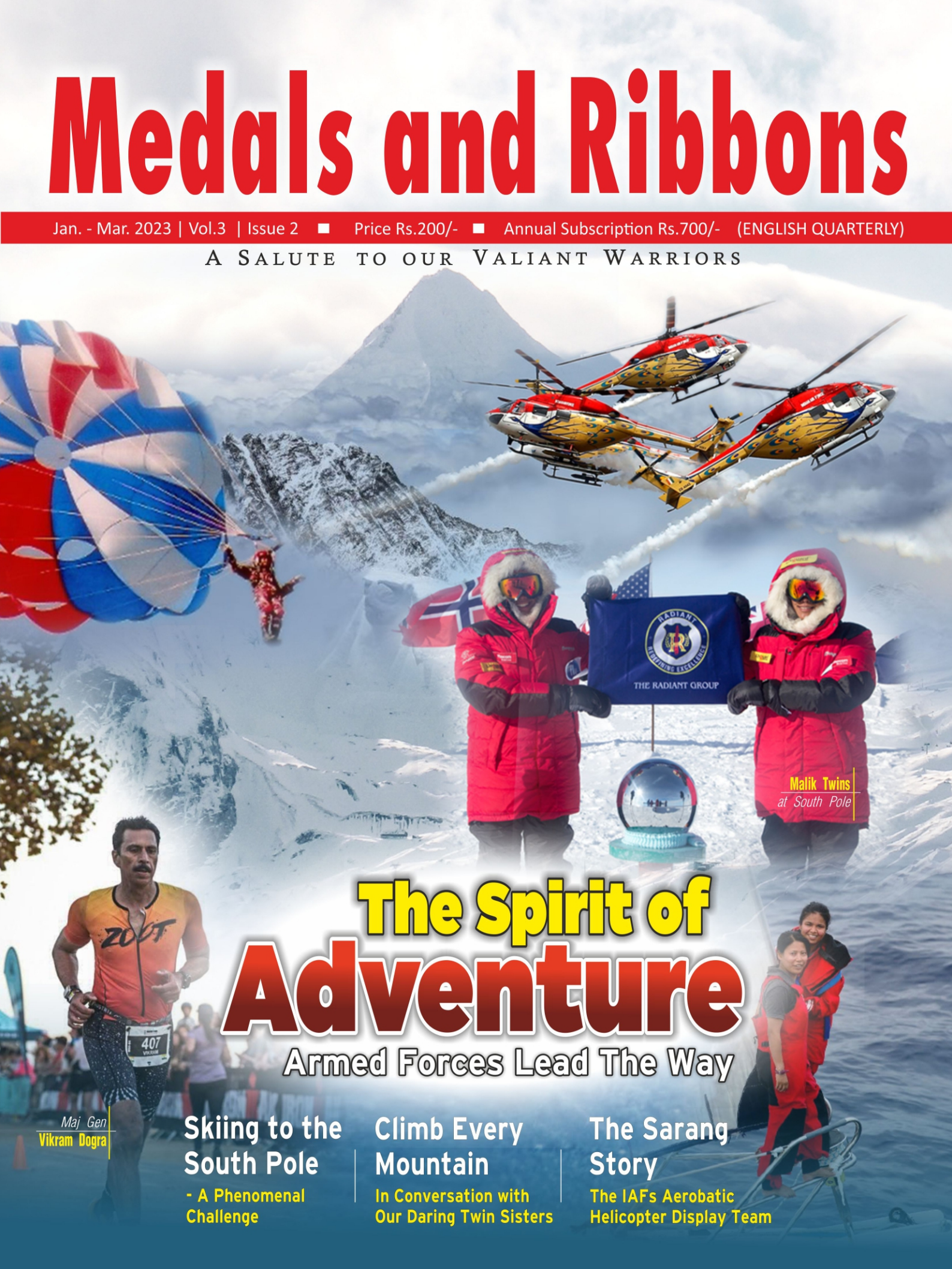
Medals and Ribbons

Jan. - Mar. 2023 | Vol.3 | Issue 2 ■ Price Rs.200/- ■ Annual Subscription Rs.700/- (ENGLISH QUARTERLY)

A Salute to our Valiant Warriors



Malik Twins
at South Pole

The Spirit of Adventure

Armed Forces Lead The Way

Maj Gen
Vikram Dogra

Skiing to the South Pole
- A Phenomenal Challenge

Climb Every Mountain
In Conversation with Our Daring Twin Sisters

The Sarang Story
The IAFs Aerobatic Helicopter Display Team

DEDICATED TO

MAJOR VETRI NATHAN, VRC (POSTHUMOUS)

2/11 GORKHA RIFLES (GR)

His life size statue was unveiled at Point 13620 in the Kargil Area by the Division Commander on 01 October 2022 - a historic moment for the entire SHINGO fraternity.

The Statue at Vetri Post

Major Vetri Nathan, VrC (Posthumous), born on 24th February 1941 at Mumbai, was inspired by Commander N K Nathan, his father who was in the Indian Navy. Vetri Nathan was commissioned into 2/11 GR in December 1962. 2/11 GR, a unit raised on 11th January 1963, was inducted into Mizoram to quell the Mizo uprising. Major Vetri proved his mettle in Mizoram and evolved into a battle-hardened and committed soldier.

During the 1971 war with Pakistan, the unit was deployed in the Kargil Sector of J & K. Point 13620 dominating the Srinagar-Leh highway was under the control of Pakistani forces. As the hill feature posed a serious threat to the movement of Indian troops along the highway, it was decided to reoccupy Point 13620 and 2/11 GR was assigned this task of capturing it. Major Vetri Nathan was commanding one of the companies that took on this challenging task and launched the attack on 06 December 1971.

Major Vetri Nathan displaying courage and leadership skills successfully managed to capture the enemy-held post "Black Rocks". Subsequently, the Company marched on towards Point 13620. However, the advance was being stalled by the enemy's Medium Machine Gun (MMG) post on the summit. Major Vetri Nathan realized that the enemy MMG post had to be neutralized. Without regard to his personal safety, he called for the Rocket Launcher and took position to neutralize the enemy MMG bunker. While he shot off the rocket which knocked off the MMG post, he too received a bullet injury in his head and was killed in action. Infuriated, his troops unsheathed their Khukries and went on a rampage against the enemy. The daredevil attack by Gorkha soldiers forced the enemy to flee evacuating all the posts before daybreak. Point 13620 was captured and was named as "Vetri Post" in his honour. A memorial was erected at this place. Major Vetri Nathan was awarded the "Vir Chakra" for his exceptional courage, determination, unfaltering leadership, and supreme sacrifice.

Remembrance by the family.

FOUNDER'S NOTE

Col David Devasahayam

It was March 2014 and I called up Col Virender Malik, father of Nungshi and Tashi Malik, who is from my Battalion, 2/8 Gorkha Rifles. The twin girls were then scaling the Carstenz Pyramid, Oceania's highest peak. They had been out of communication for three days. *"No news is good news, sir"*, said the cool Dad. Sure enough he was right and the next morning we learnt they had summited successfully. Dreams come true when passion meets comprehensive preparation. This was true in their case and the girls would go on to complete the Adventurers Grand Slam (Highest peaks in all the seven continents and the North and South Pole) garnering considerable media attention and awards besides being featured in the Guiness Book of World Records. Personally, it was a pleasure to have a ringside view of their journey. The twins are indeed role models for the youth, especially for girls. Virender, a Commando Dagger winner himself and Anju his better half, have immensely supported the passion of their children. It is a pleasure for us to include an interaction with them.

Another inspirational story in this issue especially for serving personnel is that of Ironman Major General Vikram Dev Dogra. *"You have to swim 3.8 km in the ocean, cycle 180 km and then run a full marathon of 42.2 km. All three need to be done back-to-back, within 16-17 hours, depending on where the event is held,"* he says, describing the Ironman Challenge which he has successfully done three times.

Life in Uniform is an Adventure in itself. While serving in uniform, on some professional courses you receive formal training in an adventurous sport. When attending Mountain Warfare Course in 1983 at the High Altitude Warfare School, Gulmarg, Kashmir along with Sandy (Lt Gen J S Sandhu), our Editor, we learnt rock climbing, rappelling, ice craft, glacier and mountain survival, besides other techniques. The training helped me face the rigours during various tenures on the Himalayan Frontier. Beginning with these courses many men in uniform would go on to become world class mountaineers. While compiling this issue, it was really heartening to see that the Armed Forces have been involved in high risk adventure activities in all the three mediums – land, sea and sky. Bringing forth some of the achievements of the men and women in uniform is indeed necessary as I am sure it will inspire many to participate in such activities. Our focus therefore, has been on Adventure in the Armed Forces in this issue.

With the Twins

I am sure the readers will find this issue as interesting as our previous issues, and we really appreciate and are grateful for your continued and enthusiastic support...

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Injambakkam,
Chennai - 600041.

Printed At
Vasan Print Mfg Co
29, Dr. Besant Road, Ice House,
Chennai - 600014.

Operations Office
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EDITOR'S NOTE

Lt Gen J S Sandhu, (Retd).

Risk taking ability is an extremely important attribute for soldiers, sailors and airmen. Adventurous activities foster risk taking and the adventurers develop an affinity for outdoor challenges. Good schools, especially the renowned public schools nurtured the spirit of adventure in their students, through conduct of several adventure sports. The Armed Forces too prefer such boys and girls whose risk taking propensity and outdoor comfort makes the person adapt to the wild frontiers easily.

The Indian Armed Forces have been the Pathfinders in many adventure sports and pursuits in India, with many of their personnel having conquered the peaks, crossed the seas and soared in the skies. Renowned mountaineers like Major ND Jayal, Colonel Narinder (Bull) Kumar, Major HPS Ahluwalia, Colonel Prem Chand, Subedar ND Sherpa and such others became role models and 'gurus' for the next generation of mountaineers. In the Aero Adventure sports and Aqua sports domains too, Services stalwarts steered the course and led the way. In this issue, we serve you a platter of stories, accounts, reports and reminiscences of some of our adventure feats.

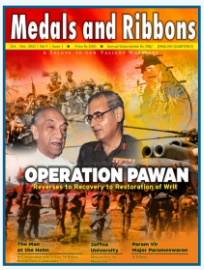
Readers will treasure the description of the Indian Army Skiing Team's Expedition to the South Pole in 2010-11, as also the story of the voyage across the oceans by six Lady Officers of the Indian Navy on INSV Tarini. Wing Commander Rahul Monga's solo circumnavigation of the globe in a microlight aircraft in 80 days is also fascinating, reminding us of Jules Verne's *"Around the World in 80 Days"*. We also carry lively interactions with our Ironman, Major General Vikram Dogra (Retd) and with Nungshi and Tashi Malik, the twin daughters of Colonel Virender Malik (Retd). Their success in extreme adventure sports is remarkable – they undoubtedly inspire many young girls.

We pay tribute to Colonel Prem Chand, the Snow Tiger, mentor to many mountaineers who passed away in October this year and also salute the "Indefatigable Spirit" of Commander Abhilash Tomy – whose 'Junoon' to face the wrath of the mighty oceans is astounding. He is possibly our 'Reinhold Messner' of the seas. We sometimes perceive trekking as a relatively easy adventure activity, but trekking five decades ago in 1971 through the largely unknown, remote Darcha, Zanskar and Suru River valleys was challenging, with primitive facilities in that region. Lieutenant General Baljit Singh's narrative of that trek must be perceived in that backdrop.

To give you a wholesome picture of **"The Spirit of Adventure"** in the Armed Forces, we have included reports on Aero Sports in the Army, a scuba diving camp conducted by the Navy in Lakshadweep for children, adventure activities promoted by the NCC and an overview of India's mountaineering institutes, wherein we have covered an informative Q and A with the Commandant, High Altitude Warfare School in Gulmarg. We continue with our regular Wellness and Money Matters columns too.

I am sure you will be keen to read about our adventurous exploits – we look forward to your tips and feedback. **In our next issue, the primary theme would be on Leadership and we plan to highlight our iconic military leaders like Field Marshals Cariappa, Manekshaw, Marshal of the Air Force Arjan Singh, Admiral RL Pereira, Lieutenant Generals Harbaksh Singh, JFR Jacob, Hanut Singh and such others.** We invite your articles on such iconic leaders; these may please be sent to chiefeditor@medalsandribbons.com by 05 February 23. We would be paying a suitable remuneration.

LETTERS TO THE EDITOR



Oct. - Dec. 2022 ISSUE

Op PAWAN – FOR THE RECORD

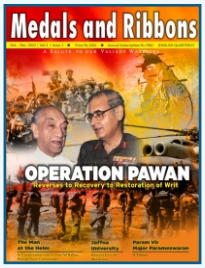
Dear Sir,

On promotion to Major General, I was posted as ADG MO (B) and happened to be involved from the very inception to the launch of Op PAWAN which may be for the first time, had the three Services Chiefs in total harmony as I witnessed during the month long, almost daily deliberations by The Chiefs of Staff Committee. What struck me most forcefully was the fact that the PMO had failed to carry on board the LTTE Supremo Prabhakaran and we paid a heavy price because of his duplicity from H Hour itself and onwards.

As the plan involved a synchronous tri-services mission, so for the first and perhaps the only time a Joint Operation Order was prepared, signed by General K Sundarji, Admiral Tahiliani and Air Chief Marshal La Fontaine and delivered by hand.

It was decided that operational command of PAWAN would be vested with the Southern Army Commander. At this stage, I was posted to Command 18 RAPID.

- Lt.Gen. Baljit Singh (Retd)



Oct. - Dec. 2022 ISSUE

Dear Founder & Chief Editor,

1. My compliments on your effort put in to bring out this story telling account of Op Pawan.
2. For serious content I personally feel the following could have given a better insight

Overall Accord:- Mr Harjit Puri (presently a Minister) who drafted the accord, in the signing pic he can be seen standing by our PM's side. Your account here by a Veteran is off the mark in the absence of ground knowledge.

How Operations Commenced:- Col GS HQ 54 Division Gen Hoshiyar Singh, essentials are missed out here.

