April 2024

100 KNOTS

India's Aviation Ecosystem

Flight Operations
Altimeter Setting for Approach

Helicopter Operations
'Mandal Commission' for Indian Helicopters

Report
March Fleet Report

Health
Airsickness Prevention and Treatment

Light Sports Aircraft
An opportunity for India's Aviation and Flying Schools

Queries and Suggestions
Mail: editor@100knots.com

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Dear Community Members,

Starting in May, 100 Knots will mail high-definition hard copies of the monthly magazine. This service is completely free of charge and will be sent to eligible organizations after an internal review.

Individuals wishing to have copies or organizations not qualifying may also register. However, there will be a small mailing fee for those parties.

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- Scheduled Operators and Respective Training Departments
- Non Scheduled Operators
- FTOs
- Flying Schools
- Institutes engaged in Aviation
- Aviation related Authorities

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Looking forward to your responses.
Best regards,
100 Knots Team

editorial

Preet Palash
Editor, MD

Dear Colleagues,

Welcome to the April 2024 issue of the 100 Knots Magazine.

Our industry stands at a pivotal juncture, where the winds of change beckon us toward new horizons. The pace of technological advancement in aviation is breathtaking, offering us unparalleled opportunities to revolutionize every facet of our industry. From electric propulsion systems and autonomous aircraft to advanced air traffic management solutions, the possibilities are as vast as the skies themselves.

Yet, the realization of this vision hinges not only on technological prowess but also on the framework within which we operate. Openness in policy does not imply recklessness or laissez-faire attitudes; rather, it signifies a willingness to adapt, evolve, and harness the full potential of emerging technologies while upholding the highest standards of safety and accountability. It requires a departure from antiquated regulations that stifle progress and hinder experimentation, towards a more agile and responsive regulatory framework that encourages innovation while safeguarding the interests of all stakeholders.

In this edition, we share shed light on some disruptive technologies that not only promises to enhance safety, efficiency, and sustainability but also unlocks avenues for unprecedented economic growth. It is with great anticipation and enthusiasm that we extend this message, urging all stakeholders to embrace the transformative power of technology for the collective growth of aviation.

As always, Contributions, comments, and feedback is always welcome. All papers are received with a high degree of enthusiasm and will find a home in future issues.

Our sincere thanks to all the contributors for their support and interest

Together, let us soar to new heights.


SriLankan

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New Deliveries

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	Airbus A350-900	1
	Viking DHC-6 Twin Otter	1
Total		15

Returns

	Boeing B737 8 MAX	1
Total		1

Fleet Size by Airlines

	367
	137
	70
	71
	66
	24
	20
	8
	4
	2
	3
	7
	1
	1

Deliveries

		VT-BHK	01-Mar	Viking DHC-6 Twin Otter	Flybig
		VT-BXL	02-Mar	Boeing B737-800 MAX	Air India Express
		VT-RTS	07-Mar	Airbus A320 NEO	Air India
		VT-BXN	09-Mar	Boeing B737-800 MAX	Air India Express
		VT-TQX	14-Mar	Airbus A320 NEO	Vistara
		VT-IQU	14-Mar	Airbus A320 NEO	Indigo
		VT-JRE	15-Mar	Airbus A350-900	Air India
		VT-TQW	20-Mar	Airbus A320 NEO	Vistara
		VT-BXO	20-Mar	Boeing B737-800 MAX	Air India Express
		VT-BXK	22-Mar	Boeing B737-800 MAX	Air India Express
		XU-729	26-Mar	Airbus A320 NEO	SpiceJet
		XU-727	26-Mar	Airbus A320 NEO	SpiceJet
		VT-RTL	26-Mar	Airbus A320 NEO	Air India
		VT-TSN	27-Mar	Boeing B787-900	Vistara
		VT-RTY	31-Mar	Airbus A320 NEO	Air India

AIR INDIA

A319-100	A320-200	A320 NEO	A321-200	A321 NEO	A350-900	B777-200	B777-300ER	B787-800	Total
10	9	44	13	4	3	8	19	27	137
		▲3			▲1				▲4

AIR INDIA express

B737-800	A320-200	A320 NEO	B737 MAX 8	Total
26	23	5	17	71
			▲4	▲4

vistara

A320 NEO	A321 NEO	B787-900	Total
53	10	7	70
▲2		▲1	▲3

IndiGo

A321 NEO	A321 P2F	A320 200	A320 NEO	ATR 72	B777-300ER	Total
94	3	31	192	45	2	367
			▲1			▲6

SpiceJet

A340-300	B737-700	B737-800	B737-900ER	B737 MAX 8	DHC-8	Total
2	8	18	3	11	24	66
▲2				▼1		▲1

