

Some Highlights of my Practice in Aerospace Medicine and Some Suggestions to my Younger Colleagues.

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Air Marshal Chahal and friends,

Barely a fortnight ago I was pleasantly surprised to receive a letter from the present DGMS(Air) inviting me to this Annual meeting and asking me if I would like to speak for about 15 minutes. Having spoken at the Annual meetings of this society a considerable number of times, right from its inception it would not have been in the fitness of things to decline an opportunity.

When a request like this is made to a person who has retired, it means that he will bring forth in his talk some of the philosophical considerations of his experience, and as a result will make some useful suggestions for those who are still in business. I, therefore, decided that I should recount in this talk a few incidences from my personal experience. All these incidences are some two to three decades old and hence can be safely recounted. Attempt has been made to hide the identity of the persons concerned without decreasing the importance of the lesson that we must all learn from such incidents. I am aware it is indeed very costly to gain experience, and I wish what I am going to say will prove useful to my younger colleagues.

Firstly, how I landed up in Aviation Medicine. Very early in my career I worked as a GDMO Surgeon in No.2 AF Hospital and was recommended by my senior surgical colleague to the then Adviser in Surgery and a well-known and respected surgeon of the Indian Army for training in surgery. Despite all my efforts, I was not given that opportunity as I then held only a Short Service Commission. I was posted thereafter as a Medical Officer with a fighter Squadron which was converting to a new type of aircraft known as

Vampire NF-10 (Night Fighters). While working at the Station sick quarters, I got hold of a few old copies of a medical magazine, "The American Journal of Aviation Medicine" from a junk store and I came to know that there was some subject known by that name. Within a short time an opportunity arose when I was appointed a Medical Member of a Court of Inquiry, which was to investigate into a case of episodic unconsciousness in flight. Apart from other factors, the pilot was found suffering from reactive hypoglycaemia. With that my interest grew in the subject and in one of the earliest meetings of this Society I had highlighted aircrew problems of night fighter operations.

My tenure with this Squadron was a little over three years and during that period this Squadron did not experience any major accident involving any injury to the aircrew or loss of a machine. I am not trying to impress that I had played any major role in this regard. Actually, the main role was played by the Squadron Commander, the like of whom I have rarely come across again. He believed in meticulous and thorough study of his subject and ensured that everyone who was in his Squadron knew precisely what he was supposed to do. As a leader he also ensured the willing co-operation of every member of his team. I cannot forget how every week we had exchanged views regarding the Squadron personnel behind closed doors. In this regard I want to impress that wherever Squadron medical officers are posted, they must have the full responsibility for the medical care of the Squadron personnel and their families right from the Squadron Commander to the last man, only then can he discharge his duties well. But unfortunately it is not so; many a time. To that extent practice of aviation medicine suffers. I also cannot forget the briefing that was held in the

Squadron Flight Office. These sessions every day were as solemn as if in a temple or in a church. All emergencies likely to be encountered during the planned exercises were repeated to ensure everyone knew clearly whatever precise action was needed in every emergency that may arise. The Squadron Commander was so strict with the discipline in flying that he once when giving instructional conversion flight to his own commander requested him to carry out the preflight cockpit checks and when he found his Commander fumbling with the procedure; the Squadron Commander wanted to know the reason, to which the Senior Commander replied that he had read the pilots' notes but does not remember them clearly seriatim. The Squadron Commander then requested the senior officer that he would only sit in that flight as a passenger and he would come for a conversion training flight on a subsequent day whenever he is thorough with the cockpit procedures as laid down in the pilots' handbook. The lesson the Squadron Commander had learnt was that aviation is inherently safe provided all the rules of the game are strictly followed otherwise no mistakes are condoned and all mistakes have to be paid for with life or limbs and the machine. The role of the doctor in this game is obvious, as human material is more prone to failure than a machine.

I had carried out medical evaluation of aircrew as President of the Medical Board for over three years; taught aviation medicine as a designated Post Graduate Teacher of the Bangalore University; also was appointed examiner by the University for Postgraduate Diploma in Aviation Medicine and yet paradoxically I was never a specialist in Aviation medicine. It would appear to you that I am today complaining, what I could not do earlier. It is not so. As I have had to face many such instances during my career. I am thoroughly satisfied with whatever had happened and it is this lesson which I am bringing to this meeting. Let me quote Sir William Osler known to the world of scientific medicine as one of the greatest physicians. He said, the philosophy of an ideal life of a physician had three great lessons; firstly, things cannot always go your way; cultivate the gift of taciturnity (in the habit of saying very little) and learn to

consume your own smoke with extra draught of hard work so that those about you may not be annoyed with the dust and soot of your complaints. Secondly, devotion to others i.e. we are here not to get all we can out of life for ourselves but to try to make the lives of others happier and thirdly the law of higher life is only fulfilled by love i.e. charity.