Heliborne Operations Jaffna:- 2ic 10 Para Commando Gen Sheonan Singh, he got VrC here & the Team Cdr Colonel Rajiv Nair, who got a Sena Medal would have given you sustainable insight. Gen Dalvir the then CO, who got VrC here could have explained how exactly the rescue went in and other salient aspects which would have made the reading worthwhile.

Similarly other aspects too are a miss. How Jaffna Town was operationally organised with a Town Commandant, how elections were held, how and why 'KITTU' was released etc etc the actual meat of this massive operation. Your story telling skirts the immense contribution this Op had on subsequent SL Army culmination Ops by 2009.

3. Classic coordinated ops were undertaken in the jungles of Vavuniya by numerous units which were of greater intensity than anything that took place in Jaffna Town.
4. Felt conveying my feelings may contribute to future editions of this great effort you all are putting in.

Best Wishes & Regards,

- Brigadier M S Sandhu (Retd), Ex 10 Para Commando

Dear Chief Editor,

Just received the copy of Medals & Ribbons, a fabulous masterpiece for keeps. My heartiest congratulations to the production Team and in particular to you for having got it on shelf in such a short time.

Cheers, with best wishes,

- Colonel Ranbir Bhadauria (Retd), 10 Para (SF)

Editorial Comment. We are grateful to our readers for their inputs, views and feedback. Thank You.

The Rigging on the Mast of INSV Samudra.

SAMUDRA-III :
SAILING TO THE GULF

Voyages across the seas in small vessels have a very high danger quotient, and men-at-sea remain at the mercy of Varuna, the Sea God. This story brings alive the thrills and perils faced by a yachting expedition in 1991 to the Persian Gulf.

"I must go down to the seas again, to the lonely sea and the sky, And all I ask is a tall ship and a star to steer her by; And the wheel's kick and the wind's song and the white sail's shaking, And a grey mist on the sea's face, and a grey dawn breaking."
- John Mansfield, 1902

The sea has always beckoned men of courage to its placid calms and raging fury, challenging him to explore its mysterious expanses. The oceans have become synonymous with the spirit of adventure and the quest of mankind to discover the unknown. From serene tranquillity to tempestuous fury, the sea green waters have always stirred the spirit of travel through its enormous moods.

This sailing vessel has an interesting history - it was captured by the Coast Guard for illegally operating in Indian waters with sophisticated equipment in the lower deck. When accosted, the crew fired at the Coast Guard and were then overpowered. One crew member tried escaping by jumping into the sea and was later captured! It was subsequently handed over to the Indian Armed Forces in the 1980s by the Lieutenant Governor of Andaman & Nicobar Islands for adventure

The author at the Wheel - A calm day at sea.

expeditions to promote inter-services spirit and to develop leadership and to instil courage and daring. The yacht was inducted into the auxiliary fleet of the Indian Navy as an Indian Naval Sailing Vessel (INSV) and thus was born the *'INSV Samudra'*.

INSV Samudra is a 1974 vintage fibre-glass sailing yacht, 43 feet in length, 13 feet 11 inches beam (width) and 13,000 kg displacement. It has two masts, designed for carrying a jib sail/Genoa, a main sail, a mizzen sail and a huge spinnaker, the colourful balloon-like sail in front. It has a lower covered deck with seven bunks, three x 300 litre freshwater stainless steel tanks, a very small toilet and a compact galley (kitchen) with a gimballed (swivelled) gas stove with clip-on vessels, and an insulated ice-box.

The Persian Gulf Expedition was organised under the aegis of the Inter-Services Adventure Cells and launched from Kochi in September 1991. After sailing along the Western coast of India up to Mumbai, the yacht crossed the Arabian Sea and called on the ports of Muscat and Bandar Abbas, later to return to India sailing along the Makran coast touching Okha in Gujarat, Mumbai, Goa, Mangalore and finally returning home to Kochi in December 91 after a 6000 km voyage across the seas.

Samudra always carries an inter-services crew comprising one Army officer, four Navy officers, one Air Force officer and one Coast Guard officer selected after a tough screening consisting of both physical and mental abilities with stress being laid on all-round qualities. Multifarious skills acquired by an individual through his life, may come in as a lifesaver in emergencies during such perilous voyages. I was lucky to be selected from amongst ten Army aspirants thanks to my sailing skills acquired during my days of competitive sport sailing in small yachts, leadership and engineering experience during Army service, good swimming and being an amateur radio license holder to boot. I thus discharged the duties of second-in-command (XO in Naval parlance), sailing tactician, engineer officer and communication officer.

The other responsibilities were divided thus - the skipper was Commander SB Anand from the Navy, the navigating officer was Lieutenant Mukul Asthana from the Navy who had prior service in the Merchant Navy and was an expert astro-navigator and knew myriad stars like the back of his hand, 'Tough-as-Nails' Lieutenant Anil Katoch from the Naval Marine Commandos (MARCOS) was the diving and rescue officer, Lieutenant NK Grover from the Navy with two earlier yachting expeditions to his credit was in charge of sailing, seamanship and lifesaving stores and sailing technician, an engineer officer from the coast guard Assistant Commandant Pradip Salunkhe was assigned the job of electrical officer and Flight Lieutenant SK Arora, a helicopter pilot from the Air Force looked after supplies, logistics, medicines and boat storage. Each crew member had unique abilities and combined to synergise as a capable team for this arduous expedition.

I'd like to make a special mention that all seven members of this expedition got Amateur Radio licenses. We set up an Amateur Radio station inside *Samudra* with the antenna attached to the two sailing masts and a base station at the Naval Base at Kochi to keep a tab on the expedition progress and pass important weather and safety information to us. The yacht was also equipped with a 100 Watt Navy Radio Set for official Naval communications through Morse code!

Radio was our only means of communication. The expedition crew eagerly awaited calls from Amateur Radio operators around the world; in particular, calls from Major General Vombatkere, call sign - VU2DAY from Project Himank in Leh, Mr Tariq call sign A45YT from Muscat, Lieutenant Muthu call sign - VU2MPE from our expedition base in Kochi, Commander MS Prakash call sign VU2MSW from Mumbai and many others. This was our only lifeline on which operators worldwide could have put us in touch with a doctor for medical emergencies and for rescue too. We were pleasantly surprised and touched when HAMs ensured we celebrated Diwali at sea transmitting seven cap pistol shots (for seven crew members) over the radio, whilst we were somewhere in the middle of the Arabian Sea!

After initial screening, the crew underwent training in navigation, seamanship, medicine and first aid, meteorology, boat repair techniques etc, at the Naval Base, Kochi. Accounts of various voyages were read, apart from perusing charts and Admiralty publications like Ocean passages of the world, the Mariners Handbook, the Nautical Almanac, Admiralty List of Lights etc. We spent hours pouring midnight oil over ocean routing charts. This formed an important phase of the expedition, since one must plan meticulously, catering to all possible contingencies that may arise at sea and put in place a plan for each, since there may not be a second chance at sea; preparation had to be one hundred per cent. We practised man-overboard drill in Kochi and realised that it would be almost impossible in rough seas to manoeuvre this sailing yacht and rescue any crew falling overboard.

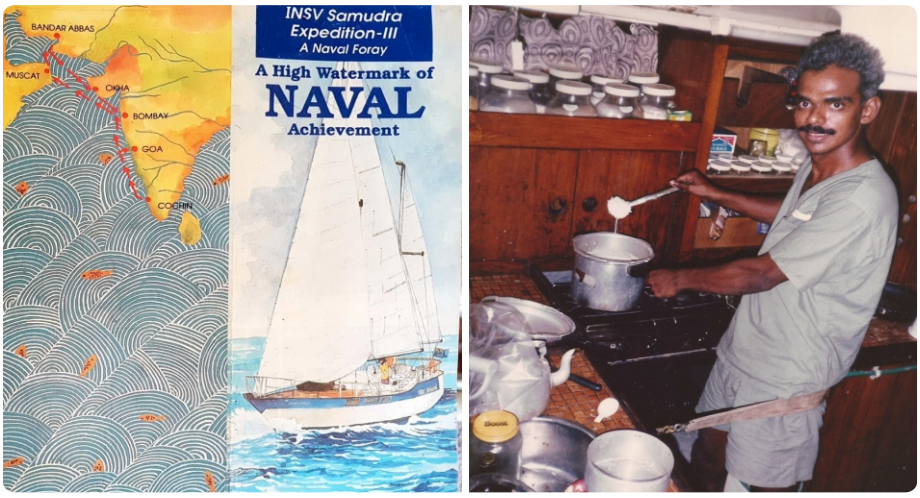
The boat itself being very old, needed extensive repairs, maintenance and modifications which were personally done by the crew. We added a simple radar reflector comprising two circular aluminium discs meshed at right angles and strung it up on the mast. It considerably improved the chances of being spotted by a ship's radar! We also carried a mechanical fog horn operated by dragging a cycle chain on a metal reed and the loud low-frequency sound would be heard for a considerable distance over a foggy sea through an elliptical horn.

We checked and cleaned up the underwater lightning conductor stainless steel plate with the help of our Naval Commando's scuba-diving skills! We also practised using the life-boats in case of being ship-wrecked. We also calibrated the Emergency Position Indicating Radar Beacon (EPIRB) – an international beacon, activated by sea-water from a sinking ship. All this gave us great confidence to handle any problem which may arise at sea. Two months of hard work finally saw us fully prepared to go.

The expedition was flagged off from Kochi on 20th September 91 by the Flag Officer Commanding-in-Chief of the Southern Naval Command of Indian Navy. Earlier, he had challenged us to use only a sextant and a compass like Columbus and ordered the 'Satnav' (precursor to GPS) and 'Speed-log' (speedometer) to be removed to add to the element of adventure and to test our skills in navigation and seamanship!

We merrily set sail in an excited state and no sooner than being out of sight of the harbour, we realised that we had forgotten to carry salt and tea. On the passage to Goa, we survived by adding sea water to taste for cooking and believe me, it was a helluva experience to eat such meals! On the morning of 23rd September, off the coast of Mangalore we had company of a school of whales that came very near us spouting away like huge steam engines! The younger whales frolicked around, and one even went underneath the hull, giving us anxious moments!

INSV Samudra at Kochi Harbour. (Inset. The author operating the Navy Radio Set).



Left Photo. Expedition Route and the Sailing Vessel. Right Photo. Mother-of-the-day: cooking on a gimballed gas stove wearing submarine disposable clothing and with a strap around the waist!

Later that night, when visibility was very low, one whale came very close to the yacht giving us a scare; a gentle whip of its tail could easily break up the yacht! On nearing Goa, we encountered near gale conditions and steered through a thunderous rain squall. The power of nature and our own vulnerability struck each one of us and we prayed silently. The whole yacht became a rolling-rocking platform with waves crashing over the bow and washing over the deck right through our yacht. The visibility was almost nil and huge raindrops were hitting our faces like icy stones. The special hooded storm suits were a saving grace on such stormy seas!! The storm mercifully subsided after a couple of hours and we breathed easy and sailed on.

We left the Indian coast from Mumbai on 5th October 1991 on the longest and most arduous leg across the Arabian Sea. The duty cycle was planned with simplicity; watch duty was always in buddy pairs and for any 12 hour period, one had to be on 'watch' for four hours followed by eight hours off! One out of the six crew would be nominated as *'Mother of the Day'* to cook, serve and wash vessels every six days! Being novices in cooking, to put it mildly, one of us managed to get gulab-jamuns exploding after he tried to re-fry them in boiling oil after being dipped in sugar syrup!!

The yacht went through several severe squalls and thunderstorms and also felt the effects of a distant cyclone making us realise the awesome power of the sea and of nature. One of the most rewarding experiences of being at sea – sailing silently and gracefully by the wind – is the serene tranquillity and the changing moods of the sea and the skies. The colour of the sea, the sun and the stars change constantly, with each day being more fascinating than the other. It is indeed a sight to behold the star-studded skies on a clear night – millions and millions of stars that I never ever saw or imagined, were visible through the clear atmosphere above the seas, as compared to the dusty and light obscured visibility in our cities. On calm days, one had to just peer over the gunwale of the yacht to spot numerous forms of marine life visible through a transparent blue-green sea - I vividly remember incredible coloured and patterned jelly fish swimming gracefully one morning. We were half-way across the Arabian Sea when, on a calm day with hardly any breeze and when the sea was a tranquil mirror, we spotted two huge fins sticking out of the water surface for about two feet; a giant shark pair, more than 25 feet in length were heading straight for the yacht! Their graceful, slow and unhurried swimming movements were incredible to watch and no doubt, they are truly the emperors of the ocean, fearing nothing. The sharks, swimming through crystal clear waters, came right at us and went right under our keel, much to our surprise and anxiety!

Another breath-taking phenomenon we witnessed was the bioluminescence of the waters. The mariners handbook lists about a dozen different types of luminescence each more beautiful than the other. The most common form during our passage was where agitated portions of the sea turned a fluorescent green. At night, with a strong wind blowing, each wave top becomes a fluorescent green, a sight indeed beyond description. During twilight, seeing the luminescent wake of our yacht and it's silent movement by wind power (without engines), curious dolphins and porpoises used to come and swim effortlessly near the bow wave of the yacht and each would leave

beautiful luminescent trails. Dolphins, being the intelligent creatures that they are, used to respond readily to whistles and calls from the crew – a most rewarding experience. Also, several birds flying across the vast stretches of the ocean would take a break on our yacht. Some were even bold enough to walk on our deck and allow us to feed them from very close quarters! This provided a great thrill to the crew and served to break the monotony of seeing water all around for weeks on end.

Finding one's 'sea-legs' took time; I recall one volunteer officer in particular, who vowed that he'd walk around the world but not set foot on a yacht again as he became terribly sea-sick on a trial night sailing sortie!! Despite finding our sea-legs soon, we all lost considerable weight during the passage both due to severe duty cycles, lack of sleep and restricted fresh supplies. All fresh vegetables were finished in about four days' time and thereafter it was potatoes, onions, pumpkins, tinned food and fish caught at sea. We once caught a small shark on our trailing fishing line and it was stunning and a bit heart-wrenching to see it refusing to give-up for hours after being out of water.

