Indian aviation, a case of air safety at a discount

The oft-repeated statements by the Union Minister for Civil Aviation, Jyotiraditya Scindia, and the Directorate General of Civil Aviation (DGCA), that, first, 'safety is paramount' and, second, 'India has one of the fastest growing aviation sectors', are ones that are at complete variance with each other when there are two very serious safety issues staring at aviation in India.

In June 2023, the Minister had written to the Kerala government implying that the safety of passengers was being gravely compromised due to the non-provision of the Runway End Safety Area at Kozhikode's Karipur airport. The provision of this safety feature was explicitly recommended by the Aircraft Accident Investigation Bureau (AAIB) after its investigation and recommendations following an air crash at the airport on August 7, 2020. The Minister said that the Ministry would be "left with no choice but to proceed with the necessary action of curtailing the runway length for safe aircraft operations at Calicut airport from 01.08.2023 unless the land is handed over to the AAI [Airports Authority of India] immediately".

We are now in April 2024 and just a couple of weeks and months away from the southwest monsoon, and, later, the northeast monsoon. Yet, no land has been made available and flights continue at the airport without restrictions.

In January 2024, Mr. Scindia, in a post on X, had said: "... After in-depth analysis of pilot rosters, fatigue-related reports and direct feedback from pilots, we have introduced revised "FDTL Regulations" [Flight Duty Time Limitations] that include, increased rest periods, redefining night duty, and regular fatigue reports to be shared by airlines." The deadline for their implementation was June 1, 2024. But airline owners in India went rushing to the Ministry and the DGCA stating that they would need additional crew to meet these requirements and hence flights would need to be curtailed. In March 2024, the DGCA deferred the "deadline" of June 1 indefinitely.

All this raises the question. Is safety paramount for the Minister and the DGCA? Or are the commercial requirements of airlines taking priority over passenger safety? Going by the actions so far, air passengers should be aware that they are flying 'purely on a horoscope'. The authorities and the airlines are clueless on safety standards.

Systems overseas

Why has the International Civil Aviation Organisation (ICAO) introduced the Fatigue Risk Management System (FRMS) as a mandatory requirement? It is with good reason. The study of various accidents and serious incidents due to fatigue, has shown sleep deprivation and impaired reaction times to be identified as a major cause. Countries such as Japan, Singapore and the United Kingdom lay a lot of stress on fatigue management and also rest periods for flight crew. They follow a system where pilots get two days off every week to reset their body clock and recover from cumulative fatigue. For long haul flights, they are provided augmented rest on return to their home base.

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With airline managements in India appearing to prioritise commercial needs over passenger safety, the Civil Aviation Ministry and the regulator need to act

The common refrain one hears is that pilots are overpaid for the work they do, when even senior executives in airlines earn less! In 1985 when I was part of the Central Executive of the Indian Commercial Pilots Association, this was the argument put forth by the Director of Personnel and Director Finance of the airline, that is Indian Airlines (IA), to deny pilots an increase in emoluments. I highlighted the huge difference between the working conditions of pilots and ground personnel. Pilots got just 30 days of annual leave and a day off every week due to FDTL limits. Contrast this with ground personnel who got weekends off, which is 104 days, all public holidays and their annual leave. I told the IA management that pilots would forego the increase and would also work the same number of days that ground personnel did in office.

People fail to understand that a pilot is a human being and not a machine. He or she needs time with their family too. Two days off in a week is a must to be with family.

The human factor is distant

Airline rosters never take the human factor in account. The limits laid down by the DGCA do not mean that a good airline system cannot utilise pilots to a lesser number of flight time and duty hours. When airlines place orders for aircraft, airline owners go by the DGCA Civil Aviation Requirements (C.A.R.) for scheduled transport which lays down the minimum crew requirement. If it is compared with the FDTL C.A.R., the requirement of crew would be more than double, depending on the type of operations. So, does the DGCA monitor crew numbers based on the requirements in the FDTL C.A.R.? The answer is no. After all, it would affect the news headline grabbing effect of a large aircraft order and downplay the hype around the country being the "fastest growing" in aviation.

Financial stress can have a very adverse result on a pilot. The United States National Transportation Safety Board (NTSB) report on a Silkair crash on December 19, 1997, which claimed 104 lives, identified the issue of the captain's gambling debts and pilot suicide. In the Egyptair crash on October 31, 1999, too, there were similar findings.

I refer to the two accidents as in addition to pilot fatigue, the authorities in India do not pay heed to the dangers of financial stress. It is shocking to have reports that the copilots of Vistara, the only flourishing airline under the Tatas were given an ultimatum to 'sign their new pay structure contract by the end of the day or else lose their command position' when Vistara is eventually merged with Air India. It would have meant a drop in income by almost 50% for a young pilot who has invested over a crore of rupees to obtain his licence to fly and who is up to the neck paying equated monthly instalments towards the loan. Does Vistara's management consider it safe to subject a young mind to such thoughtless pressure? Will the flight be safe when the pilot's mind is worrying about his loan? The Tatas are known to care for the welfare of their employees. It is surprising, therefore, that when it is an issue that concerns pilots, the issue takes a back seat.

Why are airlines looking at copilots as only an occupant on the flight deck? They are the airline's future captains and are a long-term investment in an airline's growth. The human resource departments of airlines have failed. Airlines are bound to lose even their captains who will move to an airline that operates with human values. Airline owners may call this 'illegal poaching' but in a country where lawmakers switch sides for handouts, blaming pilots is unfair. After all, these airline-friendly rules and recommendations made by DGCA cannot be the result of a mere "over the table" approach. The electoral bond issue is a tale that has exposed many, and aviation is not an exception to this.