There is yet another incident which comes to my mind and which taught me a lesson. I was President of a Medical Board and the medical Board was dealing with a decorated fighter Squadron Commander who had reported for a fitness certificate to fly high performance aircraft. The Squadron Commander as found to have an abnormal EEG. The Medical Board recommended that this Squadron Commander be taken off all flying duties as it was highly risky for him to fly. It was difficult for Air HQ to accept such recommendations in respect of such a Squadron Commander. Hence the Board proceedings were referred by the Air Headquarters to the then consultant in medicine who opined that in view of the fact that the pilot had no complaints whatsoever regarding his health and had not been found wanting in the discharge of his duties in any manner therefore the findings on recommendations of the board may be overlooked and the pilot allowed to continue with his duties. The Board proceedings with these recommendations were returned by the Air HQs for reconsideration of the Board, change of the recommendations and allocation of appropriate flying category. The board after due deliberations failed to agree with the recommendations of the Consultant and Air Headquarters and said, "the original recommendations of the Board stand". The recommendations of the Board were overruled by the approving authority and the officer allowed to continue flying in the full flying medical category. Few months later, while on a Mission Flight the Squadron Commander mentioned above flew as a leader of a Formation. The Formation while in a flight entered a cloud, and after flying for a few minutes came out of the cloud without the leader. On search, the leader was found in a crashed condition with no clue as to what happened, except that the pilot made no attempt to control the aircraft in the final phase of

its flight. Apparently pilot suffered disabling disorientation or some such neurological phenomenon. The lesson is quite clear. In Aviation Medicine, as in general aviation no mistakes are condoned and this is not the only incident I had in my experience which high-lighted the same principle.

Here is something I am keen to say to improve flight safety, which has been the primary concern of this Society right from the beginning. During the course of my association with Aviation medicine I have been convinced that far more emphasis is required to be laid on the study and research in Aviation Psychology. Even if we borrow knowledge from other countries in this field we shall have to adapt that to our own circumstances as our culture both in general and in aviation is significantly different. I hope I have made myself clear regarding the importance of function of human mind in relation to aviation. The whole system of mental attitudes which really determine flight safety is significant in the ultimate analysis. During the 25th Meeting of the Society held here in Bangalore in January 83 I chaired a scientific session consisting of three papers on aviation psychology and here I recall some of the observations I made at the end of that session. Firstly, I said an analysis of the accidents revealed that more than 50% of the pilot caused accident fatalities were the result of faulty pilot judgement. Although the rules require the flight examiner to evaluate pilots' judgement, they provide no definition or criteria on which the evaluation of pilot's judgement can be made except examiner's own experience. I don't think even now any concrete criteria exist by which faults in pilot judgement can be scientifically assessed. Secondly, we may examine - existing Teaching Methods in aircrew training both basic and operational and make use of the improvements now available from the laboratories, as a result of research in learning and teaching skills.

During my retired life for the last few years I have been keenly studying the interdependence of body, mind and spirit and effect of this interdependence on general body function. The indications from various studies are that

harmoneous sychronisation of the function of body, mind and spirit can lead to all round improvements of human functions whatever the field of employment. A lot of effort is being made in the Research Institutions of the West, especially in USA to understand and scientifically assess the profound wisdom found in eastern way of living, especially the ancient Indian way of improving human effectiveness by better control of the mind. I am greatly impressed with the work of Herbert Benson, Prof of Cardiology at Harvard in this regard, who has scientifically proved how effective control of the mind through Eastern way of discipline can, not only effectively, control the body's function but can also change it to its advantage. In other words in the old controversy of mind over matter the mind can be made to control the body effectively at least as regards some functions. What I want to say clearly is that there is a definite requirement to expand the study and Research concerning the field of Aviation Psychology and some of our own Indian thoughts are amply valid and require serious consideration to help aircrew, live better prolong life, be far more effective and safe in their profession. From the paper of Mr. Shastri read during this meeting, I can say that efforts are already on, in this direction but these require expansion in a bigger way.

To sum up what I have said is:

Firstly, do not bend under pressure as far as medical assessment for flying duties is concerned. You may think you are doing a favour by bending the rules to fit in but in actual effect you may be introducing a flying hazard. I have cited a case. more can be cited even from my own experience.

Secondly, if flying discipline is followed in all its aspects - aviation environment is inherently safe. In this regards, doctors and other ground duty staff are as important as the aircrew.

Thirdly, another matter concerning flight safety - I strongly recommend expansion of study and Research in Aviation Psychology to reinforce aircrew training both basic and operational to improve aircrew effectiveness and flight safety. Not only in the Service but even amongst passenger carrying civil aircrew. The aim is to

teach aircrew how to achieve peak human function during stress of flying with less chances of failure.

Fourthly, do not complain and be unpleasant even if apparent injustice has been done to you in Service as a doctor; the event may turn out to your advantage ultimately - a number of such incidence actually turned to my advantage and hence it confirmed my faith in the ULTIMATE UNIVERSAL LAW. The result is in front of you, good or bad. Remember the words of Sir William Osler, we the members of the medical profession are here to fulfil a higher purpose in life. Let us not lose sight of our heritage, and lofty ideals of our calling.

Finally, it has been a great pleasure to attend this annual meeting. It was most satisfying to learn from the performance of the Speakers and the conduction of the proceedings of the meeting that the society is not only healthy and

growing but if I am allowed to predict it has a bright future. I am sure if some others like me, the originators of this effort were present they would have been thrilled to see it bloom. I wish all members of the Society success in enhancing the academic excellence of the Society. I take this opportunity to convey my gratitude to the President of the Society for affording this opportunity to me to attend this meeting, the memory of which will last with me for a long time if not all time to come.

Thank you.

REFERENCES

1. Osler William Sir: The Philosophy of Student Life. London, and Edinburgh, E & S Livingstone, 1960.
2. Benson Herbert: Beyond The Relaxation Response. In Stress Reduction Programme, NEW YORK, Berkley Books, 1985.