Entering the Persian Gulf, we were wary of any flotsam that could be sea-mines leftover from the Gulf War and also of huge ships which would hardly be able to notice us, especially while crossing shipping lanes. One night, we were rudely woken up by a frantic call from the sleepy on-duty crew members and rushing to the top deck we were confronted with a massive commercial ship towering above us and steaming by at very close quarters. We almost capsized in its wake but survived due to the self-righting design of the yacht with a lead-weighted keel!!

After crossing the vast Arabian Sea, we entered the beautiful port of Muscat in Oman, navigating only by the stars and sun with a sextant and steering by a magnetic compass. The reception from the Indian community and the HAMs at Muscat (the then Sultan of Muscat was a HAM with call sign A41AA) was uplifting. We received very special treatment and gifts to remember. Fellow Indians like Mr Tariq, made our stay special indeed.

After four days of rest and recuperation, we sailed across the mouth of the Persian Gulf and entered the port of Bandar Abbas in Iran. The Iranian Navy hosted us and were warm and friendly. After another brief halt of four days there, we headed back to India, sailing along the Makran coast. Our scheduled halt at Karachi in Pakistan was cancelled at the last moment due to some disturbances following the Sharjah cricket match between India and Pakistan. We reached the port of Okha in Gujarat on 7th November 1991 where we almost got swept away from our moorings due to the extreme tidal currents in the harbour. After a brief halt, we set sail for Kochi with halts at Mumbai, Goa and New Mangalore. The expedition finally touched Kochi on 4 December 1991, to a very grand welcome by the Indian Navy on 'Navy Day'!

The experiences during the expedition have been indelibly etched in my memory and are cherished by me as a treasure. One feels less earthbound and close to nature during such experiences apart from teaching us terrific leadership lessons in adversity and team-work. I record here my utmost gratitude to the Indian Armed Forces and to the Corps of EME and last but not the least – HAMs of India and the world – for having given me such a wonderful opportunity of a life-time and excellent support during this expedition.

❑ ❑ ❑

Brig. S Rajaram (Retd)

Brigadier S Rajaram (Retd), an alumnus of National Defence Academy (NDA), Pune was commissioned into the Corps of EME in June 1980. He has served in Ambala, Rajouri, Port Blair and Sukhna amongst other stations and held important staff appointments before his last tenure as Dean in MCEME. Before joining NDA, he had qualified from his school as an Amateur Radio Station License holder but was too young then to be issued a license in 1975. Before the expedition in 1991, he re-applied for his license and was assigned the call-sign VU2RJV. His keen interest in sailing in NDA earned him a 'BLUE' and also 'The Best Helmsman' trophy. Subsequently, he won two National Championship titles in 1986 in Enterprise Inland Sailing and Laser Class of boats and represented India in Enterprise Class World Championships in 1992 and 1997 earning laurels for the country and the Indian Army. The Samudra-III Expedition team was also awarded the Admiral Ramdas Trophy for offshore Adventure Sailing of the year in 1991. Presently settled in Chennai, he is active in 'Amateur Radio' and engages in social service.

CLIMB EVR'Y MOUNTAIN

Spurred by the tireless support of their father Col Virender Singh Malik (Retd), Tashi and Nungshi Malik's story is one of unconventional dreams and daring. Neeti Jaychander is in conversation with the world's first female twins to climb Mount Everest among other formidable summits.

"Great things are done when men and mountains meet," said William Blake. We don't know if the word 'men' in this line was loosely used to represent mankind, or if the great English poet simply wasn't prepared for the fairer sex to unexpectedly accomplish 'great' feats two centuries later!

On May 19, 2013 at 6.33am, twins Nungshi and Tashi Malik summited Mount Everest together, becoming the world's first female twins to do so. They were barely 21. But their dreams of scaling the top of the world took shape much before that, when they were still in their teens. What followed was an unforeseeable and stupendous spate of successful summits. By age 23, they had completed the Seven Summits challenge, raising the tri-colour on the highest peaks of all the seven continents as well as the North and South Poles. They also set nine new Guinness World Records, becoming the world's first siblings and twins (as well as first and only South Asians to date) to complete the **'Adventurers Grand Slam'** and **'Three Pole Challenge'**. At the time, they were also the world's youngest people to achieve it.

The twins make no secret of the central role of their father, Col Virender Singh Malik (Retd) who they teasingly address as their 'friendly-virus' for his invisible backstage support. He was no doubt their inspiration.

Excerpts from an interview with the trio.

Col Malik, you were the product of a Sainik School, National Defence Academy and the Indian Military Academy. You passed out in the top few of your course and post commissioning, you topped almost all the army courses you attended, getting the first Best YO and Commando Dagger in your Battalion.You also attended the prestigious Defence Services Staff College Course in Wellington (TN). Besides serving as an instructor at Officers Training Academy, Chennai, done a UN Peacekeeping assignment in Sierra Leone. While commanding 22 Assam Rifles in Manipur, you suddenly quit ! What drove you to such a dramatic decision?

VS: Most people work hard to achieve a set goal, a high grade or next promotion. For me it's just my nature to 'give it all' to whatever I do. The Infantry career is particularly very demanding. While I relished it and time flew by, I realised the biggest price I had paid – near total neglect of my kids and wife. The twins were growing fast and we were like strangers. I could barely recollect their childhood. By the time I reached the pensionable service of 20 years, the sense of guilt became too strong. When I shared my thoughts with a couple of friends, the common concern was *'But what will you do outside? Don't leave till you have a job in hand?'* I was clear though. I wasn't leaving one job to get into another. I just wanted to spend time with my daughters and be around. As a principle, I do not regret my decisions. The decision to leave with no job in hand, a nonworking wife and two school going kids, silly by standard thinking, is actually the one I am particularly proud of!

From display of extreme physical courage while eliminating a terrorist in a face-to-face encounter in Kashmir, to marrying a girl outside of your conservative and traditional community in rural Haryana, is your indomitable spirit something that your daughters have inherited from you?

VS: A huge part of the autonomous spirit I guess developed

an indomitable spirit

Winning the Nari Shakti Award

early, from largely unrestricted and unregulated village life. I was already 'baptized by fire' amidst severe resource constraints and harsh living conditions of rural India in the sixties. There was little fear because there was never anything to lose. I am happy the twins did not have to suffer similar material hardships but I carefully exposed them to life's different perspectives, including thriving on limited means. I also deliberately encouraged them to live freely, dream wildly and explore fearlessly.

Tashi and Nungshi, how was it growing up with a parent like your father?

Tashi: All we really remember of our growing up days was the 'freedom to be.' Those years shaped our own worldview, which we now realize was not so common. It may sound unreal, but Dad never asked us the result of our academic exams! He would simply remark *'you are your best judge, you know what you like most, you set your goals, you plan your work and you only are the ones to know if you are happy or satisfied with whatever you achieve.'* He put us in the driver's seat at a very young age.

Nungshi: Dad always mentioned that he is sharing his perspective based on his own experiences, and not 'advising'. Needless to say, such privileged grooming only helped us become more responsible for ourselves and more self-aware. We excelled in all aspects of school life – sports, games, extra-curricular activities and academics, passing out first and third in the girls' section during our school leaving exams. We were not affected by the biggest preoccupation of our peers at that stage: which college to get into and what line of career to pursue! Most parents were more stressed than their wards over how to best 'settle them' in life.

How did scaling Everest become a dream?

Nungshi: Many people can't believe that mountaineering never figured in our thoughts or conversations until the Advance Mountaineering course in 2009. As it's culminating event, we climbed our first summit. Mandatory for all trainees, Mt Rudugaira is no extraordinary mountain, nor is its height of some 19,500 ft which hundreds of participants scale every year. However, for some, particularly girls, this inconspicuous mountain has served as a springboard for world record achievements. The three weeks on this course changed our lives. Never had we enjoyed any activity this intensely, felt such strong team bonding, done such daring exercises or experienced such amazing self- discovery! Each day was about pushing ourselves against our wills, forcing body and mind to go well beyond fatigue point. Most importantly, we felt a huge pride at being able to 'lead the pack.' Those who seemed sceptical about us based on our lean frame were in for a surprise. Very soon we earned the grudging respect of all the boys and special admiration of our trainers. Time flew by and we earned the top rank in the group, three-fourth of which were boys. Our instructors were so impressed with our speed and stamina that they

nicknamed us 'Rajdhani' and 'Shatabdi' express, two of the fastest trains in India at that time. The chief instructor fondly addressed us as 'our Everest twins' always urging us to attempt Mt Everest as soon as possible. So, it was their adulation and faith in us that really acted as rocket fuel that catalysed our 'Everest dream'.

You promised your Mom you would quit mountaineering after the Everest challenge. Yet you continued climbing and in fact expanded the range of your adventures?

Tashi: If courage is contagious, so is fear. Mom's two years of constant fear actually impacted us profoundly. At that time, we had genuinely resolved to quit extreme climbing. Although we summited Everest and accolades poured in, several people implied it was a one-off, 'random' stroke of good luck. But we had no doubt that we were genuinely very strong to climb any peak. To prove the naysayers wrong and further shatter gender stereotypes, we conceived the idea of the mission of Seven Summits and eventually of the Explorers Grand Slam. With this success hopefully, we made a powerful statement that 'girls can do anything' and that 'mountains don't discriminate based on gender'. With dad as our lead scheming partner, we again persuaded mom to allow a few more 'lesser dangerous' climbs without sharing any details.

Given wider gender beliefs and the sheer scale of potential risks in attempting the world's highest peak, you must have faced several challenges. How did that affect you?

Tashi: Oh, absolutely! We lost two precious years in just getting the parents' go ahead! We had no experience of big climbs and were barely 18 years of age. Compounding our odds were our delicate and fragile frames of barely 52 kilos each. While dad was non-committal and kept our desire a secret, mom's first reaction was 'over my dead body!' She quickly shared her anguish with her close friends and relatives, all adding up to a constituency full of shock, disbelief and disapproval. *'You are girls! Who will marry you if you lose a limb? How many women do you see climbing? You are such beautiful young women, better explore modelling.'* And so, the unsolicited, 'friendly' advice kept pouring in. It started impacting us all. Against our will, we were slowly getting trapped in a vicious circle of doubt, fear and pessimism. Even men fail in their attempts, but our failure would have played further into the gender stereotypes.

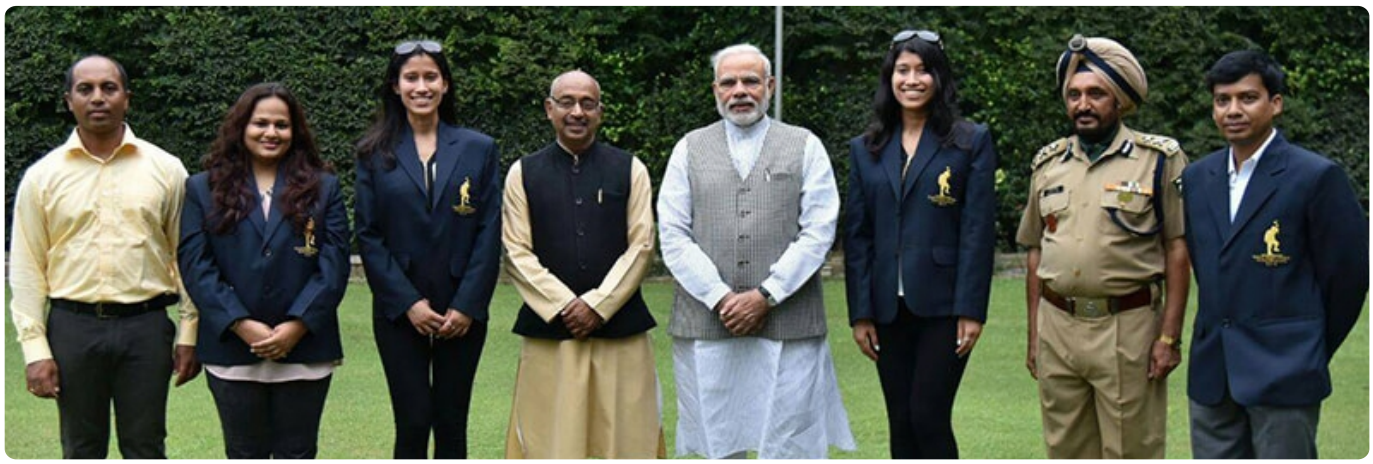
We were also fully aware of dad's limited financial capacity. He had candidly admitted 'putting all my savings together, I may be able to meet your climbing expenses (a whopping 45 lakh rupees!) but if you don't succeed, I won't ever have funds for a second attempt'. This raised the stakes and worsened our fear of likely failure! Under such circumstances, our climbing journey has taught us more about the virtues of persistence and bouncing back after we hit the bottom than all of our successes.

Nungshi: As women, biological peculiarities such as 'menses' can be very daunting for some. We recollect while attempting Everest, our worst fears came true as periods started just the evening before we were to leave for the summit bid! With mounting cramps and absolutely no way to change sanitary pads, we laboured on for 21 hours almost non-stop to reach the summit and return to the safety of Camp 2 at some 23,000 ft.

How has the father-daughter relationship evolved over these years?

VS: There was a time girls would call me 'uncle' when I returned after a prolonged absence due to field postings! My life's biggest and most satisfying accomplishment is not any of the professional or personal successes, but in many ways to become my own

Holding Aloft the Radiant Flag at the South Pole, December 2014.



With our Prime Minister

daughters' best buddy. I feel like I'm their third sister!

It is so much easier for people in careers such as the armed forces to pursue extreme adventure. They not only get full funding and logistic support from their organisation, but also awards and career enhancement, all along drawing full salary. For you the financials of mountaineering must be particularly challenging.

Nungshi: For private individuals the costs are almost prohibitive. Way back in 2013, despite dad's good Nepali connections and our half-Gorkha lineage, for two of us the cheapest fee we could manage for 1 Sherpa: 1 climber ratio was Rs.22 lakhs per head. This excluded training, travel, gear and insurance. To cut costs, we hired old, used, vintage gear from our national mountaineering federation and drove by car to Nepal.

