

Lifestyle requirements for better aircrew fitness

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Changes in lifestyle become mandatory for optimum comfort and fitness levels in an aircrew. The dimension of aircrew fitness and lifestyle requirements are discussed. The primary factors affecting aircrew fitness include predominantly personal measures such as food habits, clothing, physical activity, tobacco, alcohol, sleep and rest, stress dissipation, social interaction etc. The work environment and various administrative measures can equally influence aircrew fitness.

Keywords: Aircrew maintenance, personal health care, operational efficiency, fatigue, alcohol.

Precise definition of an aircrew lifestyle is a Herculean task for the concept of lifestyle itself is very ambiguously defined as to the way one lives in the society. Speaking of requirements one has to integrate the whole culture behaviour patterns, quality of life and habits all of which develop over a long period by continuous interactions engendered by the environment. Thus lifestyle of aircrew from the days of the glorified flying club to the present era of flying war machines also has undergone a sea change.

Man always seeks a comfortable life. So his lifestyle in natural course becomes comfort oriented. Thus arises the conflict a comfortable lifestyle needn't be healthy. Changes in lifestyle become mandatory for optimum fitness levels. Better the fitness level desired, greater is the demand on the pleasant and comfortable aspects of life.

Dimensions of aircrew fitness

With advanced computers and state of art sensors coupled to better aerodynamics of modern aircraft and the operational requirement to fly in any weather

or terrain against well-equipped defence systems, man has been overtaken by the machine. Gone are the days when man flew the machine, today he must fly with the machine. Aircrew should not only withstand hypoxia, DCS, G forces, temperature extremes, noise and vibration, visual problems, disorientation and problem of survival after escape but must also be able to process and integrate a mass of information from various subsystems and take critical decision within no time. With > 50% accidents today being due to human errors, no longer can aircrew fitness be boiled down to a bunch of numbers - height, weight, pulse, BP, serum cholesterol or the number of miles run in specified time. Physical fitness has to be accompanied with excellent psychomotor abilities, perceptuocognitive faculties for information processing and split second decisions. The aircrew pilot in addition is an officer with a social function also. So aircrew fitness no longer is a special subset of general health but is a superset with various interacting subjects of physical, mental, emotional, spiritual, social and occupational indicators. In both air and ground, good

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head and hands with a strong heart with positive attitudes to self and other are vital for aircrew to realise maximum potential for excellence.

Dimensions of lifestyle requirements

Each lifestyle has its own socioeconomics ignoring which means failure. Thus lifestyle advocated for officer aircrew can't be duplicated in toto for airmen aircrew. Personality factors will influence the success of advocated requirements. Strong emotional undercurrent predisposes to addition and fatigue. Moreover, there is no personality assessment for airmen aircrew at selection unlike SSB for officers. Thirdly, requirements advocated have to be flexible to cater for variation due to type of aircraft flown, base altitude and operational role of unit and proximity to a well developed civilian setup. Thus lifestyle at Thois or Chabua will need greater introspection and local resource generation while an outgoing glamorous mode is probable at Delhi/Chandigarh. Finally, is the dimension of temporal variation in light of new knowledge of risk factors. Thus a sexually promiscuous lifestyle probably tolerable once is incompatible with aircrew fitness today with risk of HIV infection and permanent grounding. Similarly destressing of life is required to combat the rising trend of hypertension in aircrew today.

Lifestyles past to present problems

Few decades back, lifestyle was limited in material aspects but socially it was rich - more parties and dances, higher number of drinkers and smokers flying low performance aircraft with less exacting demands on aircrew. Moreover all health risk factors were less well defined. Service had a pristine glory tag to it. Today discussions with aircrew reveal one common complaint - high stress and fatigue with apparent lack of perception by people who matter. Thus individual is always on the run - there's an ap-

parent paucity of time. Gradual erosion of stature and economic superiority alongwith decreased entry into services has led to a lesser number trying to fly a bigger force. Manpower limitations with personal frustrations due to unfulfilled leave, disrupted family life with frequent movements, inadequacy of facilities and increasing compulsion to do what one is not trained to do have caused higher basal stress and fatigue. Superimposed change of generations of aircraft higher performance more draining mentally and of man - more individualistic, more career oriented and materialistic, adds fuel to fire.

Though as oldtimers point out, present generation is drinking and smoking less (compared to their days) and instead diverting priorities to the material possessions and is more mobile, the life is more stressful today with shortage of leisure time. Whatever is available, mental stress and fatigue lead to decreasing receptivity for fitness activities. Thus today cardiovascular and psychiatric morbidity is higher than ever before. Present lifestyle is plagued with sedentary habits, inadequate and irregular nutrition, greater mobility with greater accidents, inadequate recreation, lowered comfort level and basic amenities, risky sexual mores and dwindling social network.

