

Inaugural Address

Air Chief Marshal SK Kaul, PVSM, MVC, ADC

Chief of Air Staff, Indian Air Force

I am indeed honoured to be sharing this forum today. The International Congress for Aviation and Space Medicine Congress is being held in India for the first time. It is a privilege for an airman like me to be associated with such a Congress and to have an opportunity to meet some of the stalwarts of this very exciting field of Aviation and Space Medicine. I would like to welcome Professor Bajaj, Member Planning Commission, an eminent physician in his own right, and, most importantly, the President of the International Academy of Aerospace Medicine, Professor Stanley White.

It is indeed heartening for us in India to find that there are a large number of delegates who have come from various parts of the world to discuss this very important science, particularly so at a time when we are reaching the threshold of human endurance. I belong to a community which I think the doctors and scientists who have gathered here are going to be spending time to find out what bugs them, what ails them, and what makes them tick, i.e., the pilots community. We on our part have contributed immensely, towards research and development and I do sincerely believe and hope that in this Congress, the doctors interact not only amongst themselves but with their subjects too. We contribute towards your growth, your knowledge and your enquiry in trying to make sure that our health remains alright when we leap off into the air. My background is essentially military aviation but I am sure that what I say about aviation and its related problems of medicine must also be equally true for the commercial aviator and the private aviator as well. If the objective of the aeromedical fraternity is to ensure that the peak mental and physical fitness of aircrew is ensured in order to enable the military pilot or the civil pilot or a private aviator to operate effectively in varying conditions then one of important things is the

interaction between the aviation medicine expert and the subject. I call the pilot a subject for obvious reasons because he is the subject you are studying or are discussing here. The interaction between the two of them, the trust between the pilot community and the doctors community, I think is of great importance. This is one area which I would like to highlight primarily because somehow, whether we are in uniform or out of uniform, whenever we approach a Medical Board or go to a doctor for some ailment or the other, there is always a trepidation, a hesitation on our part. We are a little diffident to come to you and say that this is what is bugging us because at the back of our minds is the fear that we may be grounded. That is something which is always lurking at the back of our minds and that is why I say that this mutual interaction and trust is very vital. During your research if this aspect could feature, I think you will probably get more out of your subjects than you have been getting so far. I understand that the aim of this Congress is to blend the human dimension with the vital role of Aviation and Space Medicine. I would like to underscore the point that the aeromedical specialist is very much an integral part of any aviation related programme, whether it is conventional flying or in space.

I would also like to highlight the fact that over the years, particularly in the last few decades, there has been a quantum jump in technology, which directly or otherwise has had an impact on the operational, social and environmental scenario. Stresses and pressures have increased manifold. What is also worthy of noting is that the flight envelopes have expanded immensely. In the conventional aviation world now we are reaching the threshold of 'G' tolerance of fighter aircraft for the class F-15, F-16, Mirage-2000, MiG-29 and a few others, they are reaching up to about 9 G sustained

performance. Phenomena such as G-LOC which are occurring worldwide is something which the doctors need to look at and tackle and see how best the pilots can avoid. Likewise in space, technology has advanced to a point where shuttles are going up and down every now and then so much so that it has become a common feature. The human body has been able to withstand stresses, pressures and strain, but tolerances need to be further improved, and this is what the doctors need to look at again. So, in a nutshell I feel that there are very many challenges ahead of you and I can't see technology stopping there. Perhaps there will be further advances as well which will remove pressures on the human body and that is what you are looking for.

One more aspect I would like to highlight is that related to aviation, be it space or conventional, by and large, we accept the fact that the aircraft designers, people who control them, the technicians and, of course, the inevitable pilot form a closed-loop system with the man in the cockpit as "central to mission accomplishment". In spite of this closed-loop and interaction at the intermediate level, we find that human failures do occur time and again, resulting in accidents. What is disconcerting for us to note is that this phenomenon is not confined to any specific country or air force or any organization; it is internationally accepted that human failures do cause accidents. What causes these human failures is what has not been answered on many occasions. That is where I think the scientists could address themselves as to why the human being, in spite of all the training and all the motivation and everything else that goes in the making of a pilot, reacts wrongly on occasions, resulting in accidents. This, if I understand correctly, even internationally is the commonest factor causing accidents; then I think the key area which this Congress must address is how to bring down this human failure accidents. I, therefore, feel that the aviation medicine expert requires to be in this loop rather than coming in only when an accident occurs. He should be a part of this loop. He should function as a truly professional specialist who can act as a confidant, a man who can be trusted, a man who can render advice when needed. He can

play a very vital role. An important fact which needs to be highlighted is that the cost of training today, particularly in military aviation, is becoming higher and higher. In fact, it is getting out of reach for many countries. I am not too sure about the cost of training of civil pilots but that too must be quite high. I know that training fighter pilots costs something in the region of nearly two million dollars by the time he is an accomplished fighter pilot. The cost for training a transport pilot is nearly a million dollars and for a helicopter pilot is half a million dollars. Now with that kind of investment it is obvious that those who are training these gentlemen would like to get the maximum out of them. To get the maximum out of them, they have to be mentally and physically strong and fit to be able to undertake their task, that is where I think the aeromedicine specialists can play a vital role to safeguard the lives of these gentlemen. That is the key message I wish to convey. I am sure during the deliberations of this Congress there will be many more subjects which will be discussed during the scientific sessions. I think it is, important that at these sessions the data collected by various organizations all over the world be exchanged freely and frankly. There are no two blocks anymore internationally and politically, so I don't see any reason why, in the aviation medicine world there should be any at all. Informatics has now reached a point where at the press of a button you can get the information transferred from one country to another. I think the Congress could deliberate on this very important aspect of sharing of data and information, particularly which is of significance in ensuring the safety of the life of a pilot.

On behalf of the Indian Air Force, I once again wish to extend a warm welcome to all our guests who have gathered at the 42nd International Congress of Aviation and Space Medicine and I am more than certain that this Congress will be a grand success. On behalf of India as well, I would like to welcome foreign delegates and their spouses and hope that they have a good stay and see our beautiful country.

Thank you