Tashi: Contrary to popular belief, extreme climbing is very expensive. Most people cannot believe that we spent over 2.5 crore on our Explorers Grand Slam! With all of our parents' savings gone, it was made possible only through funding support from spirited individuals and a few corporates, including Col David Devasahayam personally and through the Radiant Group of Companies. We remain eternally grateful for that.

Nungshi: I think over 80% of dad's energy and time was spent on mobilising funds. Now we understand the financial stress and suffering our parents endured, coupled with the constant heaviness of allowing both their young daughters on extremely hazardous mission. Mom and dad never shared their financial woes, knowing it would put undue pressure on us to succeed at all costs. But we could easily feel it. As dad now candidly admits 'as proud and happy I was with each of your scintillating successes culminating in so many world firsts, those two years were my life's biggest nightmare and I do not recall ever sleeping a single night peacefully, until it was all over.'

With only source of income being his pension, our financial difficulties would have been particularly harsh in recent years but we were lucky to win some ambassadorial sponsorships and paid speaking assignments from corporates. Dad isn't at all good at marketing and making money. Once we realised this, I took on the role. Quickly we gained corporate admiration as speakers among Indian adventurers and have been charging respectable fees. Our current focus is on creating means of assured income and we are strategizing it. As a fallback mechanism, dad, with very limited resources, has turned a wild inhospitable piece of his property into a beautiful adventure facility. This itself has limitless revenue generation possibilities.

Tashi: We have not started earning anything through our adventures, except from motivational talks. We do hope to continue living out our passion for adventure and create sources of income around health, wellness and the outdoors.

Col Malik, you wanted to write a book around your daughters' trailblazing adventures. Is that still on the cards?

VS: The idea of a book started emerging as soon as they finished the Explorers Grand Slam. There were clear financial and publicity spinoffs and we needed both for supporting their other bigger projects. But the idea remained on a 'to do' list owing to our engagements on too many fronts. The big trigger came soon after the World's Toughest Race. The race opportunity unexpectedly posed extraordinary logistics and training challenges. Even in victory, this experience was traumatic. On the flight back from Fiji, I slumped in my seat overwhelmed by the intensity of what we had gone through. How wonderful it would be to share this story with the world! We have done bulk of the manuscript work and hope to get it 'publication ready' latest by middle of next year. I must confess that the idea of the book way back in 2018 got overshadowed by my obsession with the Outdoor Leadership School! The race itself is now an epic 10-episode series showing on Amazon Prime Video with the twins' 'Khukuri Warriors' being one of the featured teams.

How does mountaineering differ from other adventure sports?

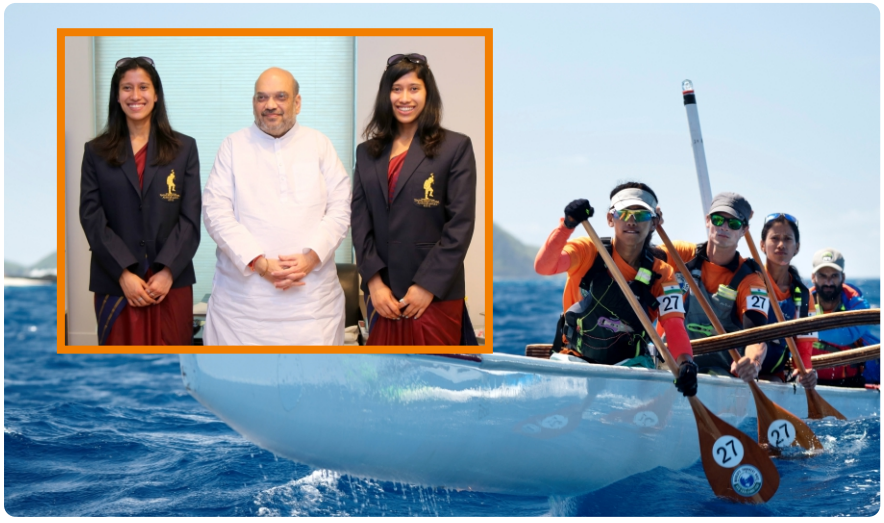
Tashi: Most adventure sports are inherently risky but extreme mountaineering is particularly so. This can be borne out by the high attrition rate of mountaineers vis a vis other adventure athletes. It's a shocking realisation that in the past decade since we started climbing, we have lost 16 fellow climbers who we knew closely! Globally, there are many more climbing tragedies. I wonder if any other adventure sport sees such high fatalities.

Nungshi: The feeling of your vulnerability and insignificance in front of the gigantic mountain and imposing mass of snow hits hard. A small shake of mountain (avalanche) can easily send you into oblivion. It's quietness and remoteness magnify loneliness and fear. Amidst very high chances of things going wrong, there is also the grim reality that evacuation may not be possible. To cope with these, to steel oneself not for the final spurt of a sprinter cheered by the plaudits of the crowd but in lonely solitude for hour after hour, perhaps day after day—this demands the rare blend of an introvert who can assess themselves and then calmly weigh the chances of success, and the single-minded enthusiast ready to face trials and tribulations, even death.

Also, extreme mountaineering to a greater degree than other adventure sports, is a unique group activity. Each team member is tied to your rope up the mountain. They will either drag you down to death or help you move up!

How do you prepare for a climb?

Tashi: I have learned one thing: luck is when preparation meets opportunity. Our mantra is *'Prepare for the worst and hope for the best'*. When you have to carry extremely heavy loads over long stretches, gaining altitude and braving strong winds, you cannot afford not to be at your 100 percent fitness. But big climbs in subzero temperatures demand high body mass and fat to endure cold, loss of appetite as well as rapid loss of energy. This poses a catch 22 situation - the dilemma of hard physical training that burns high calories and preserving maximum possible weight demanding less physical activity. This on top of the fact that we are barely average 57 kg each! Our father is our mentor, coach and alarm clock. He draws out the most effective training and nutrition program for us. It includes strength training, aerobic and endurance with proportionate supplements of mass gain and



With Mr.Amit Shah, Home Minister

Virender and Anju with Bear Grylls at the Eco Challenge Finish Line

proteins. All these exercises become progressively strenuous and challenging as the climb gets closer. It's very important to prepare for both physical and psychological dimensions.

Nungshi: In addition to solid alpine snow and ice climbing skills, we need strength endurance, high-altitude tolerance, and strong cardiovascular conditioning. Just because we exercise regularly (four to six times per week) does not mean we have the conditioning needed to reach the coldest of summits. Plenty of people who have the endurance to run a marathon fail to summit high-altitude peaks. Pure cardiovascular fitness is simply not enough. We should focus on building physical conditioning necessary to ascend 3,000 feet of elevation on successive days carrying up to 30 pounds. We usually prioritise our training efforts in the following way :

- Climbing conditioning - pack-loaded uphill hiking, walking, and stair climbing
- Strength training for the lower body and core
- Cardiovascular training, including both aerobic and anaerobic workouts without pack
- Weight and flexibility training

Do you have any fears or misgivings when you embark on a mission?

Tashi: We think far more about the risks now than a decade ago. Someone had rightly observed *'youth will dare things that age will fear.'* At 21, when we summited Everest and through the successive spate of Seven Summit ascents, we do not recall being particularly afraid or apprehensive. I think it was a happy mix of youthful naivete and 'josh!' Dad knew we couldn't rationalise danger as he could.

Nungshi: Communication is key to deal with such fears. Dad always discussed these issues with us. He also reminded us that fighting fears is never a 'once and for all' event. It is a process. It is a daily reality. Fear is good, panic is bad. Overtime we learnt to recognise and appreciate fear for the role it played in refining our preparedness and fortifying our defences. If fear is contagious, so is courage. We try and surround ourselves with positive people, discuss the phenomenon more often and study the lives of achievers and great adventurers.

Do you ever have professional disagreements? How do you resolve them?

Tashi: Off the mountain, there's rarely an issue we agree on! Fortunately - though we still don't know why and how - the only time we have near total agreement and harmony with each other is when we embark on a dangerous adventure mission! There it is never about disagreement but decisions through discussion, brainstorming and acting in complete unison. That is the time we are actually in a 'two bodies - one soul' state with a feel of unmatched power and energy.

Nungshi: Twinship is something not many people understand. We both are each other's best buddies and on a mountain it's very important to have someone you can count on.

Your mountaineering expeditions must be full of interesting and exciting incidents. Do you have any such anecdotes to share with us?

Nungshi: In March 2014 we were traversing the 'Jurassic Park' like

tropical jungles of West Papua Island in Indonesia in a bid to summit the fifth of our Seven Summits, the Mt Carstensz Pyramid. At 16264 ft, it is Australasia's highest mountain. Pakistan's Samina Baig (who had climbed Everest with us, becoming their first woman to do so) was also with us on this expedition. The one-way trek to Carstensz's base involved 5 days through 'mud-river-highland' braving incessant rains. In one such attempt, trying to jump across a fast-flowing stream behind Tashi, Samina Baig slipped on the mossy log and fell in the stream being washed away and risking hitting the hard rocks that lined it. We both instantly acted to pull her out. Being aqua-phobic she could only utter a feeble 'Taa-sheee' before passing out. Alarmed, we gave her quick resuscitation until she regained consciousness. Later we would wonder, what if she had died that day? The Pakistan media perhaps would headline "A Pakistan climber dies in the company of two Indian climbers" with a million conspiracy theories souring our already tenuous bilateral relations!

Do you have any advice for women keen on pursuing adventure sports?

Nungshi: I have noticed that unconsciously most people's dreams and goals are shaped by fear. Living unconventional dreams is always a long, hard game. There is no free lunch and everything has a price. The only way you can self-actualize is by following your dreams. Imagine, we are already 31 years old and still do not have a secure career and no assured sources of revenue! It is indeed heartening to see more and more women pursuing tough outdoors. My message to all the budding women adventurers is: Believe you can and you're halfway there. The other half is 'unwavering commitment', setting aside fears of failure.

Receiving the Tenzing Norgay Award from Shri Pranab Mukherjee, President of India in 2015.

Too many of us are not living our dreams because we are living our fears. Innovate. If you do what you've always done, you'll get what you've always gotten. The only way to do great work is to love what you do. Passion backed with commitment is a sure recipe for success.

Tashi: We are all human beings first, each uniquely gifted with unlimited potential in need of an enabling environment. Gender is a human reconstruct that prevents us women from realising our full potential. *"Certain things catch your eye, but pursue only those that capture the heart"*. And this joy you will begin to experience only when you have learnt to celebrate life as a most precious gift to be fully enjoyed, without fear without self-doubt. Steve Jobs had famously said, **"Your time is limited, so don't waste it living someone else's life".**

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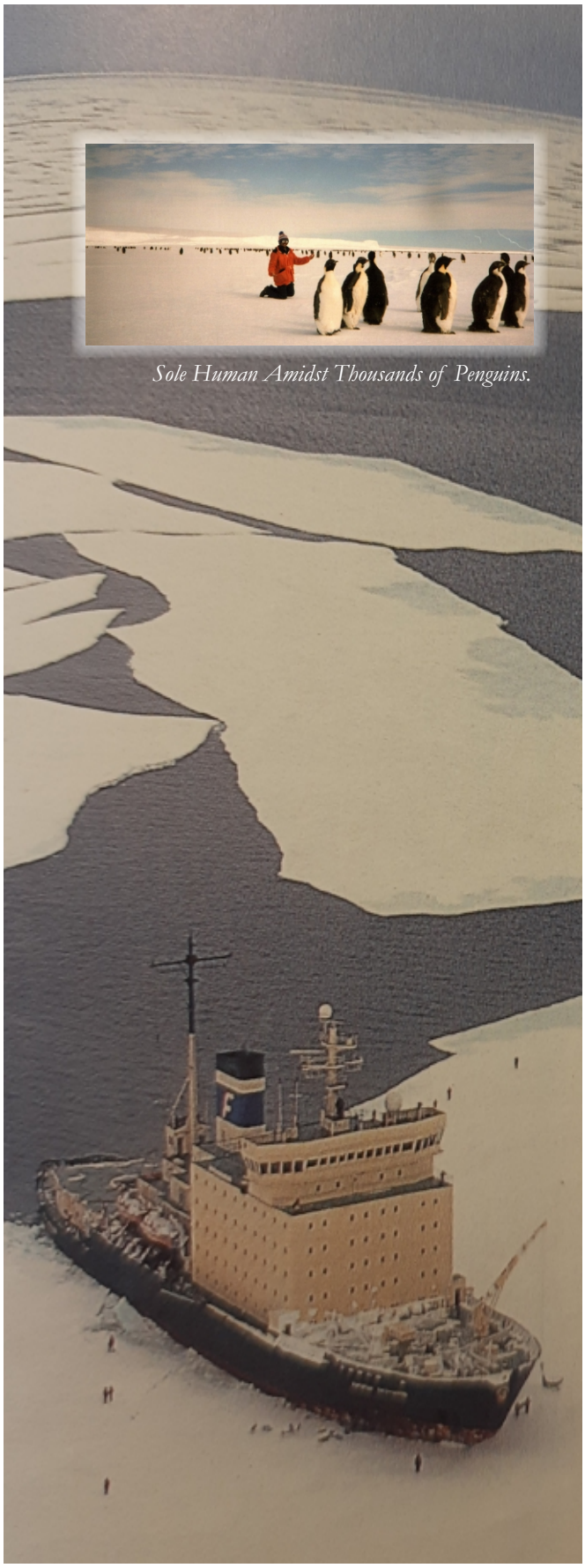
Neeti Jaychander has over 18 years of experience as a writer and journalist. For over a decade, she was the Senior Regional Editor (Southern India) at FEMINA, the country's oldest and largest-selling lifestyle magazine. She has been the Editor of ET Madras Plus, the erstwhile lifestyle supplement of The Economic Times, and has authored books for children. She is a writer with the Deccan Herald, Zenger News (the world's first digitally native wire service) and teaches a journalism course at the National Institute of Fashion Technology, Bengaluru.

Neeti Jaychander



Sole Human Amidst Thousands of Penguins.

EXPEDITION
TO THE ANTARCTIC

It was important for India to mark its presence on the frozen continent, which may well be a treasure trove of resources in the future. The Armed Forces played a leading role in setting up India's stations in Antarctica. The author narrates his experiences during his deployment there.