Akasa Air

B737 MAX 8	Total
24	24

STAR air
Connecting Real India

ERJ 145	ERJ 175	Total
4	3	7

एलाइंस एअर
ALLIANCE AIR
Connecting India

ATR 42	ATR 72	Total
2	18	20

fly91

ATR 72-600	Total
1	1

B737-800	B757-200	Total
2	6	8

DHC-6	Total
3	3
▲ 1	▲ 1

B737-800F	Total
2	2

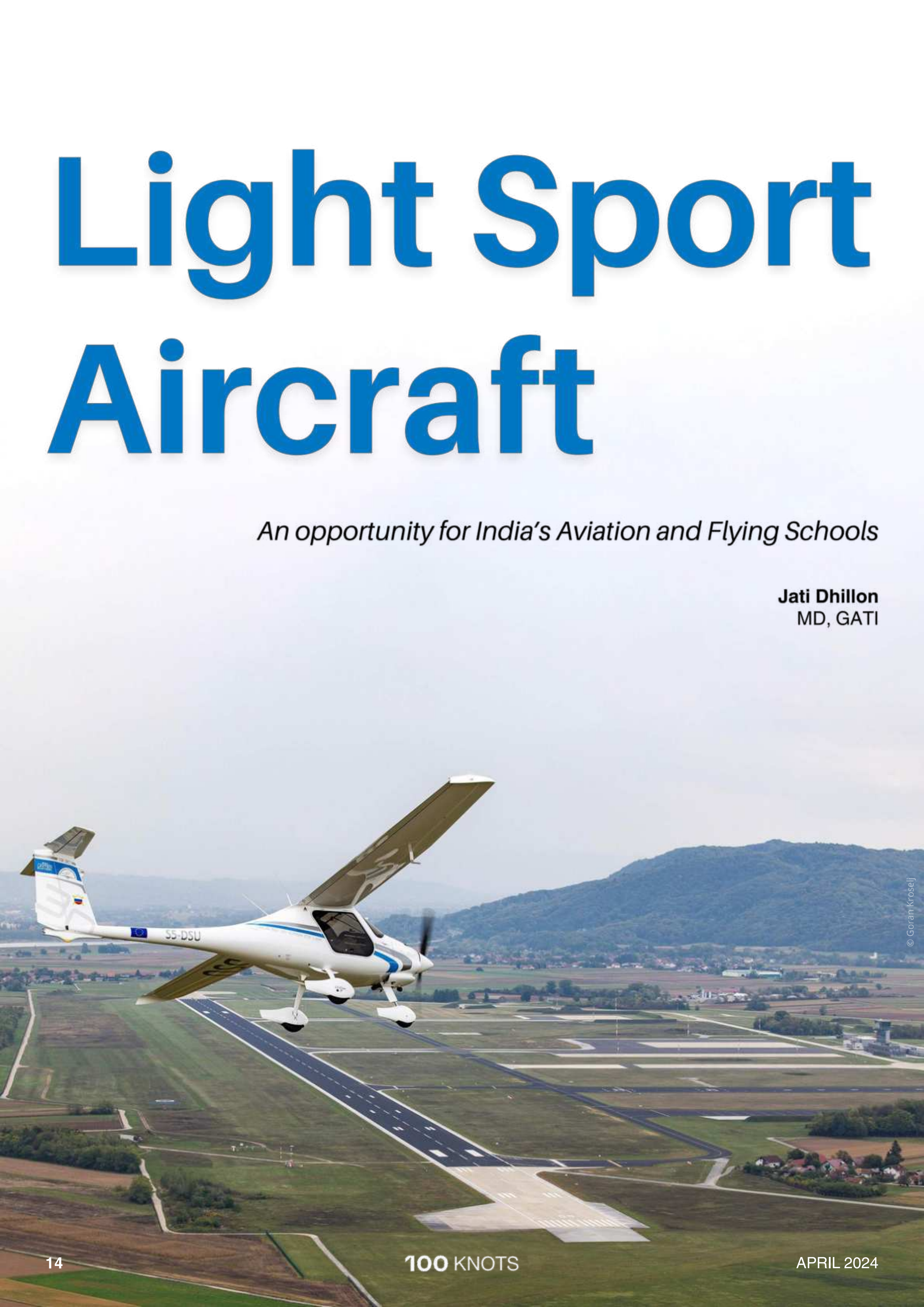
A320 P2F	Total
1	1

CRJ 200	Total
4	4

Light Sport Aircraft

An opportunity for India's Aviation and Flying Schools

Jati Dhillon
MD, GATI



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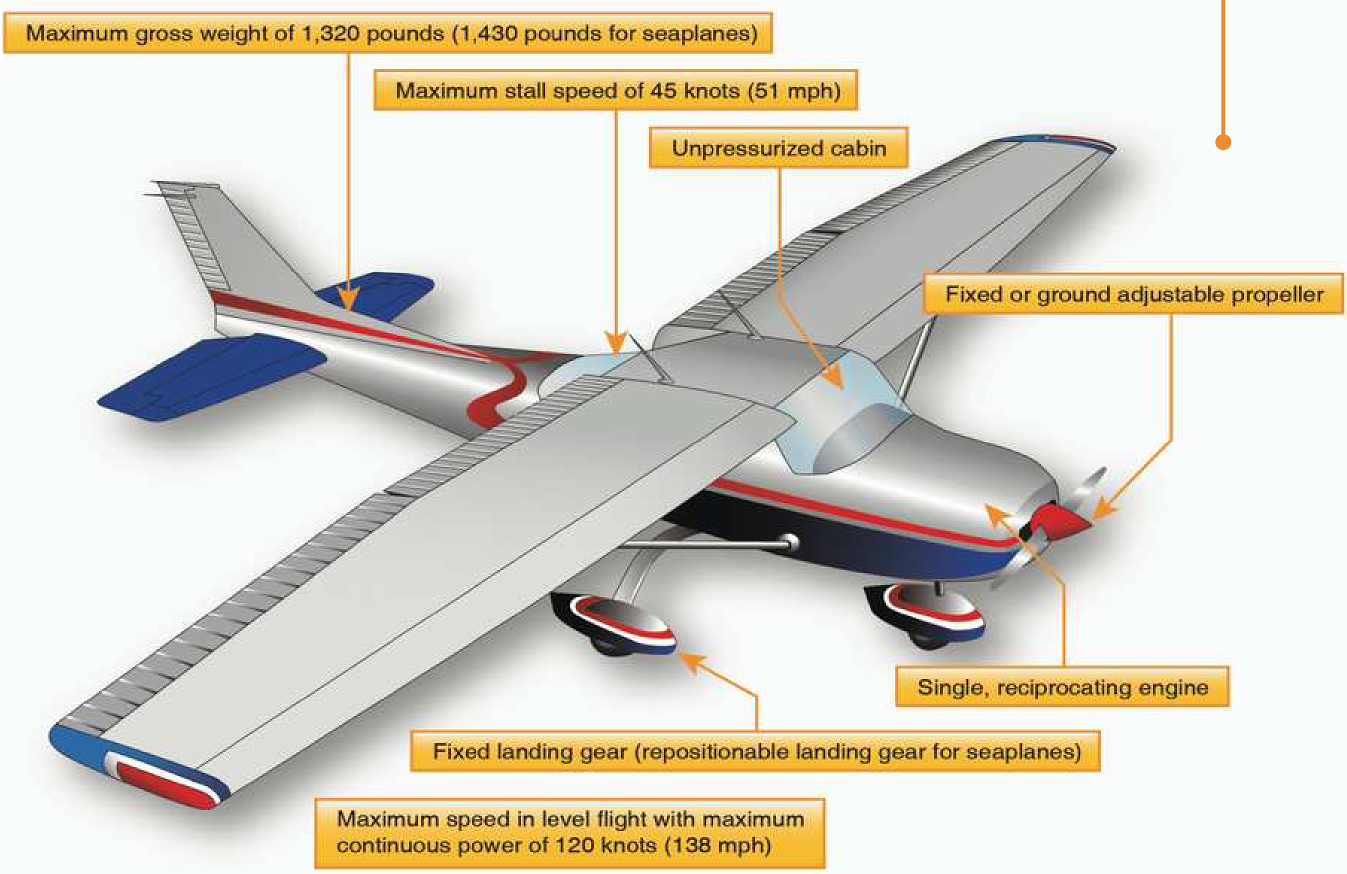
The waiting period for a new Cessna 172 or a Piper Archer PA28 (Both Type Certified in the 1950s) is at least three years. These aircraft are priced at over 600,000 US Dollars each and are equally expensive to operate, with average fuel consumption of 30 Liters per hour, heavy metal sheet bodies with heavy engines, a high carbon footprint, and expensive parts. By comparison, a modern aircraft is modular, built of composite material and advanced avionics, and costs as low as 200,000 US Dollars with a much lower operating cost, half the fuel consumption (15 liters per hour), and a lower carbon footprint. A relatively newer segment of aircraft classified globally as Light Sport Aircraft (LSA) costs upwards of $150,000 and is transforming the landscape of pilot training and private aircraft ownership globally. But not in India.

Introduced by the Federal Aviation Agency (FAA) on 1st September 2004, the regulation for Light Sport Aircraft was introduced to usher in a new era of small airplane manufacturing and operation that no longer required small aircraft to conform to the long, expensive, and laborious certification processes (FAR-23) imposed on them as a consequence of archaic Certification Specifications which were the same as for transport category aircraft of up to 19 seats. This new law was introduced to simplify the certification requirement of smaller aircraft, ushering in an era of innovation to reap the benefit of modern materials such as composites and modular digital avionics, which would eventually be passed on to the end user, the aviation community. This new class of aircraft was designed to be simple to operate and were declared airworthy under a “Special Certificate of Airworthiness” and could be manufactured by any company or individual so long as they were built to ASTM 2245 specifications for materials and performance. They did not have to undergo any Type Certification, which was the primary objective of these aircraft. The compliance of the aircraft for the issue of a "Special Certificate of Airworthiness” was based on a “certificate of compliance” or a "self-declaration," which was required to be issued by the manufacturer. In the US alone, there are over 10,000 airplanes in operation today.