Required lifestyle for better aircrew fitness

Maxim to be followed is - EXCESS IS HARMFUL. Thus, extreme physical conditioning is not required, rather moderate conditioning with mental strengthening as suitable for Air Force should be the aim. It should be applied from young age as there is an age-dependent decrement in faculties, e.g., aerobic fitness decreases after 20 years of age. Thus the transition from civil to military life is most significant but the fitness achieved is supraoptimal and nonsustainable in later life without practice. Psychological imprinting for self health-risk appraisal and need to continue positive lifestyle have to be taught there and periodically reinforced at unit level.

Action has to be taken by the individual, society and administration for the kind of lifestyle required for better aircrew fitness.

Primary requirements

Predominantly personal measures:

1) *Food Habits*: Present practice of skipping breakfast before the morning sorties has to be stopped. Regular inflight meals for > 4 hr flights, adherence to regular food timings in the messes/home is required to prevent dyspeptic disorders. Around 2400 kcal of nutrient dense, balanced, palatable food is advocated. Junk food and fried food-stuff have to be curtailed. Daily different menu in messes is essential to maintain interest in food. Overeating cholesterol rich food like butter, pastries etc. is to be stopped. Adequate fluid intake to cope with heat stress is vital. It is common to observe people not washing their hands before/after meals and instead relying on napkins, a Western practice strictly condemned. Traditional Indian habits of hand washing hygiene have to be followed.

2) *Clothing*: Avoid giving undergarments to the *dhobi* for washing. Regular cleaning of overalls and flying clothing is required. Probably an important step will be the abolition of mess dress and instead adopt informal civil clothes after a full day in uniform. A number of aircrew are seen to avoid the mess on occasions especially winter due to this. A formal dress does not allow the complete winding up which is required after a busy day.

3) *Physical activity & weight consciousness*: It promotes physical form, reduces weight, betters self-esteem with a better self-image leading to a more alert and emotionally stable person. Flight programmes need to be rescheduled to cater to a cross-training schedule of > 30 min of weight training and abdominal and neck exercises with moder-

ate aerobic training (3-4 Km run/jog or a 1 hour walk with a brisk component of 12 min for a mile). Deep breathing exercises can be done on getting up from the bed. Outdoor games of volleyball, football in addition to the traditional squash and billiards, swimming pools and 24-hr gyms need to be promoted. Degeneration of PT into another routine to be followed as seen in most AF stations has to be reversed and regular fitness assessment like quarterly BPET in the army is needed. But unlike army, heavy exercises or endurance training is not desirable in view of the reported adverse effects on G tolerance and higher incidence of airsickness.

4. *Socially acceptable toxins*: One acknowledged heartening aspect is the decreasing prevalence of these in the aircrew today.

Tobacco: With its proven cardiorespiratory morbidity and carbon monoxide generated decreased altitude and hypoxia tolerance, diminished night vision capability and long term neuropsychological sequelae Tobacco Road is a dead end for aircrew. Complete ban by declaring working hours as non smoking zones and decreasing social acceptability is required. For the addicted, acute withdrawal before flight is not advisable due to adverse effects on performance. A gradual withdrawal is essential.

Alcohol: Notwithstanding claims of cardio protective effects of 60 ml alcohol a day, only nil consumption is consistent with aircrew fitness. Social acceptability has to go away-substitute cold drinks, avoid liquor as a measure of hospitality. Strict bar timings and limiting consumption to a maximum of 1 glass beer / 2 small pegs alongwith food is needed. In fighter bases, a semblance of alcohol discipline still exists being limited to the weekends but the same is not true of transport/chopper base. In all cases a > 12 hr bottle to throttle time is required.

Caffeine: Limit to 250/300 mg/day or 2 cups of coffee alongwith 1-2 glasses of water to reverse the dehydrating effect. Avoid bedtime coffee/tea.

Other drugs: They have no place in the lifestyle of fit aircrew.

5. Sleep and rest: Minimum 6-8 hours of sleep is essential to avoid ill effects on aircrew mentation and neuromuscular coordination. Preferable to avoid flying in the latter half of night-a period of maximum sleep drive and accidents. Ill planned and long working hours, late night movies/parties should be avoided. In long duration flying with crossing of time zones, possibility of jet lag to be kept in mind. On ORP duties rest rooms should be soundproof and air-conditioned.