The continent of Antarctica is 98 per cent covered by ice with an average thickness of approximately two km (in some parts it is over 4.5 km thick) making it the world's greatest reservoir of fresh water (70%) and perhaps the largest refrigerator. The continent also has the lowest recorded temperature in the world at -89 degrees C at the Russian base Vostok.

My fascination with Antarctica started in school. Having read about the continent in my geography lessons and later about expeditions led by explorers like Roald Amundsen, Sir Ernest Shackleton, Robert Falcon Scott, and Admiral Richard E. Byrd, I was intrigued by the mystery surrounding the frozen continent. Just after I finished my engineering at College of Military Engineering, Pune, I volunteered to go on the 7th Indian Scientific Expedition to Antarctica. The expedition had a

mix of scientists and Armed Forces personnel. The scientists were selected by the National Centre for Ocean and Antarctic Research (under the Department of Ocean Development) to carry out a study on climate, geological and other ocean research aspects. The contingent however was largely from the Armed Forces. The Navy and Air Force contributed helicopters, pilots and crew while the Army contributed engineers and communications experts.

The Indian Government has been progressive in wanting to be in the exclusive clubs around development – economic or scientific. Antarctica is no man's land with a lot of mysteries around resources and amongst many other opportunities, provides early warning on weather patterns. To benefit from current and future discoveries, the Antarctic treaty requires a physical presence. Consequently, under its Antarctic programme, the Indian Government established the first permanent station at Dakshin Gangotri in 1983/84. The mission for our expedition (7th) was to help with logistics at Dakshin Gangotri and establish the foundation of India's second permanent station at Maitri at approximately 70 degrees South and 11 degrees East in the Schirmacher Oasis close to the Wohlthat Mountains (Queen Maud Land). The expedition had two groups. The first was the 'Summer Party' that would spend five months, including sailing time and then a smaller group that would spend approximately 16 months on the continent.

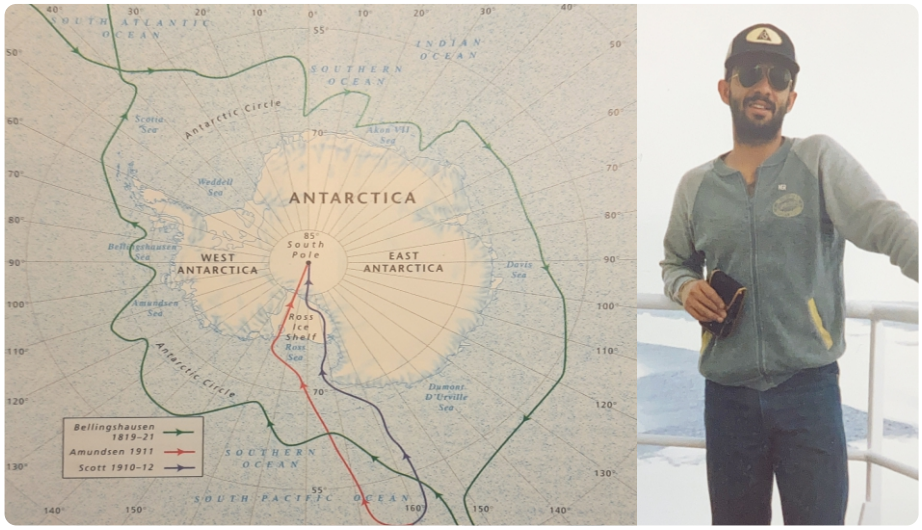
The selection was stringent with the usual statutory medical and psychological tests. Our acclimatization and team building was at the High Altitude Warfare School in Gulmarg. We set sail from Goa on 25 November 1987 and reached Antarctica around Christmas after a short stopover in Mauritius. The vessel that had been leased by the Indian Government was MV Thuleland, a 32,000 MT icebreaker carrying the Swedish flag and crew. The team of 92, led by Colonel Ganeshan, set out with 25 Scientists, 64 Armed Forces personnel, one photographer and two members from the Department of Ocean Development. The expedition had the distinction of having Mr. Sudhakar Rao as the first honorary Postmaster of the Indian Antarctic Post office.

The journey of over three weeks was relatively easy except when the sea turned hostile as we got to the roaring 40's and the furious 50's. It was a three-dimensional roller coaster for a few days and except for the well-seasoned crew the rest of the team was happy to stay in bed. The 32,000-ton ship was tossed around in the ocean like a match box, and we were happy to see the back of this wrath that I had read about but finally experienced first-hand. A memorable experience was crossing the equator as the Lord of the Ocean, Poseidon, approved our passage; our experienced Naval officers performed the rituals.

Once we got towards latitude 60 degrees South, the ocean turned white and we could see the masses of ice. The ship slowed down considerably and for the last 24 hours the ship was guided by our Naval helicopters that acted as pilots. When we finally berthed on the continental shelf, we were greeted by curious penguins. For the first few days we were assigned to Dakshin Gangotri, the permanent station to help stock supplies and help the team prepare for the winter.

We got our first taste of a blizzard within the first few days. We were living in an external shelter as the main permanent station was to house the winter team. When we stepped out at about 7 a.m, there was a blizzard at wind speeds that made it simply impossible to stand. It was a white out

The author reaches out to greet the friendly penguins.



Left Photo. Map of Antarctica. Right Photo. The author with the frozen ocean in the background.

with zero visibility. Five of us formed a human chain and started towards the main station at about 8 a.m. It took us over three hours to cover the 200 metres. When we got to the base, the doors had been covered with snow and we had to climb the roof to get in from the escape hatch. Such experiences renewed our respect for nature. We realized that we had absolutely no chance against the elements if we weren't properly prepared. It was a lesson that I have carried through all my life.

One night, when we had gone to bed the entire portacabin caught fire owing to a backlash of wind through the *'Bukhari'* (heating furnace). We bolted out in our 'long johns', bare feet onto the blue Antarctic ice. In photographs the ice looks inviting and soft. In reality it is blue ice and because of the katabatic winds, flowing through gravitation force the ice over the years formed razor sharp edges facing away from the direction of the wind and if you got your steps wrong, the edges could slice your feet off. The portacabin finally exploded as there was jet fuel stored nearby and the three of us lost most of our valuables, but we were lucky that we hadn't gone to sleep.

A few days later, we moved to the Maitri camp where we stayed in temporary shelters and started the mammoth task of shifting 200 tons of steel girders from the ship to about 75 km inland. Maitri is an oasis which in the context of Antarctica is terrain where ground or rock is visible through the ice. It is located close to the Russian station Novolazerevskaya where there is an airstrip that could land the large IL-76 aircraft for three to four months in the year. The Mi-8 helicopters were the real lifelines and the work horses flying sorties day in and day out to move the construction equipment to the new base camp. We had approximately 40 to 50 per cent effective days for work, as blizzards and white outs impaired work on most days. We made sure that we got most of the work done on good weather days. The over 20 hours of day light was very helpful as we could work long hours in good visibility.

The greatest challenge that needed skill was when a 250 KVA generator had to be brought from the ship as under slung cargo on a Mi-8 helicopter. I was on the aircraft that day and could see the nervousness all around particularly amongst the pilots who knew the impact of any adverse wind conditions on the way. The transportation was done by the air force without a glitch, and we put the generator into its designated housing. There was a fair amount of jubilation after this manoeuvre as we realized the importance of having accomplished this task. The Maitri station was designed to be on stilts so that there would be lesser impact of ice on the structure, vis-a-vis the Dakshin Gangotri station which had got completely submerged in ice and the structure had been compromised. The Dakshin Gangotri station was decommissioned a few years later. We spent the next month doing the survey of the terrain around Maitri and completed the foundation up to the floor beams. The next team would build the station superstructure. The 8th expedition led by Colonel Jagannathan, my former company commander at 113 Engineer Regiment, completed the station at Maitri.

We did get time out to go and visit a penguin rookery as well as see some seals breed on the continental shelf. As the scientists were doing their experiments, we also managed to get some krill samples that we carried back. We finally packed our bags and left Antarctica at the beginning of March so as to avoid getting caught in the freezing

Southern Ocean. Colonel Ganeshan and 14 other members including three scientists stayed back to man the station through the treacherous winter months. The team had completed its mission with the scientists having carried out systematic studies of the ozone hole, airborne magnetic survey of over 12,000 square km and studies for long term weather forecast. The Armed Forces had completed the maintenance of Dakshin Gangotri and completed the foundation work for the new Maitri station.

As I reflect on this adventure, I am compelled to look at an important facet of the experience which has now become a matter of survival for the planet; we could see the impending ecological disaster. Even as far back as 1987, scientists had flagged global warming and the need to course correct. Icebergs the size of large islands were breaking off from the Antarctic continental shelf and floating into the Southern Ocean. The protective ozone layer was being gradually disseminated and the impact of ultraviolet radiations was predicted to have a far-reaching impact on rising temperatures and sea levels.

Antarctica holds 70% of the world's fresh water in the form of ice. Hypothetically, if this and the ice in the polar region of the Northern pole melts, the sea levels across the world will go up by 230 feet, submerging every coastal city on our planet. This is an alarming thought. Furthermore, it is projected that by the year 3000, ocean levels around the world will go up by 13 feet.

When I returned from Antarctica and after leaving the forces in 1988, I started speaking at various events regarding the need for drastic reduction in our Chlorofluorocarbons (CFC) and Hydrofluorocarbons (HFC) emissions and single use plastics; my words fell on deaf ears. I started reaching out to high schools in Dubai to talk about the future of, and the need to preserve and safeguard our planet. The simple analogy is *"how will your body survive if your skin is peeled off"*. The school children were more attentive and responsive to the discussion as they perhaps understood that they would likely see the impact of global warming within their lifetime.

This was 34 years ago. What we have seen during this period is the gradual depletion of the ozone layer which is now becoming harsher as we are exposed to the changing weather patterns arising from global warming. We have seen artificial intelligence (AI) rendered images of future cities by 2050, but no one is paying attention to the acidification of our oceans and the impact on marine life by 2050; an incidence of dying fish owing to possibly pollution has come up this year in the Oder River which borders Poland and Germany. It is flagged as an environmental and ecological disaster. This is just the start of the destruction of marine life, whether by drought or pollution, which will have a material impact on the world. The sad reality is that the pace of change may never catch up with the impending crisis.

Despite all the gloom, I am a die-hard optimist and believe strongly in the words of Nelson Mandela *"I am fundamentally an optimist. Whether that comes from nature or nurture, I cannot say. Part of being optimistic is keeping one's head pointed toward the sun, one's feet moving forward. There were many dark moments when my faith in humanity was sorely tested, but I would not and could not give myself up to despair. That way lays defeat and death."*

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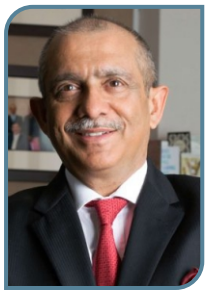
Dr. Rakesh Wahi is a visionary entrepreneur who has been involved with early-stage investments in emerging markets for the last 30 years. Rakesh Wahi, an alumnus from the 56th National Defence Academy Course in Pune, had earlier served in the Indian Army for about a decade. Dr. Wahi is Chairman of CMA Investment Holdings that has representation through its portfolio companies in over 20 countries. Dr. Wahi is the co-founder of the ABN Group that includes CNBC Africa, Forbes Africa and ABN Productions. He is also the co-founder of Trans National Academic Group that owns Curtin University Dubai, Lancaster University Ghana, TAG Middle East and ABN Training Institute. He is also the co-founder of Tech One Global which is one of Asia's most awarded IT Company that is a technology solutions integrator. In November 2016, Dr. Wahi published his memoirs through an autobiography titled "Be a Lion" that was published by Penguin South Africa. The book is available via Amazon or www.bealion.pub.



Dr. Rakesh Wahi

SKIING
TO THE SOUTH POLE

An expedition to the South Pole has become easier because of logistics systems and infrastructures in place. But yet it is a phenomenal challenge to the human spirit. To get an insight into the rigours, the pains and the hardships encountered, read on.

Very Windy at the Camp on the Glacier.

ANTARCTICA

In 4th Century BC, Aristotle had suggested presence of a symmetrical continental structure in the south of the globe to balance the known congregation of continents in the Northern half of globe. He called it "Antarktikos" or "Anti-Arctic" giving birth to the term "Antarctica." For many centuries, the Southern continent remained a highly debated topic among philosophers, geographers and sailors.

Antarctica, fifth-largest of the Earth's seven continents, is almost entirely South of latitude 66°33' South (the Antarctic Circle), and surrounds the South Pole. Antarctica, the world's windiest, coldest and the driest continent has an area of 14 million sq. km. It is also called a pulsating continent as the size keeps on increasing and decreasing during different seasons. The sea around the continent starts freezing during winter, increasing the size by hundreds of kms and the same starts breaking up as the summer approaches. It has the most inhospitable terrain and harshest climate in the world. The world's lowest temperature of –89.60 C was recorded here at

the location of the Geomagnetic Pole. The wind can howl at over 250 km/hour, and blizzards can rage for days together, limiting visibility to a few metres. 98% of the continent is covered with a thick layer of ice, with thickness varying from 800 metres to 4.5 km. The remaining 2% of the continent is visible in the form of small hillocks and mountain ranges. This ice cap contains more than 70% of the world's fresh water resources in a frozen form. The ice flows out from the centre of the continent into the sea and spreads in the form of ice-shelf. Icebergs carve out of this ice shelf, which are basically huge chunks of ice broken from the ice shelf. Investigations by Western countries have indicated that it may be possible to tow some of these huge icebergs to areas of water scarcity and use them as sources of fresh water. It has not been attempted so far for cost effectiveness.

DISCOVERING THE CONTINENT

In 1578 CE, Captain Drake of England sailed around the South American peninsula and demonstrated that the imagined land did not exist till 57° South Latitude. Between 1590 and 1670 CE, many sub-Antarctic islands were discovered near the American peninsula, but the 'promised land' still remained elusive. From 1730 to 1880 CE, extensive explorations were undertaken but were beaten back by the persistent pack ice. Between 1768 and 1776 CE, Captain James Cook from Britain circumnavigated the entire continent unknowingly without even a glimpse of the far-off Southern lands, thus proving that either Terra Incognita was only a fiction or *"unlikely to be of much use to anybody."*

On 27 January 1820, Captain Bellingshausen of Russia sailed up to 69° 53' South Latitude and sighted the hills of Antarctica. In the following decades, many international expeditions circumnavigated Antarctica and finally established that the different islands sighted were actually inter connected and they all formed part of a continent.