Total Registrations Year over Year	Number of Registrations				
	2019	2020	increase	2021	increase
Factory-built	4,625	4,784	159	4,939	155
Kit-built	4,198	4,544	346	4,706	162
	8,823	9,328	505	9,645	317

Over the next two decades, regulatory authorities worldwide embraced this classification in one form or another. Every authority differed in the definition and requirements for classifying aircraft as LSA and what operations these aircraft could be used for.

European Aviation Safety Agency (EASA), for example, initially issued LSAs with a "Permit to Fly" and not a “Special Certificate of Airworthiness” and prohibited commercial operations or flight training from being conducted on LSAs. Later, EASA adopted a far more regulated approach than the FAA and created two new Certification Specifications for light two-seat aircraft, CS-LSA, and CS-VLA, and made it mandatory for these categories of aircraft to be certified and issued a Type or a Restricted Type Certificate and flown under a “Certificate of Airworthiness” or a “Special Certificate of Airworthiness” depending on their capability. Commercial operations are allowed for aircraft that are issued with a “Certificate of Airworthiness” including their use for flight training for PPL/CPL and ATPL issues.

Meanwhile, the FAA decided to segregate LSA aircraft into two further classifications, Special LSA (S-LSA) and Experimental LSA (E-LSA) aircraft, of which S-LSA's could be used for all commercial purposes, including aircraft rentals and Pilot Training, including Instrument training en route. As far as licensing is concerned, that meant that hours flown on these aircraft could be fully credited for the issue of PPL, CPL, and ATPL licenses, including Instrument Ratings. This is gradually ushering in a worldwide revolution in the pilot training industry where the local regulations allow these aircraft to be used in Pilot Training. These aircraft's lower operating cost and off-the-shelf availability make them more popular, acceptable, and economical than the traditional Cessnas and Pipers. For instance, through their subsidiary MESA Air, United Airlines recently ordered 100 Pipistrel aircraft to accelerate the path to ATPL so that their cadet pilots could qualify them for induction into the airline.

Based on data and statistics of incidents and accidents over the last 20 years of operating LSA's, this class of aircraft with their Special Airworthiness Certifications have proven to be just as safe to operate as Type Certified aircraft issued with a "Certificate of Airworthiness." Citing this performance, the FAA has triggered a proposed amendment to the regulation governing LSAs and introduced a new law, which is in draft and on track to effect in 2024.

The Modernization of Special Airworthiness Certifications or MOSAIC will transform small aircraft operations in the USA and worldwide. Brazil proactively implemented such a rule in July 2022, increasing the weight restriction on Light Sport Aircraft to 1361 Kg and four seats. Under this amendment, LSA's under FAA will be allowed to be manufactured and operated up to a weight category of approximately 1361 kgs(3000lbs) as determined by the increased stall speed (from 45 Kts to 54 Kts), with a seating capacity of up to 4 and features such as constant speed propellers and retractable landing gear.

DGCA introduced Light Sport Aircraft into India through an amendment in the Indian Aircraft Rules in 2017. The rules recognize Light Sport Aircraft as "A fixed-wing aircraft with maximum certificated take-off mass exceeding 450 Kgs. but not exceeding 600 Kgs. (650 Kgs. in case of seaplanes) and stalling speed not exceeding 45 knots." However, the weight and stall speed are not the criteria for this classification. Take the Piper Cub, an aircraft used extensively in India for training pilots with an MTOW of 550kgs and a stall speed of 30 knots. The criterion for this category is the Rule under which the aircraft is certified and the certification itself.

DGCA is empowered to issue a Restricted Type Certificate to an LSA under Rule 49I as long as the terms in CAR Section 2 Series F Part XXIII are adhered to. This means that any Indian today can manufacture and fly an airplane. The aircraft, however, can only be issued a" Special Certificate of Airworthiness" and, under these rules, cannot be used for any commercial purposes, including flight training.

The DGCA Dilemma

Recently, DGCA has, through a notification, reclassified two aircraft of the Government Aviation Training Institute (GATI), an FTO based out of Odisha, as Light Sport Aircraft. This reclassification has effectively resulted in DGCA retrospectively disqualifying over 2000 hours of training on these aircraft, leaving over 40 student pilots in the lurch. The license issue documents of 3 student pilots have been returned by DGCA, where each of these students has flown over 100 hours on these aircraft. These are students from middle-class homes who have taken loans to fund their children's dreams.

Oddly enough, both these aircraft are Type-Certified by EASA, continue to hold a valid "Certificate of Airworthiness," and are widely used for flight training in Europe, including Advanced UPRT training.

Captain Jati Dhillon of GATI, a retired Indian Naval officer and the whistleblower on Ex-Director of Flight Training (DFT) Captain Anil Gill, says, "The DGCA has not heard us on the matter and my organization is being targeted by certain officials. The DFT is not the competent agency within the DGCA to reclassify an aircraft; it is the engineering or airworthiness sections that have correctly issued our aircraft a Certificate of Airworthiness in 2022 that continues to remain. We have challenged this notification in the Delhi High Court and hope justice will be served to our student pilots and employees." GATI continues to insist that their aircraft are Type Certified by EASA, and the key is that they are being flown on a Certificate of Airworthiness, which is against the requirement of a "Special Certificate of Airworthiness" for an aircraft to be classified as an LSA. The aircraft is made of carbon composite and has advanced features such as a Ballistic Rescue parachute, autopilot with auto-level feature, stick shaker stall warning, speed brakes, and cruise flaps, making it an exceptional aircraft for pilot training.

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A well-written regulation on Light Sport Aircraft and their application to General Aviation will allow India's fledgling Pilot Training industry to truly benefit from the innovation carried out in the aviation world. It will enable Indian FTOs to import inexpensive yet modern and safe aircraft that are available off the shelf and have the lowest operating cost in the industry. This will offset the disadvantage of high fuel costs and poor infrastructure, allow Indian FTOs to become safe and competitive, and stem the outflow of valuable foreign exchange. If India is to produce 2000 pilots annually from 600 a year, it must embrace new technologies and introduce regulations to support them.