6. Stress and fatigue dissipation: Various factors discussed till now contribute to stress in aircrew. Stress on performance without due attention to comfort wears down a person physically and mentally and lessens motivation for health promotion-individual becomes an automation doing things mechanically and craves for comfort even at the cost of fitness. All work and no play leads to a state of chronic fatigue. Deactivation can be done by :

- (a) Avoid being a workaholic it leads to a tunnel vision, curtailment of available time for recuperation. Do not carry office to home
- (b) Proper planning of workschedule. Flying schedule planners themselves have been aircrew and can contribute a lot by proper planning
- (c) Give yourself time for leisure and recreation. In whatever limited time available involve oneself in a casual stroll, calling on friends, reading, movies, games, music, television and hobbies.
- (d) Practice stress coping strategies-yoga, meditation, biofeedback etc can be learnt, provides insight, mental calm, self control and discipline; increases tolerance and decreases accidents by controlling impulsivity - a major cause of flying indiscipline in the young and adds to physical & social performances.
- (c) Positive mental attitude (PMA) deactivate unhealthy habits by saying no when required,

respect self and others, set limits and accept that some things can't change. Reinforcement can be done by studying works on art of positive thing

- (f) Spirituality and religion serve as outlet for stress
- (g) Frequent breaks by spells of leave.

7. Self development: Longterm fitness of aircrew depends on their maturation in life. Further education rather than stagnation should be a part of lifestyle. Broadened outlook, avoidance of superiority complex vis-a-vis ground crew are the goods relevant for better cockpit resource management especially in multicrew aircraft. Self-development by choice of ones company following the career with ones heart will make it fulfilling familiarity of all aircrew with computer systems reaps at the workplace where most of the avionics is computerised.

8. Social network: Traditionally in a flying squadron there had been a very close interknit family feeling which acted as buffer during periods of absence of aircrew. However, career orientation and individualisation have strained this. This also served as buffer for bachelors - thus it's common to find them bouncing onto the families for dinner; also this removes them from risky behaviours. Interactions by parties, gatherings and picnics are essential with few prerequisites

- (a) Shouldn't be too frequent becomes another routine to be followed monotonously
- (b) Greater interaction by all
- (c) Informal atmosphere unofficial protocols.
- (d) Limited drinks.
- (e) Not late night - shouldn't extend beyond 10 O' clock or if late night should be scheduled to the weekends with no flying next day. MO and authorities to ensure adequate sleep, rest & bottle to throttle time. Since illness piggybacks on emotional stress, positive relation-

ships with all are essential for health. As a group introspective self-interested behaviour should be avoided.

9. *Sexual lifestyle*: Though sex is still a taboo in our society, with rising incidence of extramarital sex in our society amongst youngsters it can't be ignored due to the AIDS epidemic. Probability of dangerous liaison for aircrew is very high as

- (a) Flying is glamorous-higher attraction potential
- (b) Sex serves as an outlet for release of monotony especially after coming from isolated nonfamily bases. Thus easy accessibility to illicit sex is an open secret in north-east and big metros. A safe lifestyle of single partner, marriage, self-gratification, usage of condoms and diversion of urge to other activities like reading, religion is the only answer.

10. *Health discipline*: Voluntarily visit the doctor regularly, avoid self-medication, acquire knowledge of risk factors for flying fitness, take antimutagenic measures and consume foodstuff from authorised sources only.

11. *Safe driving*: It is not uncommon to find drunk youngsters in squadrons speeding away at an unearthly late night hour for fun sake. Due to high chances of RTA, head injuries and longterm sequelae, usage of helmets, observance of speed limits and ban on drunken driving has to be enforced. Cycling or walking for short distance are stressed as part of cardiovascular fitness and shouldn't be taken as an insult to self-status.

Secondary requirements

Administrative measures contributing through psychological factors

Accommodation: It should be independent, well-ventilated and prompt repair services provided otherwise minor problems act as irritants to prevent optimal functioning. Chronic dampness predisposes to allergies. It should be well distanced from flying areas to minimise auditory effects and fatigue. Inadequacy with consequent stay in civil areas means lower social security, is economically draining, longer travel times add to fatigue and lower social interaction essential for good interpersonal relationships.

Communication: Provision of telephones to all officers will improve interaction commitments and feedbacks can be directly conveyed. Possibility of direct communication with family in case of need when away from home will be psychologically reassuring and person can give his optimum.

Ancillary facilities: Adequate schooling, banking, postal and shopping facilities with fresh vegetables and fruits, cafeteria for outing, movie halls, cable network and public transport linkage to nearest city area enriches the lifestyle, leads to a happy homelife and a relaxed aircrew.

Conclusion

Work environment changes are vital for better aircrew fitness. Central point is the stress and fatigue due to perceived excess commitments which mean an ideal lifestyle is difficult to adopt. Not only a physically fit but an information technology compatible person is required for success in today's flying environment. A good friend circle, a happy family life and insight into self and peace of mind are also part of fitness. Economic confidence is mandatory to achieve a better fitness standard for only then social status and purchasing power will coincide with job satisfaction and available time for a positive lifestyle.