gold medal was awarded to **Flt Lt Harshit HS** by Air Marshal Prashant Bharadwaj AVSM VSM & BAR PHS, DGMS (Air) and President, ISAM during the General Body Meeting held on 26 Nov 2021.



- **AIR MARSHAL PM SUNDARAM TRAVELLING FELLOWSHIP**



Gp Capt MS Nataraja was awarded the Air Marshal PM Sundaram Travelling Fellowship by DGMS (Air) & President ISAM for the year 2020-21. Gp Capt Rahul Pipraiya, who was selected as Travelling Fellow but could not take lectures due to Covid pandemic was carried forward for the year 2021-22.

- **AIR MARSHAL KULDIP RAI AWARD**

Air Mshl Kuldip Rai award for the best published article was awarded to **Sqn Ldr Rahul Dev** for the research article titled '**Establishment and Validation of Institute of Aerospace Medicine-Exercise Maneuver Protocol (IAM-EMP)**' published in the Summer Edition of IJASM 2021.

- **BEST PAPERS: 60th ISAM CONFERENCE**

Late Gp Capt GS Nayar award for the best scientific paper presented during the 60th ISAM Conference was awarded to **Gp Capt Murtaza** for the paper titled '**Inadvertent Operation of Ejection Seat Firing Handle: Aeromedical Aspects**'. **Wg Cdr AVK Raju (Retd)** received the award for the best poster for his paper titled '**Cerebral Venous Thrombosis in Civil Aircrew: Aeromedical Disposal**'.



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OBITUARY

LATE AIR VICE MARSHAL PRADEEP KHARBANDA VSM

Late Air Vice Marshal Pradeep Kharbanda VSM (Retd on 31 Dec 2016), an alumnus of Armed Forces Medical College, Pune was commissioned in the Indian Air Force on 30 March 1979. During his 37 years of service, he held various important administrative and staff appointments like HoD, HAP & HM and Chief Instructor of Institute of Aerospace Medicine, Dy PMO, WAC and PDMS (S) at Air HQ, AOC MTC and PMO WAC.

The Air Officer underwent important Service Courses including Senior Cdrs' Course, Advanced Course in Aviation Medicine (Av Med) and Staff College from DSSC, Wellington. He achieved exceptional grading in most of the courses. He also pursued MSc in Defence Studies, MD in Alternate Medicine and PG Diploma in Medico-Legal Sciences. With his initiative, the Indian Journal of Aerospace Medicine was brought on the World Wide Web (www) on the **nic.net**. While at Air Force Central Medical Establishment (AFCME), he trained himself as an ISO auditor and played a central role in earning the coveted **ISO 9001:2000** Certification for **AFCME**, the first of its kind.



The Air Officer was an exceptional Aerosp Med Spl and a fellow of the Society. His continuation to the growth of Aerosp Med specialty and ISAM as a society would remain unparalleled. Till recently, he was one of the Advisory Board Member of IJASM and had offered significant contribution to the improvement in the Journal. His professional competence combined with his positive approach and excellent disposition, had set an example for others to follow. For his distinguished service of highest order, Hon'ble President was pleased to award '**Vishisht Seva Medal**' to him on **26 Jan 2009**.

After his retirement he continued to stay in Bengaluru, Karnataka till his untimely demise due to Dengue Fever at Command Hospital Bengaluru on **07 Oct 22**. He will always be remembered as a humble, down to earth gentleman, an inspiring teacher, a thorough professional and a researcher par excellence!



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[This e-Bulletin has been compiled and edited by Wg Cdr Biplab Bhowmick, OIC ISAM website]