Interestingly, for sixty-five long years after the first sighting of the Antarctic landmass no one could actually land on the continent. In 1885, Borchgrevink and six other team members from Norway, Australia and New Zealand became the first humans to land on the continent. To reach the South Pole was the dominant theme in the next series of Antarctic expeditions. From 1907 to 1909, Sir Ernest Shackleton led a British expedition to within about 156 km (97 mi) of the South Pole before turning back because of exhausted supplies.

A second British expedition went into the field in 1910 under Robert Scott, as did a Norwegian expedition under Roald Amundsen. Using dogs to haul their sledges, Amundsen and a party of four reached the South Pole on December 14, 1911. Scott's party of five reached the pole on January 18, 1912, after hauling their sledges by hand over the roughest part of their route. All of Scott's party died on the return journey after the Norwegians successfully returned to their base. Shackleton returned to Antarctica in 1914 to attempt a crossing of the continent, but his ship, Endurance, became trapped in the ice and was crushed. Shackleton and his men made their way across ice floes to Elephant Island and were finally rescued in August 1916.

EXPLORING THE CONTINENT

Antarctica is rich in mineral resources and thus attracted the global powers and various other countries. Exploration of Antarctica and the Southern ocean started in the early 18th century mostly for fish, seal furs and whales. By the 19th century, the continent was claimed and divided by seven countries. These countries along with five others signed a treaty in 1959, called the Antarctic Treaty. The treaty decided to freeze all territorial claims

The eight members of the Indian Army South Pole Expedition November 2010 to January 2011.

IL-76 at Blue Ice Runway, Union Glacier.

and lays down that Antarctica is to be used for peaceful scientific purpose only. It provides for cooperation and exchange of scientific information and protection of the vulnerable natural environment. India became a member of the Consultative Committee of the Antarctic Treaty on September 12, 1983 and a member of the Scientific Committee on Antarctic Research (SCAR) in September 1984.

Indians were not involved in the initial explorations of this distant land. Indians first went to Antarctica in 1981 when the first Indian Scientific Station was established. Since, then two more stations have been commissioned and regular scientific teams maintain their presence on the continent. The Indian Army has been involved in the management and conduct of all scientific expeditions. Even the first two stations were constructed by Army Engineers.

OUR ADVENTURE IS GREEN LIGHTED

The Indian Army has pioneered and achieved many milestones in the field of adventure. Continuing its endeavour to achieve yet another milestone, the Indian Army launched its first Polar expedition to the South Pole in 2010-11. Our expedition was the maiden Indian attempt from an adventure point of view. Two Indians had however been on similar expeditions before ours, as part of international expeditions in their personal capacities. But the Indian Army's Ski Expedition to the South Pole was the first formal national expedition.

A trip to the South Pole, beset with impending peril at every step, is considered to be one of the toughest journeys on earth undertaken by humankind. Undertaken by a handful of individuals, the trip is the ultimate challenge to the physical, mental and emotional limits any intrepid adventurer can push himself to. Having scaled many of the towering peaks of the Himalayas, the Indian Army sought a tougher challenge and succumbed to Antarctica's magnetic pull. Thus, the idea of a Coast-to-South-Pole expedition was conceived in February 2010 by the Army Adventure Wing in Delhi.

61 volunteers finally assembled at the High Altitude Warfare School, Gulmarg in April 2010, where the trials for selection were conducted. The month-long selection procedure saw the volunteers' attending classes on skiing, navigation, survival in polar conditions, and maintenance of equipment and clothing besides tests for physical fitness, survival skills, endurance treks and written tests. After this gruelling training and selection phase, three officers and nine other ranks were selected who were then put through further psychological and fitness evaluation tests at the Army Sports Institute, Pune.

Pre-expedition training began in all earnest in Delhi. A rigorous daily two-hour routine of physical activity alongside documentation at the Army Headquarters became the order of the day. To develop the physical strength to pull sledges, carry enough fuel and supplies to last the duration of the expedition, we lugged heavy truck tyres, harnessed to our bodies for varying distances. A matter of concern was our taste buds which were accustomed to rich and spicy Indian food! Our culinary tastes had to be tamed and a taste for the bland preserved food developed and so we resorted to cooking our own meals. Gradually we adjusted to the food that we would be consuming over the days when we would be out on the remote polar reaches. The need of a medical capsule was also felt, especially since we had no medically-trained member. We

were imparted training in emergency medical aid and life-saving techniques at the Special Forces Training School, Nahan.

A TRAILER IN GREENLAND

The necessity of careful preparation and awareness about constant changes in the unpredictable weather and local hazards was of utmost relevance in this kind of expedition.

Greenland, with conditions being most akin to the South Pole was most favourable for the kind of training we required, in building up our knowledge of terrain, survival techniques and most important of all, the importance of meticulous planning. Hence, for the final and most intensive phase of pre-expedition training, we took off for Greenland on 28 August 2010. For four weeks in Greenland, we attained optimum physical and mental toughening essential for undertaking the arduous journey to the Southernmost frontier of the earth. At the end of the training expedition, we could achieve skiing for an average distance of 25-30 kms over a period of 8 hours every day. We covered a total distance of approximately 350 kms over a period of 23 days on the glacier. During the training we enhanced our skills on skiing, navigation, survival in polar conditions and other essential techniques. Our confidence boosted, we returned to India on 29 September 2010 to begin the final preparations for the actual expedition.

READY, GET SET, GO!

In the interim period, between recuperating from the prolonged and exhausting training sessions and taking-off for the real adventure that awaited us, we worked on improvising and making changes on our clothing and equipment in an effort to cut down on load and weight. We were aware that the element of luck could still play tricks. Broken equipment, unusually bad weather, sudden illness and hidden crevasses could all prevent a successful outcome of the expedition. With all these lingering fears on our minds, we began the long-awaited expedition on 01 November 2010 with General V K Singh, the Chief of Army Staff, flagging us off from New Delhi.

We flew to Toronto and Santiago, en route to Punta Arenas, the southernmost city in Chile, from where the final preparations were made under the supervision of guides from the Antarctica Logistics and Expeditions (ALE). ALE charters an IL 76 aircraft for the entire duration of the expedition, which is almost three months.

Activities on the Antarctica continent can only be carried out in their summer months i.e November to February. Due to the strict terms of the Antarctica Treaty, no permanent set up can be created on the continent. Hence, the camp is created temporarily and everything required for organisation, sustenance and conduct of various activities is carried by this IL 76. Everything is similarly required to be brought back including all kinds of wastes including human waste. The chartered flights to Antarctica are also weather dependent. The distance of approximately 5000 km over the Drake Passage is notorious for inconsistent and stormy weather thus causing unpredictable delays in movement of teams and stores. For similar reasons, the weather held us back in Punta Arenas for two frustrating weeks and it began to look as though the expedition might never be launched. And it was only on 24 November 2010 that the weather cleared and we flew to the Union Glacier Base Camp near the Ellesworth Mountain Ranges. This camp is established every year to organize similar expeditions and also climbing expeditions to Mt Vinson, the highest peak in Antarctica.

The stay at the Union Glacier camp was utilized to acclimatize to the cold and recheck each and everything

Skiing Close to Thiels

Elated, Success At Last - The Team at the Geographical South Pole on 15 January 2011.

being carried in the sledges. The days at the base camp were spent in going on long ski trails, reading books on previous expeditions, interacting with other adventurists at the camp and building up enough reserves to withstand the extreme cold and fatigue we were going to face during the expedition.

ONWARDS FROM THE START POINT

From the Base Camp, the smaller ski fitted Twin Otter aircraft are used to ferry teams and stores to the start point of the expedition. The start point is actually the start of the land component of the continent and is ascertained by a GPS reading of the place. On ground, the start point is just a place on a big ice sheet as the sea around the land is perpetually frozen. On 28 November, we flew to the start point called Hercules Inlet at 79 degrees 56' South, from where we were to embark on a 1170 km journey to the South Pole. The Hercules Inlet camp is set up every year to organize similar expeditions and also climbing expeditions to Mt Vinson, the highest peak in Antarctica.

During this expedition, we did not have any administrative support unlike mountaineering expeditions in the Himalayas. Each one of us was pulling a sledge weighing around 100 kgs, which had all food, clothing, tent, communication, fuel, medicines for the planned two months. Averaging a speed of about 2.5 km/hour in the first week, we were able to glide on for five to six hours daily. From the second week onwards, we were able to maintain the momentum and cover distances of upto 30 km per day. Battling the high-speed winds blasting our faces and white-outs, we made stumbling progress at times almost falling asleep while on the move. Fatigue was not the least of our worries because we had other physical elements like the wind chill factor and the risk of hypothermia to nag at us constantly. The sun gave little relief because each time it emerged through the white-outs, we would instantly become hot and begin to sweat. The ozone layer did little to protect us from being sun-grazed. At places, the long tiring stretches of snow, which glaciologists call firn or névé, retarded our progress.

Rare good winds and visibility permitted us to make headway over the next days and by the 25th day, we had reached midway but the final destination was still a long way off. Keeping each other's motivation levels high was not an easy task in such barren and often featureless landscape, where the only human beings we saw were each other. We traded stories and listened to the same music repeatedly. We camped near the so called International Airport near the Thiels Mountain Range where wind-blasts struck our tents all through the night. The entire landscape is devoid of any landmarks and the GPS and compass are the only means of navigation.

It is only at the midway place that one can see some mountains named the Thiels mountain ranges. This place is also used for refuelling of aircraft flying to the South Pole. ALE prepositions a huge cache of aviation turbine fuel here. Since the aircraft land here for refuelling, it has been rechristened as an airport and that too an international one because everyone coming here is an outsider as Antarctica does not have any permanent inhabitants less the penguins of course. ALE had also commissioned an Automatic Weather Station here to get accurate weather inputs crucial for flying operations. It was here and after almost

a month, we were sure to be on track as we could relate to our route with the mountains around. We utilized this opportunity to rest for an additional day. It was quite windy so even to sit together, have meals etc, we dug down and created steps around to get shielded from the winds. By this time, our bodies had adapted to the cold, the rigours and the pains.

THE LAST LAP

Skiing over the sastrugis (uneven ridges created due to wind erosion), gliding over the firns and consuming bland but nutritious food would have been daunting enough but that was not all that we had to worry about. There were still masses of ice debris forming insurmountable barriers and moraines and crevasses awaiting us. Often the temperatures dropped so low and the winds blew so hard, we had no recourse but to retire to the safety of our tents.

To keep ourselves entertained, we listened to music and taught one another English (our team had six jawans, who were not so well versed with English). Although every step had been a battle, none of us had any major health problems apart from various aches and pains. And having endured discomfort and panic from fear of failure, we tried as best as we could to sustain each other's morale and willpower for the remainder of the journey ahead. Two days of recuperation-repair-restitching later, we resumed our journey across the polar wilderness.

The mountain peaks appeared to pass by, infinitely slowly. Often our eyes were but mere slits despite the goggles we were wearing. Our eyelids had swelled and became teary, but come the 49th day we saw what we thought were human settlements far beyond what the eye could see. Our eyes did not deceive, for it was that on the next day after a whole day's long and weary trek, the team reached the Amundsen-Scott American Research Centre at the South Pole. The day was 15 January 2011, which incidentally was also the Army Day.

Elation aside, we were relieved more than anything after having made it to one of the extremities of the earth without any major mishap. We were taken on a guided tour of the Research Station before retiring for the evening. The following day, we flew back to the Union Glacier Base Camp in a chartered DC-3, an old World War II workhorse.

Once again, as if in a repeat act, the weather packed up and our return to Punta Arenas was delayed until 23 January 2011, when we were finally able to fly back to Punta Arenas before returning to India on 29 January 2011.

END NOTE

Today, travel to either of the Poles has been revolutionized. Despite the uncertainties brought in by weather, equipment, illness, terrain and luck, the reality of a journey to the poles is within easy grasp of more and more people. This premier expedition of the Indian Army to the South Pole was successful not just due to our physical and mental conditioning but also because of the meticulous planning and systematic execution. Arming oneself with all the information one can obtain, for undertaking such a journey and training hard with one's team mates goes a long way in gauging the mettle and temperament of the members. Such trips are exorbitantly expensive and difficult to organize and therefore, require a large disposable source of funds and the unstinting support of various organizations, family and friends. The success of this expedition will undoubtedly spur other adventure-enthusiasts into venturing out and exploring more of the earth and its frozen frontiers.

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Colonel Anand Swaroop

INTO ZANSKAR

FROM LAHAUL - FIVE DECADES AGO

Nowadays the Darcha - Padum - Zanskar Trek is an extremely popular trekking route with hundreds of Indian and foreign tourists trudging through the pristine Zanskar River valley every year. In the early 70s, it was a tougher, unknown, desolate yet beautiful sojourn. The Indian Army team which trekked through it in 1971 were indeed pioneers, epitomising the spirit of adventure in our Armed Forces. A first person narrative.

The only cable-ropes suspension bridge over Zanskar River providing connectivity with Kargil, 120 km away.

"The charm of mountain climbing lies not in the climbing, in success, nor in failure, but in the great range of emotions provoked through these physical experiences." - Frank S Smythe.

The essence of the spirit of adventure had been an endemic fabric of the Indian Army's professional calling, for at least the past 150 years of its recorded history. And should proof be needed, let us turn to the MacGregor Memorial Medal (MMM) instituted in 1888 *"…for journeys of exploration in remote areas…in some of the world's most difficult terrain and under extreme hazardous conditions… in the heart of the desert or in the unexplored jungle….they accepted the hardship, loneliness and at time dangers…"*. This criteria is magnificently illustrated through the foundational award of the MMM to Colonel M S Bell, VC (Royal Engineers, The Corps of Bengal Sappers and Miners),

the citation for which reads; *"Journey in 1887 through the Central and Western Provinces of China, from Peking through Shansi, Kansuh and Sin-Kiang to Ladakh and India..."*.