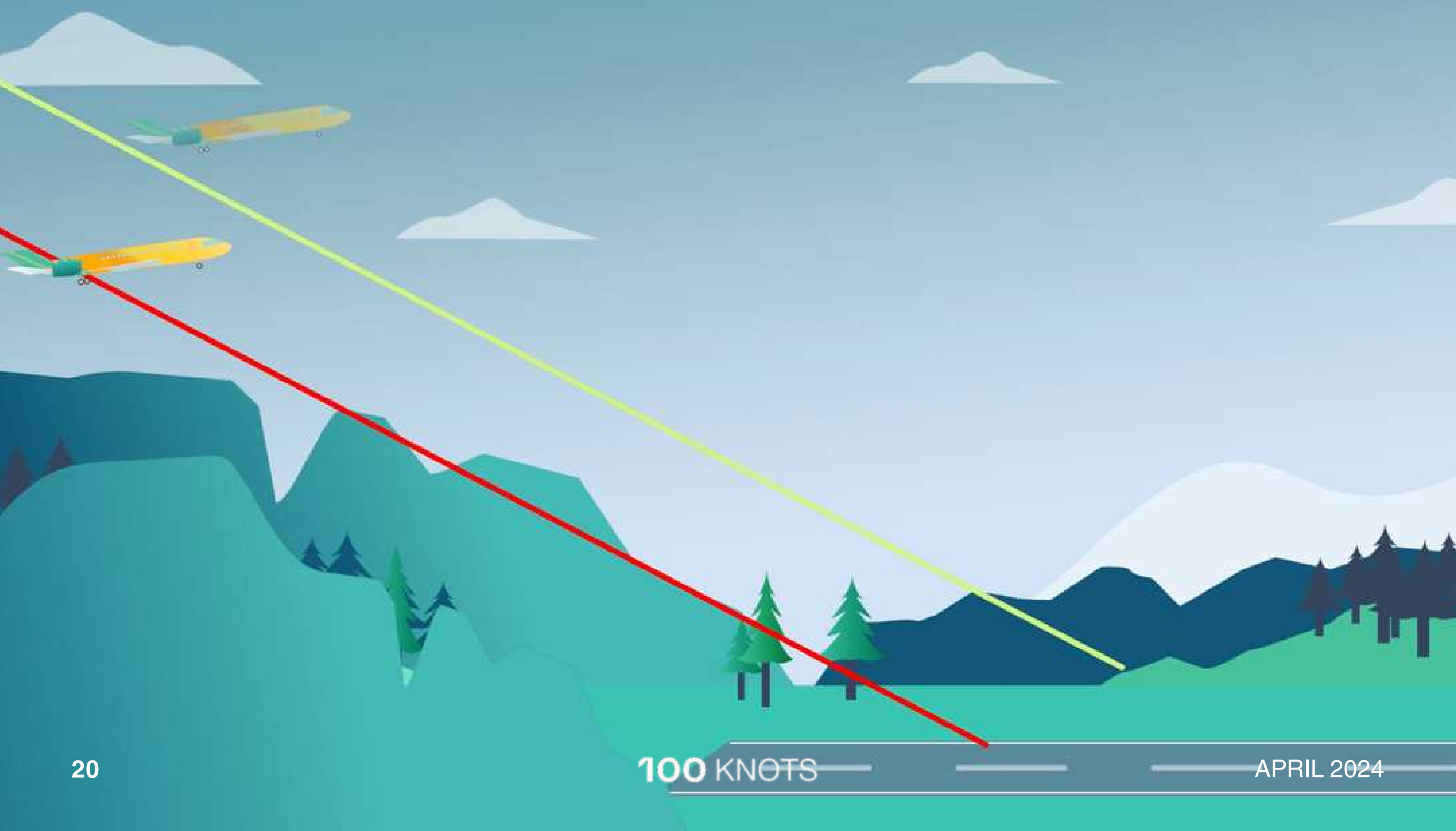
Conclusion

About the Author

Captain Jatinderpal Singh Dhillon boasts an impressive career spanning over four decades in aviation and military service. His 12,600 hours of flight experience and 2,000 hours as an instructor reflect his dedication to aviation. As the current Managing Director of Global Aviaunatics Limited and CEO of Insight Aviation, he steers organizations with a veteran's expertise. His strategic roles in the Indian Navy, including commanding two air squadrons and a naval ship, along with being recognized with the Sword of Honor, mark a distinguished military tenure. Captain Dhillon's journey from a senior pilot to an executive reflects his leadership and commitment to excellence in the aviation industry.

Altimeter Setting for Approach

PP Singh
Ex-Accountable Manager
Jet Airways



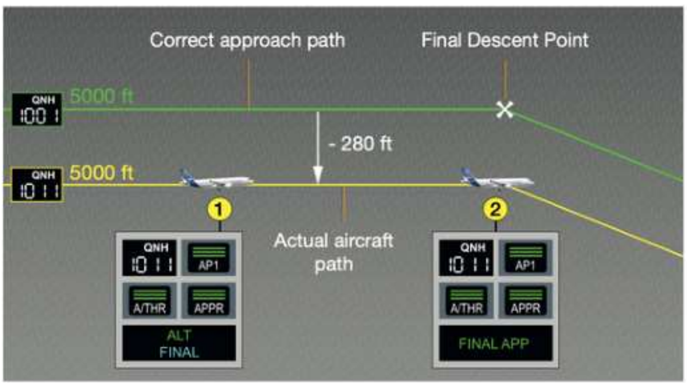
Case Study

Event Description

On 23 May 2022, an Airbus A320 (9H-EMU) being operated by Airhub Airlines for Norwegian Air Sweden on a scheduled international passenger flight from Stockholm to Paris CDG as NSZ4431 was preparing for an RNP RWY 27R approach with LNAV/VNAV minima, before initiating descent from their cruise Flight Level. The ATIS provided them with an airport QNH of 1001 hPa.

The CDG Approach controller cleared the flight to descend to 5000 feet on 1011 instead of the correct 1001, and this QNH was read back as given. A minute later, the same controller was recorded when giving the same descent and approach clearance in English to an inbound EasyJet flight to have again used the wrong QNH of 1011 but received a readback which included the correct QNH 1001 which the controller did not notice. Almost immediately, the controller issued a further clearance to descend to 5000 feet to an Air France flight, but this time used the correct QNH of 1001, which was correctly read back by the crew.

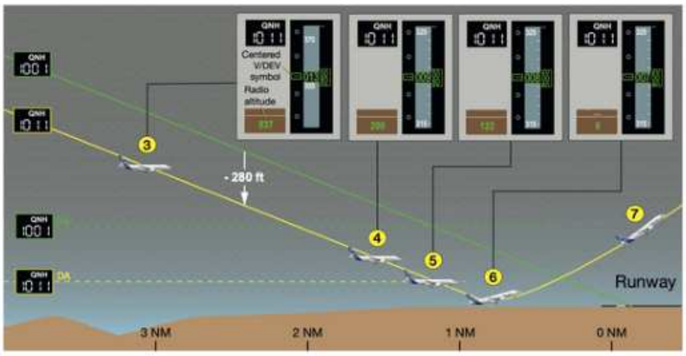
The Airhub Airlines flight crew acknowledged the clearances, repeating the erroneous 1011 hPa QNH, which was 10 hPa above the current QNH of the airport.



The aircraft commenced its approach 280 ft below the published approach.

1. With autopilot and auto thrust ON, the A320 reached the approach Final Descent Point with the altimeters indicating approximately 4900 feet - the actual altitude was approximately 4,600 feet.

2. The aircraft commenced its final descent using FINAL APP guidance mode. It was flying without visual reference and experienced light turbulence through a rain shower.



After initiating the go-around, the aircraft descended as low as 6 ft radio altitude before climbing.

3. Apart from the consequences of descending on a vertical profile approximately 280 feet below the one required by the RNP procedure for which the flight had been cleared, the approach was essentially 'stabilized' throughout with a rate of descent of between 710 and 740 fpm.

4. ATC received a Minimum Safety Altitude Warning (MSAW) when the aircraft was 1.53 NM from the runway threshold and had an indicated altitude of 891 ft.

