International Civil Aviation Organization

WORKING PAPER

AN-Conf/13-WP/234
28/9/18
(Information Paper)
English only

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

Agenda Item 8: Emerging safety issues
8.1: Measures to proactively address emerging issues

SKYFIT - STRESS MANAGEMENT THROUGH BREATHING TECHNIQUES: YOGIC BREATHING TO MANAGE STRESS

(Presented by India)

EXECUTIVE SUMMARY

This paper intends to address the occupational stress of the personnel in aviation, be it air traffic controllers, pilots, cabin crew etc. The unprecedented growth in aviation has posed severe threat to the safety of aviation, in terms of the pressure created by capacity vs demand, on the existing infrastructure and resources. The worst hit of all is the human resource. The occupational stress due to cognitive work load of the personnel, especially in aviation can be a challenge for the safe aviation. Long term exposure to the stress is posing severe health issues like hypertension, ischaemic heart disease, diabetes, peptic ulcers and psychoneurotic disorders for the people employed in aviation. Various measures have been discussed in past like improving job planning and reliability of the work systems, improving the work environment, reduction of working hours etc. Airports Authority of India (AAI) has developed simple breathing exercises, in coordination with experts who have practiced these ancient techniques from yogic traditions, for decades and have found encouraging results in managing the stress of the aviation personnel, by just improving the way we breath.

AAI would like to share these unique and effective techniques, through its programme SKYFIT, with the aviation world, to cope up with the challenges of managing stress of pilots, cabin crew, air traffic controllers and above all air passengers.

1. INTRODUCTION

1.1 The unprecedented aviation growth, in the past few years, has posed various challenges for the aviation industry globally. One of the biggest challenge is the occupational stress for the personnel working in the high demand environment.

1.2 The long term exposure to high stress is affecting the health of the personnel severely, leading to conditions like hyper-tension, diabetes, low energy level, headaches, upset stomach, aches, pains, tense muscles, chest pain, rapid heartbeat, insomnia, frequent colds and infections etc.

1.3 Many studies have been conducted in the past regarding stress development process and interventions like Interventions on the external socio-economic environment, on technology and work organization, working place and task structure, improving individual responses and behaviour, and by health protection and promotion etc.

1.4 Stress in the aviation industry is a common phenomenon composed of three sources, which are physiological stressors, psychological stressors and environmental stressors.

1.5 Many human biological and behavioural functions vary regularly and systematically over a period of about 24 hours. These variations are called circadian rhythms, which are internally generated by a self-sustaining or autonomous biological clock located in the hypothalamus.

1.6 Changes in work shifts and trans-meridian flight result in asynchrony between aviation personnel's circadian rhythms. This lack of synchrony results in shift-lag syndrome (due to changes in work schedule) and jet-lag syndrome (due to trans-meridian flights) severely affects the body clock.

1.7 An airline pilot can be an extremely stressful job, due to the workload, responsibilities and safety of the thousands of passengers they transport around the world. Being a pilot is considered a unique job that requires managing high workloads and good psychological and physical health. Pilots are considered to be highly affected by stress levels.

1.8 The crewmembers, even under ordinary conditions, face environmental stressors such as noise, vibration, decreased barometric pressure, and accelerative forces. Fatigue and altered sleep-wake cycles also may be factors, especially for crewmembers on flights that span several times zones.

1.9 Air traffic control is a highly demanding job with high stress levels due to the complexity involved balancing the controlling numerous aircraft in an efficiently, expeditiously and safe manner whilst also catering for contingencies such as weather development and aircraft emergencies etc. Due to this complexity, controllers require high cognitive capacities which include spatial scanning, movement detection, image and pattern recognition, prioritizing, visual and verbal filtering, coding and decoding, inductive and deductive reasoning, short- and long-term memory, and mathematical and probabilistic reasoning.

1.10 At increasingly high levels of stress, degradation of performance occurs because with higher arousal, we tend to focus solely on the main task, ignoring other peripheral information, contributing to errors.

1.11 Practices combine physical poses, controlled breathing, and meditation, in fact, it encompasses all –body, breath, mind and spirit. The techniques may help reduce stress and thus taking care of psychosomatic and lifestyle diseases like hypertension, diabetes, pulmonary disorders and mental illnesses. Everyone can be benefited by these exercises irrespective of age, gender or physical fitness level.

1.12 Stress and tension can cause us to breathe in a rapid, shallow way, which can lead to more anxiety. The techniques to breathe more effectively, using the diaphragm and utilising the whole lung capacity also called the "pranayama techniques", which includes a lot of scientifically backed breathing exercises, are useful for reducing stress.

2. DISCUSSION

2.1 The yogis of the ancient traditions have closely studied the association of breath and the mind. All of the body systems are either INVOLUNTARY or VOLUNTARY ones. Breathing is the only system that can be made voluntary at any time. And this is the key to controlling the nervous system on which our breathing exercises are based. One of the main aims of breathing exercises /practices is to gain control over the nervous system, which in turn enables one to control mind and its associated functions like thinking, emotions, analytical and learning powers, which leads to increased awareness, sensitivity and controlled responses. For every emotion there is a different breathing pattern. By consciously controlling the breath and simulating the breathing pattern one can change the thought processes of the mind, as and when required. This is significant as we can influence our nervous system, the treasure house of all human potential and possibility.

2.2 The expert team behind SkyFit have followed the renowned and scientific techniques of "pranayama" and discovered the phenomenal benefits that accrue by varying the rate and duration of breathing and holding the breath at different points. This is done consciously to effectively intervene in the predominantly autonomic breathing to get holistic development of the body, mind and spirit. By taking charge of our breath we can take charge of our nervous system especially autonomic nervous system and thus markedly reduce the stress levels. This in turn leads to controlling the psychosomatic disorders including STRESS.

2.3 AAI has worked closely with the experts of the yogic tradition and medical experts, to develop simple breathing exercises that can help in managing all kinds of stress. The session SKYFIT organised by AAI along with yoga and breath works experts, can help the personnel involved in aviation industry at various levels, in learning these simple yet effective breathing techniques, to manage stress in a remarkably efficient manner.

2.4 On 11 December 2014, 177 Countries in the United Nations General Assembly recognised that yoga provides a holistic approach to health and well-being and wider dissemination of information about the benefits of practicing yoga for the health of the world population. Yoga also brings harmony in all walks of life and thus, is known for disease prevention, health promotion and management of many lifestyle-related disorders.

3. CONCLUSION

3.1 **SKYFIT** is the outcome of coming together of experts from yogic traditions and medical science to evolve simple technique especially designed for aviation personnel i.e. pilots, cabin crew, air traffic controllers and air passengers. It embodies unity of body, breath and mind; thought and action; balancing restraint and fulfilment; harmony between man and nature and a holistic approach to health and well-being. "Right breathing" is the most effective and by far, the most enjoyable tools to unwind and relax internally and externally. Stress is not something we can completely shelter from, but through these simple techniques, which includes correct way of breathing (diaphragmatic breathing), breath awareness and consciously controlled breathing exercises**,** we can learn how to reduce the impact of stressful situations and set ourselves up for a much happier, healthier and positively controlled future. AAI can help you learn these simple techniques through its programme **SKYFIT**.

— END —