Three years later Captain F E Younghusband (in time a Colonel Sir Francis Younghusband, CIE) was the unanimous choice for MMM who on two month annual leave travelled by ship to Manchuria, thence walked forth to Peking, traversed the Gobi Desert from East to West, ascended the Karakoram Pass from the North and descended into Kashmir! In the process he overstayed leave by two months for which he was censured and denied pay for the period!

And in mid-November 1913 when Captains F M Bailey and H T Moreshead arrived at the Rangiya Railway Station (Assam) they had been on an incredulous *"...fifteen-hundred mile (2414 km) journey on foot through un-surveyed and unknown country in Tibet... The mystery of the Tsangpo Gorges was solved; the country forming the border between Tibet and Assam was mapped..."* This trail blazing of the McMahon Line too had been during their annual leave cum furlough!

And in the post-Independence era, my Young Officer days mentor, Captain S L Tugnait (later Brigadier) had in 1957 walked out from Leh for Darbuk and onward. On his outward journey, he trudged across the places that today are among PLA grabbed strongholds (Lingzithang, Aksai Chin plateau, Hazilangar and so on) and on the return journey, ascended the Karakoram Pass from the North, descended to Daulat Beg Oldi, on to Saser La, Khardung la and back at Leh! The plucky Captain had covered a hitherto unchartered route of some 910 km at mean elevation of 15,700 feet, without any high altitude clothing or specialized food, crossing four among the world's highest mountain passes for about three months! Bravo Tugnait, for the kind of perseverance truly beyond the call of duty!!

Prime Minister Nehru, while addressing a National Cadet Corps gathering in 1952 spoke at length about the French team who had summited Annapurna Peak in Nepal (first among the world's ten above 8000 metres) and in the process Maurice Herzog had lost all toes to frost bite and was lionized by the French nation.

A year later when Hillary and Tenzing summited Everest, Nehru established the Himalayan Mountaineering Institute at Darjeeling to *"…train young men not only to climb Himalayan peaks, but also create in them an urge to climb peaks of human endeavour…. to discover nature's bountiful gifts…. to channel the abundant energy of the youth of the nation into fields of mountaineering.... ignite the spark of a new spirit of challenge & pursuit of adventure in young Indians"* (from Pandit Jawaharlal Nehru's inaugural speech on 04 November, 1954). Major N D Jayal, who had already summited Bandar Punch and Kamet peaks at 19,600 feet and 25,446 feet respectively, was appointed the Founder Principal and Mr Tenzing, the Director Field Training.

I was among the earliest graduates of the Basic and Advance Courses under Mr Tenzing's tutelage and climbing and trekking became compulsive obsessions thereafter, perfectly complementing my hobbies connected with tramping and camping in the wilderness, reading and photography. In 1970, the Principal of St Stephen College, Delhi (my Alma Mater) invited me to lead their team in exploring the ten km long Bara Shigri glacier on the Kullu-Lahaul Valley watershed. My commanding officer promptly granted me a month long leave and I met up with the ten mustard keen tramps at Manali who merrily accepted my wife and me as friends. We were thrilled when Ashwani Seth and Peanuts (Bhargava) summited the 21,499 feet Kullu Pumori peak at the head of the Glacier! While the

Plucking herbs & edible roots merely for a meal.

The author and Mrs Baljit Singh atop Pensi La (15, 700 feet), the gateway from Zanskar to Kargil. Dorung Durung Glacier is in the background.

Stephenians dismantled camps to retrieve equipment, my wife and I climbed a lesser challenging peak overlooking the snout of Bara Shigri.

Ashwani's account of the ascent, the first ever in the history of St Stephen College was carried prominently by the Sunday Statesman. Lieutenant General K P Candeth, Padma Bhushan, PVSM chanced to read the article and I was directed to initiate ten young officers (two to four years service band) to the spirit of adventure in an area of my choosing but within the then Western Command jurisdiction (Barmer to Demchok!). The General was gracious to permit my wife as a co-partner of the venture!

There were several options which flooded my mind but what metamorphosed was a combination of tackling a modest peak, nature-watch at large and trekking extensively through a least traversed segment of the Himalayas. I settled for the Zanskar Valley which lies wedged between the Himalayas to its West and the Karakorams on the East and had on offer as it were a 390 km long trek along its East-West axis, through the heart of Zanskar. Shortly, this would acquire the sobriquet of "Trekkers Delight" both with the global and the Indian trekkers' fraternity!

We assembled at Manali for two weeks familiarization to rudimentary techniques in rock and ice craft, in and around Beas-Kund, a huge amphitheatre of 13,000 feet elevation girdled on its three sides with snow and rock peaks topped by Hanuman Tibba at nearly 22,000 feet. I chose Ladakhi peak, a modest rock pillar at 16,800 feet which required pitching of two intermediate camps, build up logistics dumps, get up a vertical, fifty foot narrow rock chimney with tricky hand-holds, traverse a long knife sharp ridge covered under snow/ice to ultimately attempt the summit, per se.

The staging camps were sited with the idea that in two days of comfortable climbing, our team would pause at spots which provided spectacular vistas of the Himalayas, savour the fun and excitement of climbing and watch the magic of sun sets and sun rises as also the enchantment of snowy peaks glittering softly under star and moon light.

My wife and I along with Passang, a Sherpa serving with the Indo Tibetan Border Police carried out a "dry run", reached the Ladakhi summit by about 1130 hours but gave up the more ambitious desire to also summit the close by Manali peak because the connecting ridge was covered in knee deep snow, with danger of triggering an avalanche. Over the next four days, the ten young officers and our Army Medical Corps Doctor not just stood atop Ladakhi but frantically waved and yodelled to announce their triumph as we watched with binoculars from Beas Kund! The summit provided them a grandstand, 360 degrees visual feast of countless peaks and in the process enslaved my "wards" to the spirit of adventure!

We spent two more days lounging at Beas Kund when my wife and I introduced them to a variety of Alpine flowers; Asters, Primulas, Gentians, Marsh Marigold, Cobra Lily Fern complete with spots as beady eyes, fully extended hood and its deadly tongue frozen in the stretched out mode! And several species of birds; Red Billed Chough, Blue Whistling Thrush, Snow Cock, Chakor, Himalayan Blue Magpie, etc which fired our novitiates with eager anticipation of the next phase.

We crowded in two trucks courtesy the Border Roads Organisation, descended to the Lahaul Valley over the Rohtang Pass and

drove a hundred odd km to Patseo, our launch pad about 20 km short of Baralacha La (16,400 feet). The Thakur Sahib of Patseo was the uncle of two MVC awardees who had earned their well-deserved fame as "Saviours of Leh" (Captains Prithi Chand and Kushal Singh of 2 DOGRA) back in 1948. Thakur Sahib helped us to hire forty ponies for carrying our logistics sustenance (Wheat flour, rice, lentils, tea leaf, powder milk, sugar, spices and kerosene fuel) as dehydrated and pre-cooked packaged meals were not heard of in those days. A sweet mug of tea and a fat chapatti for breakfast, two fat chapattis with spiced potatoes for lunch and Khichri for dinner were our staple menu for the next twenty eight days!

The ponies arrived and we set out for Kargil, the ultimate destination! A few miles ahead of Patseo, we turned West up the Darcha stream leading to the base of the 19,300 feet Shinkun La, the Eastern Gateway to Zanskar, by the third evening. The right flank of the Pass is dominated by a sharp rocky pinnacle (about 21,000 feet) which was our second chosen summit. Regrettably, we had under estimated the steep ascent involved and a km long ridge covered in verglass. There was no option but to strap on crampons which slowed the pace and by mid-day we had reached a dome the size of a soccer field. The sun had rendered the snow deposit over the last about five hundred feet unsafe to tackle and we learnt to accept defeat, gracefully.

It was my turn to lead the next day's trek, so my wife and I made an early start lest the snow on the far side of the Pass became unstable. We halted at the Pass for our first leisurely vision of Zanskar but were surprised to spot five figures climbing steadily towards us; four men and one lady. They were "Fringes" who from their speech betrayed their French nationality! The French hate to speak in English and to my enquiry about their Inner Line Permits they pretended not to have understood me and headed towards Patseo! Anyway, their foot marks showed us a safe descent route to Zanskar which was unlike any other landscape any of us had known; utterly barren, zero precipitation, no human presence except in isolated hamlets of six to ten huts until Teestha village, on the tenth day. Here we halted for a day because the younger brother of Norbu (the owner of our ponies) was married to the daughter of the Raja who entertained us over butter-tea and delicious *"Pakoras"* made from a mash of local herbs and roots. He also provided us a guide who led us over easier gradients and en route showed us extensive rock-faces, each of different hues which were the sources for extraction of semi-precious stones, used in ornaments both by the locals and the world beyond.

The constricted valley began to open up by the eighteenth day as we neared Padum, the first and only oasis of passable greenery (few clusters of stunted willows and ample fields of barley and Chickpeas), sensing which the ponies who had been on starvation diet suddenly picked up speed! Padum inhabitants were extremely friendly and our doctor went the extra mile by treating over two hundred persons till he had drained the last item in his medical chest. As a token of gratitude, they ushered us to their modest dwellings and later in the afternoon the entire population congregated near our tents and entertained us to a matinee, song and dance performance by men, women and children in their best traditional garments and ornaments. As the tempo of dancing picked up, one inebriated monk took the centre stage to give the most spirited,

Left Photo. A monk at Burdan Gompha proudly reciting prayers from a century old, hand written scripture! Right Photo. A charming mother & child of Padum Village.

Left. Map of the Darcha - Padum - Kargil Trek.
Right. The barren, narrow & trackless Kurghiak Chu Valley of Zanskar.

flamenco like dance to the applause of his kinsmen!

The walk from Padum to Pensi La (about 15,700 feet) was a pleasant, gentle ascent but for the crossing of the most turbulent tributary of the Zanskar River, which was spanned by the one and only steel-rope suspension bridge for exiting the Valley to reach Kargil. Only one lightly laden person at a time could make a safe crossing and the ponies, of course had to be coaxed to swim across; much to our sorrow, two animals went down and under. Pensi La is the gentlest of all Himalayan passes but it also commands a ring-side panoramic view over a considerable length of the Dorung Durung Glacier. An even more imposing visual followed two days later as we walked in the shadow of the Nun and Kun Peaks (both over 22,000 feet) and filled our lungs with the icy breeze coming from the awesome, hanging glacier fed by these twin "Sisters".

So impressed was a young paratrooper that in the following decade he would successfully attempt both peaks and later guide cadets from the Indian Military Academy, Dehra Dun to Kamet and Abi Gamin summits. He was on track for a brilliant career in the Army (graduate on Command and General Staff Course, Fort Leavenworth, USA) but on account of personal life compulsions, opted out prematurely.

On the twenty eighth day, I almost faced a mutiny when an Army truck was spotted approaching us from Kargil because no one wanted to return to barracks!! The month long trek and climbing came to an end at Kargil, and we returned to our units – as war clouds started gathering due to the violent uprising in East Pakistan.

Sadly, one of our team would perish a few months later on the battlefield during the 1971 Indo-Pak War. I had the proud privilege to be in the company of the youngest of the team and witness his lion-hearted performance on the Chhamb battlefield, as we extricated our guns from the West of Munawar Tawi under intense shelling, sniping and machine gun fire, and mere minutes before the only bridge over the rivulet was demolished.

"I want to sit by a camp-fire in the evening and listen while the breeze dies down into a profound quietude." - Frank S Smythe.

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Lt Gen Baljit Singh, AVSM, VSM (Retd) was commissioned into the Regiment of Artillery in 1956. He superannuated from service in 1992 after a distinguished career spanning 36 years. He was invited to the Board of Trustees of World Wildlife India in 1990 and served two terms therein.

Lt Gen Baljit Singh

Crevasse in the Khumbu Icefall area.

ATOP EVEREST

IN MAY 2001

Mt Everest, the highest peak is undoubtedly a professional mountaineer's dream and passion. The Indian Army personnel have been involved in several expeditions to Everest, some attempts succeeded, several failed. This is the story of the Indian Army's successful Everest Expedition of May 2001, led by Colonel Krishan Kumar, 8 MADRAS (later Brigadier).

NEPAL - A LAND OF MOUNTAINS

Draped along the greatest heights of the Himalayas, Nepal is a land of eternal fascination, a land of ancient history, colourful cultures and people, enticing scenery and some of the best vistas on earth. Behind the time-worn temples and palaces of Kathmandu valley, above and beyond the hills that ring the valley, another 'kingdom' rises sky word. The 'abode of snows', which is what Himalayas means in Sanskrit, is a magnet to mountaineers from all over the world with eight peaks over eight thousand metres, including the highest of them all, the mighty Mount Everest (8848 metres). Known to the Tibetans as Chomolungma and to the Nepalese as Sagarmatha, the world's highest peak has been an over powering attraction.

During the 1950s and 60s most of the important Nepali peaks were scaled. But this has certainly not diminished the attraction of Himalayan mountaineering. Climbing these giants today is often an adventurous sporting activity, whereas 40 years ago it required huge and well-sponsored expeditions. Attempts to scale Mt Everest started in the 1920s and in 1925, Mallory and Irvin had disappeared within sight of the summit. The discovery of the body of British climber Mallory frozen near the summit, added a new chapter in one of the enduring mysteries of mountaineering history. However, Mallory did leave behind his famous explanation of mountaineering - he

A Tough Route through the glacier.

said he was climbing Everest because 'it's there'. Further expeditions followed through 1920s and 30s but no real progress was made. The conquest of Everest finally took place in 1953 when the British team led by Sir John Hunt put two climbers - Tenzing Sherpa and Edmund Hillary, on top of the world's highest peak.