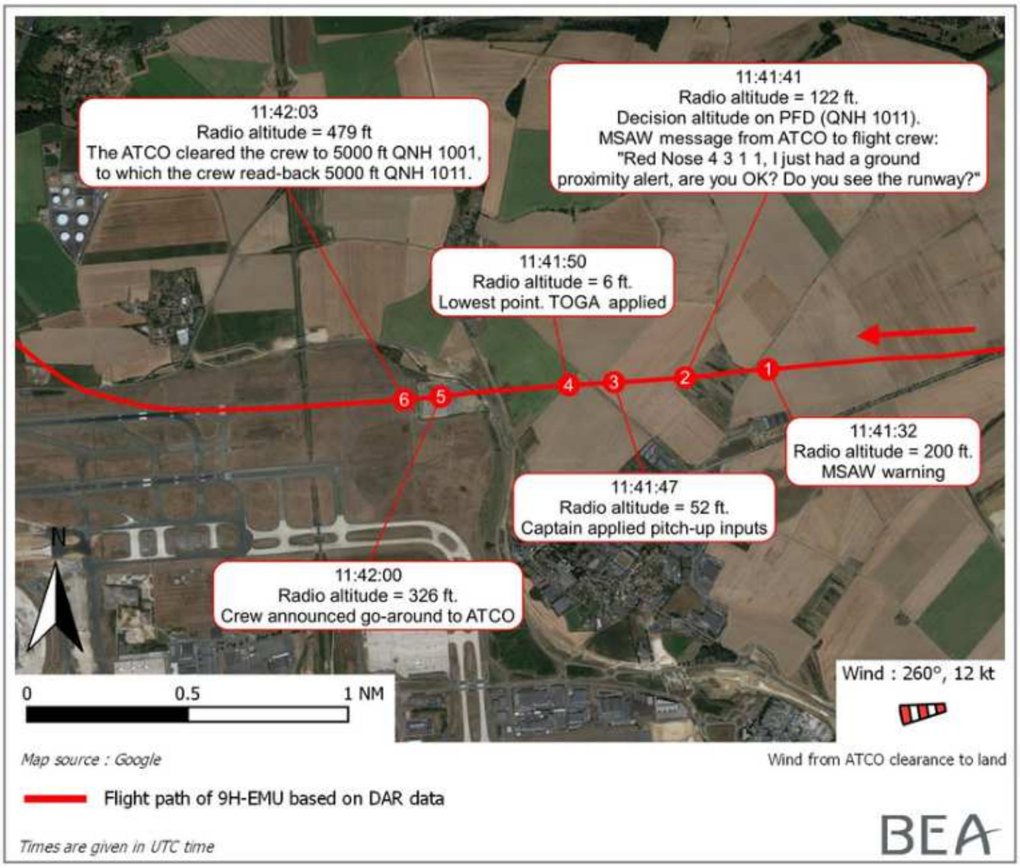
5. Three seconds later, on reaching 802 feet indicated QNH (the applicable MDA since the operator required 50 feet to be added to the charted VNAV/LVAV minima of 752 feet QNH), the crew reported having had no visual reference and had therefore prepared to go around.

6. The aircraft radio altitude indicated a descent to 6 ft during the go-around maneuver.

7. The flight crew announced the go-around seconds later and were vectored for a second approach.

The second approach was also performed using the erroneous 1011 QNH value. ATC received another MSAW alert and alerted the flight crew. On this approach, the crew had established visual contact with the runway. They disconnected the autopilot at 572 ft RA, used the PAPI indication to correct their trajectory, and performed a manual landing.

Event Analysis



During the first RNP approach using LNAV/VNAV minima, a controller twice provided an incorrect QNH, which the flight crew read back as given. On a third occasion, a flight given the same incorrect QNH responded with a readback of the correct QNH, but the controller should have noticed this.

The incorrect QNH given by ATC to the flight under investigation differed by 10 hPa from the QNH valid at the time and included in the ATIS information and, when used, resulted in an approach carried out approximately 280 feet below the descent profile.

When the flight was transferred to the TWR frequency, the controller issued a landing clearance without also giving the QNH value.

During the final approach, the flight crew did not detect the erroneous vertical position because:
- The vertical deviation symbol was centered
- Altitude vs. distance checks were correct
- There was no Terrain Avoidance Warning System (TAWS) alert.

Several RA auto-callouts should have been triggered according to the aircraft configuration. The runway approach lights were not turned ON for their first approach attempt in poor weather conditions, making it extremely difficult for the flight crew to detect the runway visually. The lights were switched to ON before the second approach, and the flight crew was able to see the runway and correct their trajectory.

The approach resulted in a near Controlled Flight Into Terrain (CFIT) without visual references at a minimum height above terrain of 6 feet as the crew, not having acquired visual reference, performed a go-around.

Before again making the same RNP approach using LNAV/VNAV minima, the flight was given the correct QNH during the go-around phase. Still, the readback was of the incorrect QNH previously provided, and the controller did not notice the error. Therefore, the second approach was also flown approximately 280 feet below the procedure flight path. However, when the crew acquired visual reference before reaching the procedure minima, they were able to correct the flight path and then complete an uneventful landing.

Understanding the Risk

In aviation, vertical navigation based on barometric altimetry and vertical references on navigation charts traditionally rely on the use of local barometric pressure, i.e., QNH (or QFE); hence, operating with an incorrect altimeter setting could lead to flying closer to terrain or obstacles than expected. It may also lead to a loss of separation from other aircraft. In the worst-case scenario, having an incorrect barometric altimeter setting could lead to a loss of adequate terrain clearance and, in the worst case, a CFIT.

An incorrect barometric altimeter setting is a known vulnerability that, in some cases, has degraded pilots' situational awareness. An incorrect QNH/QFE below the transition level/altitude could infringe on minimum safe altitudes, including minimum vectoring altitudes, published decision altitudes, step-down altitudes, etc.

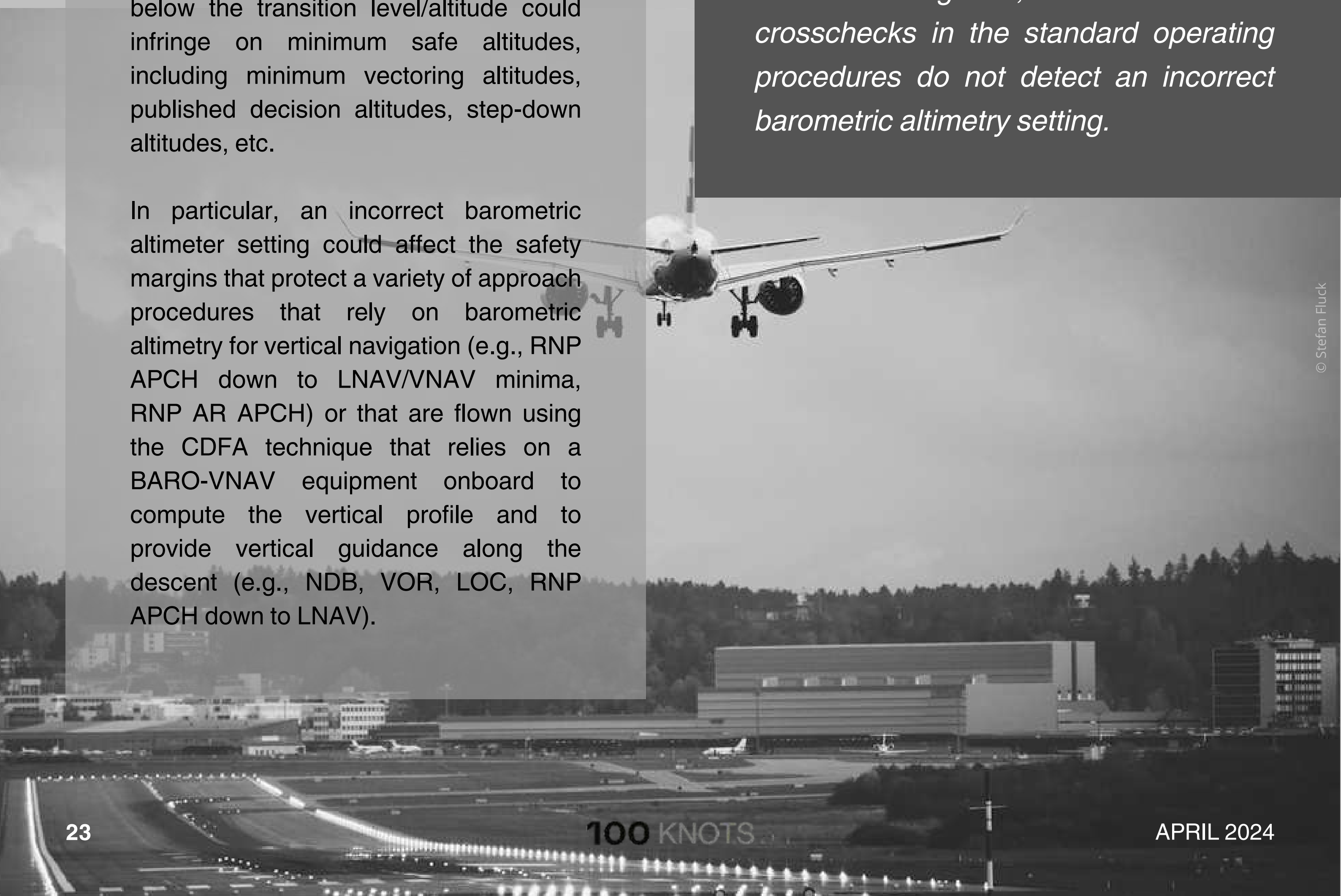
In particular, an incorrect barometric altimeter setting could affect the safety margins that protect a variety of approach procedures that rely on barometric altimetry for vertical navigation (e.g., RNP APCH down to LNAV/VNAV minima, RNP AR APCH) or that are flown using the CDFA technique that relies on a BARO-VNAV equipment onboard to compute the vertical profile and to provide vertical guidance along the descent (e.g., NDB, VOR, LOC, RNP APCH down to LNAV).