Some solutions

To meet pilot shortage, there is an immediate solution. India should adopt the ICAO Annex 1 Standard which allows a member state to recognise another ICAO licence and issue an Indian licence on the basis of only an Air Law examination and a Class I medical. There will be hundreds of qualified and experienced Indian captains working abroad who will return to India if the hurdles that the corrupt system uses to prevent them from returning are demolished.

The DGCA, in collusion with airline management pilots, has a rule that makes it mandatory for an instructor or an examiner to be an active pilot. However, they will accept a retired pilot working in a training centre abroad to carry out the mandatory checks on Indian pilots. Retired pilots can be utilised for simulator training. Such a step will also release a large number of trained pilots for active flying

Hanging on to rules that were drafted in 1937 and a system that has large-scale corruption will never result in Indian aviation shining. As for the Tatas, if they want to make their merger of four airlines result in a trouble-free world class airline system, they need to introspect deeply over the importance of the human factor in aviation. Finding excuses such as 'Air Traffic Control delays' for large-scale flight disruption – as Vistara cited– will cut no ice. It is transparency and building brand loyalty that will help them regain their past glory in aviation.

Marching ahead with technology absorption

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. This theme underscores the Army's steadfast focus on embracing technology to transform itself so as to keep ahead of adversaries in the context of the evolving character of warfare. The means and end in this regard are visualised under the umbrella of Atmanirbharta.

The absorption will be mainly in terms of disruptive technology (DT) comprising artificial intelligence, autonomous weapon systems such as drones, sensors, robotics, space technology, and hypersonic weapon systems. Several nations, led by the United States and China, have remarkable accomplishments in the field of DTs. The strategic competition and engagements in the future are going to be inevitably decided by the edge a nation possesses in absorbing these technologies.

In military parlance, absorption implies the acquisition, adaptation and integration of technologies into existing structures called legacy systems. These cover various nuances that are usually not apparent to the uninitiated. In addition, a few misnomers prevail *vis-à-vis* the absorption of DTs. Certain facets are enumerated below for a nuanced understanding of the issue.

To begin with, time-tested weapon platforms and tactics are here to stay, even with the induction of DTs. It is more about discovering a practical use of the new discoveries rather than about the discovery *per se*. As said, integration as part of absorption wherein the new DTs complement existing platforms is crucial. Discarding the prevailing systems to be substituted by the new will not necessarily be the way ahead.

Complimenting legacy systems

Although the new technologies could significantly alter the character of future wars we must still refrain from being lulled into complacency because of the mere acquisition of technology.

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The Indian military is moving in the right direction, but the challenge lies in sustaining technology absorption with a nuanced understanding of the requirements

The strategies that military organisations use to employ technologies will be critical in understanding their effects on the battlefield.

Analysts who see a military revolution in technology, usually argue that new technologies have made the modern battlefield more lethal. However, it is brought out that 'realised lethality', as opposed to the visualised 'potential lethality' in recent wars such as Russia- Ukraine and Armenia-Azerbaijan (Nagorno-Karabakh), is not very much different from that seen in wars of an earlier era. This corroborates the fact that technological advances will not be the sole determinative in war and are only a part of what shapes outcomes.

Also, as we have seen in the ongoing Russia-Ukraine war, the initial benefits that Ukraine could muster no longer gained traction as the war progressed. One of the reasons behind 'advantage Russia' on the battlefield now is in the Russian army employing traditional methodologies to fight the war. Aspects such as consolidating traditional defence lines and a stronger military industrial base are what matter finally. The Indian military by focusing on DTs and indigenous upgrades in defence manufacture in tandem, is certainly striking the way ahead.

Adapting to new conditions is crucial

Technical countermeasures in wars quickly limit the performance of new technology-enabled weapons employed by an adversary. The most important adaptations are often not technological but operational and tactical, i.e., how a military fights at various levels. They involve changes in the way armies use the tools at their disposal. Over a century ago, armies developed tactics that reduced their exposure to enemy fire by exploiting dispersion, cover and concealment. Such practices hold even more importance in the current era.

In present battle conditions, weapon platforms such as tanks must adapt to become more survivable. This will require a change in tactics and a greater integration of different types of capabilities. With a plethora of sensors on the battlefield, it has become almost impossible to hide. Tanks, for example, will have to operate widely dispersed, accompanied by electronic warfare units to detect and jam aerial platforms of the enemy. Similarly, the infantry on the battlefield, while operating dispersed will need an excellent standard of junior leadership to lead men in compartmentalised and high-tech battles.

Planning ahead

Rather than discarding conventional platforms in favour of purely digital solutions, the technology and its attributes need to be at the centre of planning for future plans. This will be a process that starts with the acknowledgement of vulnerabilities and sensitivities and the gap between them.

An understanding of the latest technologies, their potential, and the context in which they can be utilised are essential. The absorption will have to visibly manifest itself at the unit levels, as against being controlled only at the higher levels. This democratisation in employing technology at cutting-edge levels is an imperative to usher in true transformation.

Technology absorption will also necessarily include several macro level aspects such as organisational restructuring, the management of human resources and cultivating specialists not merely at the higher levels but also decentralised at execution levels, civil military fusion, having a structure and policies to ensure data integrity, and having a procurement policy that is applicable to DTs.

The Indian military is moving in the desired direction but the challenge will be to sustain this with a nuanced understanding of the requirements as applicable. In this context, there are many lessons from recent and ongoing wars, and should not be lost sight of.