Introduction of Possible Errors

Setting the correct barometric values in the cockpit requires a number of different people to do the right things. This is where the possibility for error comes in; these include:

- The provision of the local barometric pressure by the meteorological service provider.
- The broadcasting of the local QNH (or QFE) through ATIS (where available) or the radio transmission of the local QNH (or QFE) by the ATS unit.
- Finally, the altimeter setting by the flight crew.

It is particularly worth highlighting that when using barometric altimetry for vertical navigation, altitude/distance crosschecks in the standard operating procedures do not detect an incorrect barometric altimetry setting.



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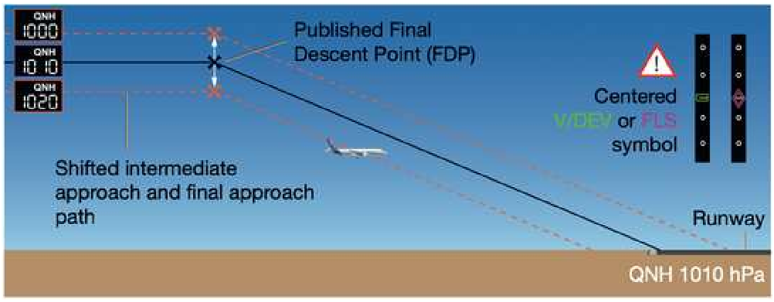
Effects of Erroneous Baro Setting

An erroneous QNH/QFE value can seriously affect the safety of the flight, as demonstrated in the close-call event described above.

Barometric altitude shift effect

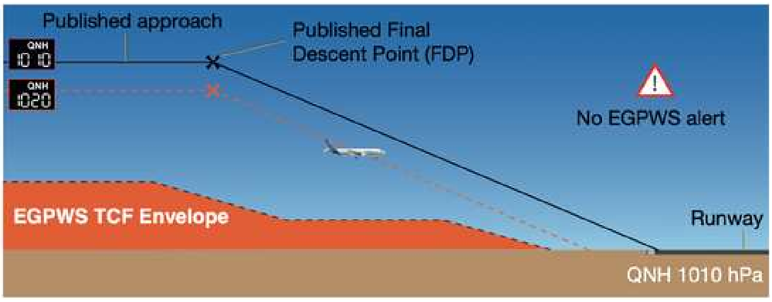
From the altimetry basics, a 1 hPa difference in the QNH/QFE value creates a 28-ft shift in the barometric altitude displayed on the PFD.



Example of the effects of an incorrect BARO setting on A320 family aircraft

Effect on Final Approach Guidance Modes

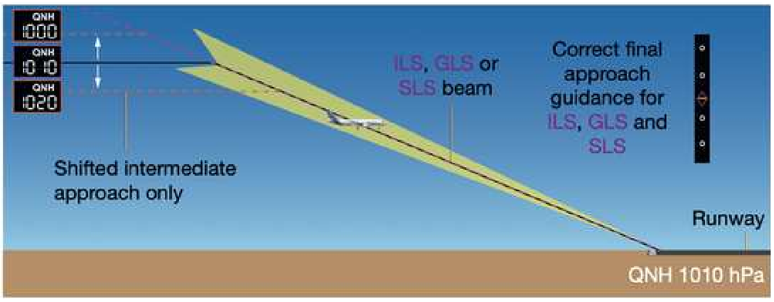
An erroneous entry on the QNH selector affects all final approach guidance modes that use the barometric reference.



The TAWS may not detect a flight path that is too low

Managed guidance

The FMS uses the aircraft's barometric altitude to compute the deviation of the aircraft trajectory with the computed final descent path. If an erroneous barometric altitude is used, the aircraft will follow a flight path that is parallel to the published path but is shifted either above or below it. The vertical deviation symbol, or the FLS symbol, will indicate that the aircraft is on the correct flight path, even if it is not the case.



An erroneous barometric setting does not affect the final descent path of ILS, GLS, and SLS modes.

Selected guidance

An erroneous barometric setting will also cause the FDP height above ground to be incorrect when using selected guidance. The flight crew is likely to commence final descent from an incorrect height above ground and, therefore, fly an approach path that is too high or too low.

Effect on altitude-vs-distance checks

If the barometric setting is correct, the flight crew will only detect an incorrect flight path with altitude-vs-distance checks. These checks use the displayed barometric altitude, which is based on the erroneous barometric setting. The effect is the flight crew will observe that they are at the expected altitude for each distance value, even if the aircraft is flying above or below the published flight path.

Potential absence of TAWS alert Honeywell EGPWS

The actual flight path's relative proximity to the published path prevents the TOO LOW TERRAIN EGPWS alert from triggering because the path remains outside the Terrain Clearance Floor (TCF) alert envelope.

G/S vertical guidance mode is not affected

The final approach path of approaches using ILS, GLS, or SLS guidance is not affected because the G/S guidance mode uses the ILS signal or a beam computed with an augmented GPS altitude. The final approach path will remain aligned with the correct ILS/GLS/SLS beam even if the intermediate approach segment shifts due to the erroneous barometric setting.

Prevention and Detection Mechanisms

Crosscheck the barometric reference
During descent, when cleared to an altitude, the flight crew should pay attention to a barometric reference that significantly differs from the ATIS barometric reference used for the approach preparation. Such a difference could be a symptom of a barometric reference error. In this case, the flight crew should confirm they have the correct barometric reference from all available sources.

Unexpected low RA callouts in the final approach
An abnormally decreasing RA audio callout while the barometric altitude is still high above airfield elevation is a clue that the aircraft may be too low on its final approach path. This can be due to a barometric reference discrepancy. However, RA callouts depend on the terrain profile and, therefore, may not be present if low terrain is located before the runway.

Effective communication
Following voice communication procedures is critical to preventing or detecting an incorrect barometric altimeter setting. In particular, it is essential to do the following:

- Standard Phraseology
- Readback/ Hearback
- Active Listening
- Use of English

Effective use of ATM systems
Local ATS procedures and ATCO training should be provided when using these systems to ensure that controllers understand the functionality in use and can react in different circumstances, including the issuance of clear messages to pilots.

Pilot Monitoring of ATS Messages
Pilots must remain attentive to any ATS related messages and react promptly, including the execution of a go-around, when necessary.

ALTimeter Setting Monitoring function (Airbus)
The ALTSM function, currently available on some Honeywell EGPWS standards, compares the barometric altitude on the captain's side with the GPS altitude. If the difference exceeds a threshold, the EGPWS emits an "ALTIMETER SETTING" alert, which is repeated if an incorrect barometric setting is still detected after some time.

Use of Approach Lights
Should a barometric pressure error occur, if the pilots have external references, they are more likely to identify the situation and take the right action. This is particularly challenging in poor visibility, which means that the use of aeronautical ground lights can be particularly important to help manage this risk.


© Ilyas Dautov

It is worth reminding that approach lights are meant to be on whenever the runway lights are on.

© Etienne Jong

Conclusion

An undetected erroneous BARO setting can cause an aircraft to fly above or below the published final approach flight path when following approach guidance that uses a barometric reference. Vertical deviation indications are shown as correct, even if the aircraft is not on the proper flight path, with an incorrect BARO setting. Standard altitude-vs-distance checks will also wrongly confirm that an aircraft is on the correct trajectory because it uses the same erroneous barometric reference. If visual conditions are not sufficient, the flight crew may not be able to detect that their aircraft is on an incorrect flight path in time to adjust their trajectory or perform a go-around.

Flight crew can detect a potential erroneous barometric reference by comparing the barometric reference provided by the ATC at the first altitude clearance during descent with the value provided by the ATIS during descent preparation. If there is a significant discrepancy between the two values, the flight crew should crosscheck the barometric references with all available sources.

Depending on the terrain configuration, abnormally decreasing RA audio callouts while the barometric altitude is still high above airfield elevation might also help the flight crew to diagnose an issue with the barometric reference.

The ALTimeter Setting Monitoring (ALTSM) function is currently available on some TAWS computer standards. It compares the barometric altitude on the captain's side with the GPS altitude and warns the flight crew if the difference exceeds a threshold. Airbus is working on an update of the ALTSM function that will be available for more TAWS computer standards and will provide a visual alert in addition to the current audio alert.

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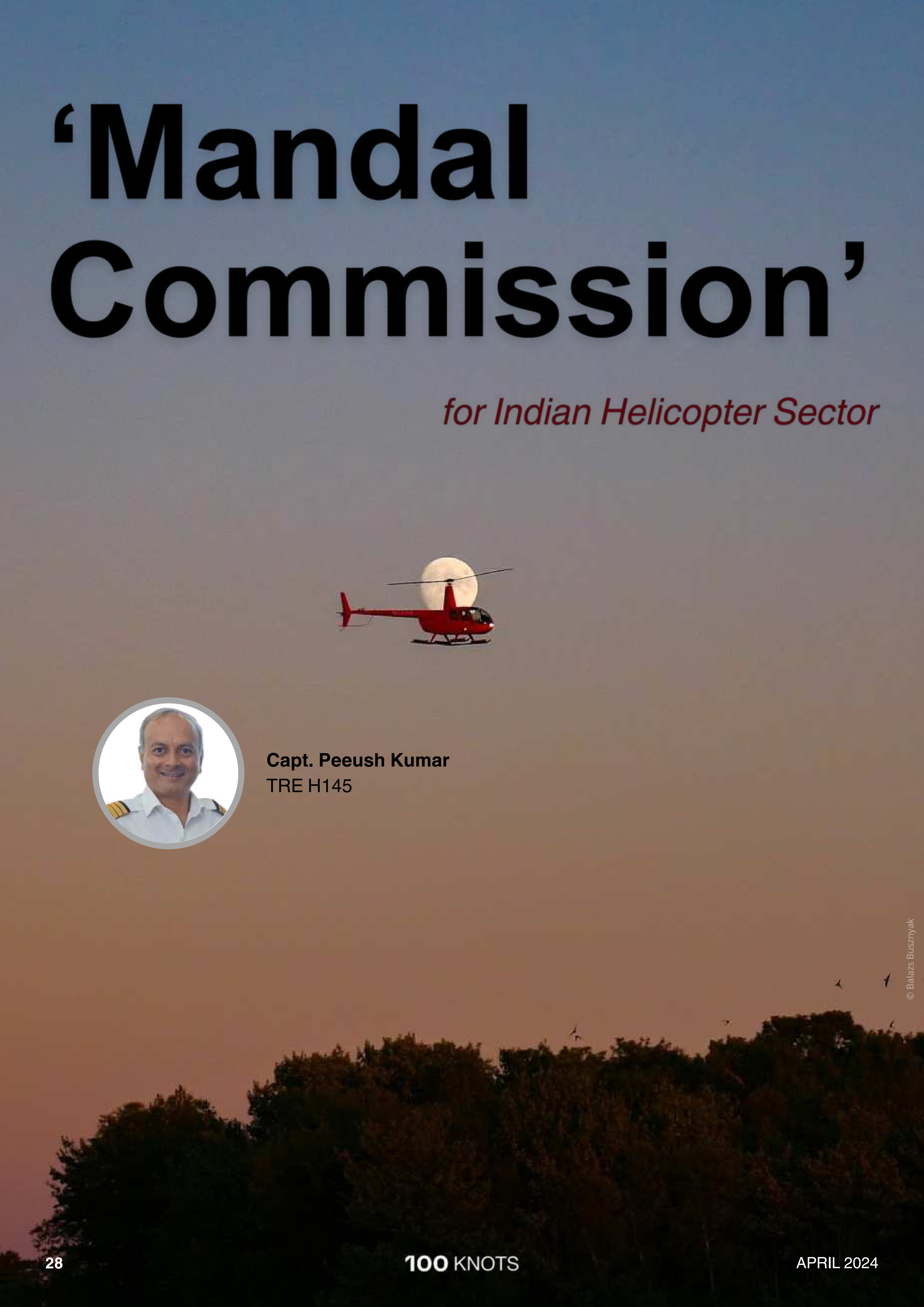
About the Author

As the Ex- Accountable Manager and Vice President for Jet Airways (India) Ltd, Capt PP Singh was the Key Management Person in this world-famous airline brand's resolution and revival process. He has been an aviation professional since 1984, possessing extensive training and checking experience accrued with major Indian and foreign international carriers as an instructor and examiner on large commercial jets. Over the past three decades, Capt Singh has held crucial appointments in the senior management teams of Jet Airways and Nepal Airlines in various regulatory and leadership roles. After graduating from the University of Delhi, he started his aviation career with the Indian Air Force and moved to civil aviation in 1994. He is currently responsible for the operations, training, safety, and engineering functions of Jet Airways.

‘Mandal Commission’

for Indian Helicopter Sector



Capt. Peeush Kumar
TRE H145

The Underprivileged Sector

Misplaced inference for title and contents as a satire could be an insult to Indian helicopter operators/pilots. The 'Mandal Commission', as known, was formed to uplift underprivileged "depressed Indian backward classes". It is here that the idea for author's analogous argument originated for the "underprivileged" helicopter sector of Indian aviation industry. Elements put forth therefore do not target policy makers at ministry/regulator/AAI, but simply offer a ready repository of arguments seeking reservation for a depressed industrial sector. The sector has been in need of a 'protected' framework akin to provisions of 'Mandal Commission' framed for societal underprivileged.

Helicopter sector as an outlier in aviation industry is a deserving candidate for reservation. This statement would be a no-brainer for operators interfacing with ministry/regulator/AAI. Nevertheless, following pointers could be of help to the uninitiated:

- Absence of functional helicopter flying training schools.
- Officially decreed exclusions for helicopter traffic without VIP passengers at airports
- Access denial to national airspace even for safety related infrastructure to favour the 'creamy layer' (read scheduled flights) should suffice for now.
- Placing poor helicopter safety record to corroborate safety necessity is consciously omitted in this write-up to avoid risk of undermining readers' awareness (the author as such can't afford to lose this barely single digit population).
- Finding a similarity between societal underprivileged "depressed backward classes" and Indian Helicopter sector should thence be straightforward.

Lest aforesaid goes down as unfounded, example of CSMIA (Chatrapati Shivaji Mumbai International Airport) with adjunct Juhu airport comes handy. Authorities at CSMIA officially exclude helicopter traffic without a travelling VIP, while dawdling on enabling infrastructure at Juhu airport for all weather, day/night operations for helicopters. Helicopter operations at Juhu airport resultingly continue in the safety conduit as was considered 'modern' 30 years ago. Interestingly, said infrastructure initiative at Juhu airport (Project Aakash) was launched by the honourable civil aviation minister himself to help this 'underprivileged' class! Of course, ignoring a globally contemporary infrastructure hasn't been unique to a lower-priority backward class.

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The Continued Neglect

Should aforesaid still fall short, there're more of eerie similarities. Repeatedly shelved helicopter infrastructural support in national schemes mirrors comparable treatment of 'some' Indian social communities. This should be strange, as acceptance of helicopter capability in filling voids of said schemes apparently exist. Contemporary helicopter operations potent of positively influencing RCS-UDAN scheme, or the PM's Gati-Shakti scheme is the paradox-in-point. Seemingly, it does not matter how this sector can assist in nation building against prevailing precedent bias. Innovative helicopter operations articulated at national level summits/sessions too commonly maintain status quo. Sparse and meaningful exclusivity of non-PSU operators in such events is perhaps by design since considered feebly capable in comparison.

Prayers for Reform

Hopefully, aforesaid markers strengthen this author's bid for reservation and would raise reader(s) support for the sector. Its upliftment through reservation, just like the societal depressed class can then be taken forward in strength. Expected outcomes could be related to infrastructure - like for every 05 (five) airports developed, at least one contemporary heliport is developed, or a proportional percentage of all weather, day/night helicopter operations are fixed at major airports and so on and so forth. Possibly, some 'Mandal Commission' type forum for Indian helicopter sector could yield results.

Tapping global growth-trend of helicopter operations through injection of technology remains paper-perfect. As expected, meeting resistance of change at some critical offices for the sector is common. Discriminatory, lopsided regulations and biased infrastructure development are thus naturally evident. Intervention for a fair disposition and sectorial growth could therefore be impacted through a reservation scheme for Indian helicopter sector – just like the societal backward classes.

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About the Author

Capt. Peeush Kumar is a certified Type Rating Examiner (TRE) on H145 Helicopter working with a non-scheduled operator. Certified Experimental Test Pilot (Rotary Wing), he is an active author for various aviation periodicals. His recent contribution was published in the prestigious journal for International Flight Test Seminar of Indian Air Force. Capt Peeush Kumar has been in pursuit of safer PBN (Performance Based Navigation) procedures for helicopters through active approach and awareness initiatives. Reachable at Peeush Saini@yahoo.co.in (+919916654775)

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Airsickness

Prevention and Treatment

Dr. Sanjay Bhargava MD
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Airsickness is a type of incompatibility disorder causing cold sweats, nausea and vomiting during the flight. It is felt intensely, especially when the plane is shaking, often the tremors of the plane trigger the airsickness. Those who experience the discomfort of airsickness during the flight can reduce the effects of airsickness by paying attention to several points.

Symptoms

Airsickness is a complex interplay between your inner ear, eyes, and nervous system. A cascade of unpleasant symptoms ensues when these signals become discordant during turbulent flights. These symptoms can vary in intensity and duration. Here are some common telltale signs:

Vomiting

Dizziness

Sweating

Headache

Nausea

Why does it Happen?

Although airsickness is due to many reasons, this disorder caused by the communication incompatibility between the ear and the eye. There are hairs in our inner ear that are sensitive to movement. These hairs detect forward movement during air travel but the eye, which sees a fixed view on the plane, can't tell if it's moving. Simply the ear sends the message of "We're moving" to the brain while the eye sends a "No, we're standing still" signal. This results in the brain receiving conflicting messages from its sensory apparatus and induces a feeling of loss of balance and general malaise.

Prevention Techniques

Prevention is critical to managing airsickness effectively, while you may not be able to prevent air sickness entirely, there are steps you can take to help reduce the risk of air sickness. These include:

Avoid reading or staring at the screen

Just as with carsickness, concentrating on an object in your hands or inside the cabin contributes to a loss of orientation, causing nausea. Try to look out of the window and only concentrate on details in the cabin for short periods of time.

Choose a suitable seat

Pick a seat close to the window and try to focus on a point on the horizon to give your brain an external reference. If you are travelling after sunset, choose a seat in the middle of the plane where the movements and oscillations of the aircraft are less dramatic to reduce the effects of turbulence.

Practice relaxation techniques

Incorporate relaxation techniques such as deep breathing, meditation, or visualization to alleviate stress and anxiety, which can exacerbate airsickness. Chew some minty chewing gum to stimulate digestion and relaxation.

Avoid heavy meals

Consuming heavy or greasy meals before flying can worsen airsickness symptoms. Flying on an empty stomach, contrary to popular belief, does not help to avoid airsickness - in fact, it exacerbates it. We would therefore recommend having a few light snacks before the flight, such as fruit, vegetables or some crackers. It is a good idea to avoid coffee, alcohol, nicotine and fatty foods that could take a long time to digest, causing nausea.

Wide Body vs Narrow Body

Wide-body aircraft transmit less movement, meaning you feel less of the plane's movements.
If you can choose your plane, fly with wide-body planes.

Use anti-nausea drugs or natural remedies

There are various commonly-used, drugs for airsickness, including sedative antihistamines, that can be taken before the flight. Remember to take note of any possible side effects, including dry mouth and blurred vision. There are also some very effective natural remedies such as ginger, which is widely believed to have an anti-nausea effect, or lemon, whose pungent flavour encourages the brain to pay more attention to the information coming from the body.

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About the Author

Sanjay Bhargava is a consultant Aerospace medicine specialist and renowned Class 1 medical examiner impaneled with DGCA. He is an alumnus of Armed Forces Medical College Pune. After completing his post-graduate in Aerospace medicine at the Institute of Aerospace medicine Bangalore, Dr. Sanjay worked as a specialist in Aerospace medicine with the Indian Air Force. He is a DGCA Class 1 examiner with extensive experience at AFCME, Delhi, AFS Tambaram, and served as President of MEC (EAST), Jorhat. He has been responsible for finalizing various policies at DGCA. He was the lead doctor for starting civil medical centers for class 1 medicals for DGCA. Over a while, he has assisted aspiring pilots and solved their DGCA-related medical issues through his website http://dgcamedical.in. He has a large following on social media and is respected for his advice given to pilots for the last 3 decades. Dr. Sanjay can be reached at:

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