INDIA'S TRYST WITH EVEREST

The first pure Indian attempt on Everest was made in 1960. The team was led by Brigadier Gyan Singh. The team managed to reach the height of 28,300 feet before being defeated by bad weather. The second attempt was made in 1962 under the leadership of Major John Dias. This time the team reached 28,700 feet and was again defeated by persistent bad weather. The third Indian expedition was attempted in 1965. This was led by Lieutenant Commander MS Kohli. This time they were successful and managed to put nine climbers on top within eight days. More attempts were made subsequently by teams mainly from Indo Tibetan Border Police and some clubs in 1984, 1987, 1993 (all women's team), 1997 and 1999 (Kangshung Face). Though these were not purely Army expeditions, majority of the members in these expeditions were from the Army. The first pure Army Expedition was launched in 1985. The expedition turned out to be a failure due to unprecedented bad weather resulting in the death of five officers. The expedition was called off prematurely due to the tragic events.

In the late 90s, Army Adventure Wing was tasked to again realise the dream of summiting Everest. In pursuit of the undying spirit for mountain adventure, the Indian Army launched a pre-monsoon expedition to Everest in 2001 to pay homage to those five climbers of Indian Army Everest Expedition - 1985, who lost their lives while attempting the mighty mountain. The expedition was successful and the 1965 Indian record of nine climbers on the summit was broken in 2001 when 10 climbers of the Indian Army Everest Expedition scaled Everest on 23/24 May 2001. Besides 10 team members, seven Sherpas also made it to the top - an impressive record of 17 atop from one team. Wonder how many more years before this record is broken.

This expedition was led by the winner of the National Adventure Award - 1999, Colonel (now Brigadier) Krishan Kumar, AVSM, an outstanding mountaineer. He has led several mountaineering expeditions including one in Alaska (USA) and has operated for a considerable period in Siachen Glacier. The other members of the expedition also had enviable records of mountaineering feats. Most of them had served in Siachen and Kargil, besides participating in several national and multinational mountaineering expeditions.

THE SELECTION CAMP

193 army personnel volunteered for the expedition, out of which 60 were short listed for the pre Everest expedition cum selection camp, in the Garhwal Himalayas. During this camp, an expedition to the technically difficult Mana peak (23,610 feet) was organized. After the training, 24 climbers were selected. The team was then sent to mountain ranges beyond Manali for some intensive winter training in January 2001, where Everest like extreme cold conditions and high speed winds prevailed. This enabled the members to gain first-hand experience of

the newly imported equipment and forge into a well-knit team besides physical toning up and stamina building. The systematic and scientific approach to training paid rich dividends during the actual expedition.

THE EXPEDITION STARTS OFF

The expedition was flagged off on 02 March 01 by General S Padmanabhan, PVSM, AVSM, VSM, ADC, the Chief of Army Staff from Delhi. The team travelled to Nepal by road till the road head, which was at Jiri, located about 180 kms Northeast of Kathmandu. The climb to Everest starts with a 14 days gradual trek from Jiri to Everest base camp. Initially the members felt extremely tired for the next day's routine trek, but as the days passed the walk became pleasant. One day blended into another and another, walking steadily across the grain of the countryside, over high ridges and down into the valleys. After Jiri, the main township along the trek is Lukla, where an airstrip caters for all the needs of the trekkers and the locals. Many foreigners, who come to climb Everest, come from Kathmandu to Lukla by air. They spend some days of acclimatization before proceeding onwards to Namche Bazaar, lest they develop medical problems due to high altitude.

Namche is a bustling large village, the capital of the land of Sherpas, where last minute shopping is generally done by all trekkers and climbers. Enterprising Sherpas own most of the lodges here. Sherpas migrated here from East Tibet centuries back and their adaptability to the tough terrain and their feats in the field of mountaineering have made them well known the world over. The last inhabited village before the Everest Base Camp is Pheriche. It has a medical facility set up by the Hillary Foundation, and run by volunteer doctors from different parts of the world. The world famous Thyangboche monastery is located midway between Namche Bazaar and Pheriche.

EVEREST BASE CAMP

At the Everest Base Camp (17,700 feet), one is struck by the sight of prayer flags fluttering across the ice-mud-rock moraines. The tents are pitched in an untidy manner around the rocks and boulders. The sight of base camp gives an impression of a small township. That spring, there were 12 teams attempting Everest and six teams were exclusively attempting Lhotse, which at 8,578 metres is the fourth highest peak in the world. Imagine 18 teams camped hugging each other. It indeed looked like an international destination with a variety of skin colours and several languages spoken at the same time. It was indeed a wonderful experience interacting with the best mountaineers of the world. Before the start of the climbing season, sometime in the month of March, there is a mad rush of teams to get the best place on the moraines at the base camp. We had also sent an advance party but Sherpas from other teams had already arrived and laid claim on the best patches depending on the availability of potable water near the respective camps. Our team managed to find a site quite close to the start of the Khumbu Icefall. The Indian camp was the biggest with six big tents and a proper cook house made of rock walls and a tarpaulin top.

To reduce the chances of accidents and also to reduce the environmental pollution, the Nepal Government has approved an adhoc organisation called Sagarmatha Pollution Control Committee (SPCC), which opens and maintains the route through Khumbu Glacier during the climbing season. Also they regulate and clean the camp locations of human and food waste. Of course, climbers have to

On Top Of the World - On the Summit of Mt Everest on 23 May 2001.

Tents of the Indian Team at Everest Base Camp.

pay a hefty fee for the efforts.

TO THE SUMMIT

The route to Camp-I goes through the frightening Khumbu Icefall, where one feels dwarfed. The whole twisted and broken melee was in constant motion, creaking and wailing like a tortured beast.

Most of the deaths on Everest have taken place here due to deep crevasses and the hanging seracs. Each climber attempting Everest has to cross this at least six to eight times. About 60 ladders are used to open the route through Khumbu and they often have to be replaced as they keep falling into crevasses or they get twisted due to heavy seracs falling on them.

Camp I (19,500 feet) is situated on top of the Icefall, from where it begins to flatten. It takes at least four hours to reach the Camp I and one is never sure of getting back in one piece. Our team crossed Khumbu eight times during the expedition but we were extremely lucky to have come back without any casualty. Camp I was like a small township with at least 40 odd colourful tents of various teams strewn all over. We had taken a much bigger Army Arctic tent up there and being white it was a stark contrast amongst the more brightly coloured ones.

Camp II (20,500 feet) is a three hours climb from Camp I at a gradual gradient. It is from here that the real expedition is planned and controlled. There is a long crevasse enroute, which keeps widening as we head into May and June. The whole route is over the glacier and snow and the fear of lurking crevasses here is only second to the Khumbu Icefall.

Camp III (23,500 feet) is along the slope leading to Yellow band, from where one goes to the summit camp of Everest or to the Lhotse summit camp. The location of Camp III is scary - any mistake and the person kicks the bucket. There is no place here to pitch a tent as the slope is quite steep. The team has to dig into the ice to make a temporary base just to spend the night. Unarguably, the worst camp to stay. Our team had a near miss here, when they got caught in a miserable blizzard on their way up to Camp III during one of the load ferries. An ugly reminder of the moods of Everest.

Above the realm of endless snow, is the location of the last camp to summit - South Col. Here each step appears increasingly impossible. Disorientation and fatigue make the climber's head swim and the body threatens to collapse. No wonder the region above 26,000 feet is known as 'Death Zone'. It is heartening to note that our Army mountaineers not only cracked this 'Death Zone' but also did it in style. Our team reached the South Col on 22 May. The same night the first summit party left for attempting the summit. On Everest, one has to start at late night to reach the summit by morning and then start back in time to reach South Col by mid-day. This practice has been adopted after the sacrifice of many climbers, who thought otherwise. The weather at those heights is so unpredictable that making a firm plan is purely theoretical in nature. What matters is endurance and the feel of the mountain. Our first summit party of nine climbers started from South Col on 22/23 night. They continued to trudge on till the fittest of the lot reached the top of the world at 0755 hours on 23 May 01.

It was a golden day in the history of the Indian Army mountaineers who had been dreaming of this day for years. The complete party reached back safely at South Col by late afternoon. As if this was not

enough, the second summit party of eight left for the summit on the night on 23/24 May 01 and they too were successful in reaching the top. This was a memorable day for all Indians as our team had broken the record of maximum Indians atop Everest in one expedition. The previous record of 1965 was nine atop Everest in eight days. We made it ten atop Everest in just two days. Incidentally, for Naib Subedar Amar Prakash it was his second successful climb of Everest. He had earlier climbed Everest in 1999 from the Kangshung Face in Tibet.

THE SUPPORT

The grand success of the expedition was due to the hard work of many people and different agencies within and outside the Army in India as well as in Nepal. The Ministry of Human Resource Development and the corporate sector helped financially. Various departments of the Government of Nepal and Nepal Army extended help and co-operation to our Army Everest team. Dr. LS Rathore and his team of officers from the National Centre for Medium Range Weather Forecasting (NCMRWF), worked round the clock to keep the expedition updated on the weather window. It is worth mentioning that the weather forecast of NCMRWF was found more reliable than that of the Americans, British and other countries who initially took weather reports from their respective agencies but during the later stages were solely dependent on Indian forecasts. The Army Everest team apart from showing exemplary physical fitness on the mountain, was never found wanting in times of help and need. There were occasions when our members brought down other team casualties from higher camps. The doctor treated and managed three patients of other expeditions. By their timely evacuation they could be saved. Our climbers helped in recovering the body of Babu Tshering Sherpa, the legendary mountaineer of Nepal who had unfortunately fallen into a crevasse near Camp II and died. The success is all the more laudable as there was no injury of any kind. In the same period, three persons of various other expeditions lost their lives on the mountain.

CONCLUSION

Everest has always been and will remain the ultimate challenge for all mountaineers because of its vastness and immensity. Everest is intimidating. It is enticingly benign and also ruthlessly cruel. It demands Himalayan courage and strength more than mountaineering skill. Its armaments are colossal, its problems unique in their mammoth proportions. It is the ultimate test of human endurance as well as physical effort, to the limits of the known and unknown.

Everest has the right ring to strike fear into the heart of any climber, no matter how many people have trudged to its summit. The only predictable feature of Everest is its unpredictability. Everest is not just a sport. It is an adventure with a big capital risk associated with it. Therefore, good organisation, strict discipline of thought and good decision making are essentially required, if the team must achieve its mission to succeed. Brigadier Krishan Kumar, our Team Leader was an exceptionally calm and effective leader, whose guidance throughout the expedition was stupendous.

Over 6000 mountaineers including 507 from India have successfully summited Everest since 1953. However, Mount Everest is not everyone's cup of tea. Even though so many people have reached the summit, it is easy to forget what a monumental challenge the entire operation is. Besides the vagaries and unpredictability of the weather, the dangers through the Khumbu Ice fall and the chances of the Sagarmatha allowing a safe passage across it, still remains the same. They haven't changed by any measure, since the first ascent on Everest.

Today, mountaineering is a sport pure and simple. Of course it's also a decidedly dangerous sport: over 6000 climbers have reached the top of Everest and about 300 climbers have died in the attempt. Everest, undoubtedly even today remains the ultimate dream of every mountaineer.

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Col Anand Swaroop

*Colonel Anand Swaroop, SM** (Retd) was commissioned in the Corps of Engineers in March 1989. An alumnus of Defence Services Staff College, Wellington (TN), he commanded his parent unit in Eastern Command. He has been an adventure enthusiast, having participated/ led many mountaineering expeditions. He was a member of the Indian Army Everest Expedition May 2001. He led the first Indian Ski expeditions to the South Pole and the North Pole. A recipient of the Tenzing Norgay National Adventure Award (Arjuna Award), he superannuated in June 21.*

MOUNTAINEERING INSTITUTES OF INDIA

India has been blessed with the mighty Himalayas on its Northern borders, with a plethora of the highest peaks in the world. No person can become a complete mountaineer without summiting a major peak in the Himalayas. Several mountaineering institutes have been set up by the Central and some State Governments to train budding youngsters in mountaineering skills. Many renowned mountaineers have learnt the ropes, and about knots, pitons, carabineers and ice axes in these institutions. The Indian Army also established the High Altitude Warfare School (HAWS) to train troops for operations in the mighty Himalayas, and HAWS too has nurtured many mountaineers and other adventure activities. An overview of HAWS and some of these institutes follows.

Machoi Glacier Ice Craft Training Area

HAWS

HAWS was raised as 19 Infantry Division Ski School on 11 December 1948 by General KS Thimayya, DSO erstwhile General Officer Commanding, 19 Infantry Division. Lieutenant Colonel Gyan Singh, then Commanding Officer of 11 Field Regiment was appointed as the first Officiating Commandant. The School rapidly established itself, gaining popularity and fame in Skiing and Winter Warfare training. In the winter of 1949-50, the school was upgraded as a command establishment and designated as Winter Warfare School. Post 1962 Sino-India war, the school was upgraded to a Category 'A' training establishment and designated as High Altitude Warfare School (HAWS). It is one of the oldest training institutions of the Indian Army.

Training. Ever since its raising, HAWS has been imparting training on all tactical, technical and administrative aspects of High Altitude Warfare to include Military Rock, Ice, Snow Craft skills and Military Winter Combat Operating Skills including Military Skiing to trainees to undertake military operations. Troops from the Indian Army, Sister Services, Central Armed Police Forces (CAPF) and Friendly Foreign Countries are trained in Mountain and Winter Warfare to undertake operations in Mountainous and High Altitude Area. These troops by virtue of this specialised training act as Force Multipliers during various operations.

Rescue Operations. Being deployed in Super High Altitude and snow bound areas, the troops of the Indian Army are constantly under threat of various hazards with avalanches being the most common albeit the most dangerous of all. Over the years, HAWS has constantly trained the troops in identification of avalanche prone areas and has contributed enormously in mitigating this threat to a great extent. The establishment also keeps rescue teams on standby all year round to launch time critical rescue operations. Thus, HAWS has played a significant role in Humanitarian Assistance and Disaster Relief (HADR) especially in disasters specific to high

altitude and mountainous terrain like avalanche and landslides. HAWS has conducted some of the most daunting rescue operations in the past years including rescue at Mt Shivling, Mt Trishul and Draupadi ka Danda II. The professional expertise and technical acumen of mountain warriors has been on display time and again during these search and rescue operations.

Mountaineering. HAWS has been the cradle of Military Mountaineers and boasts of a rich mountaineering history. The school has routinely undertaken various mountaineering expeditions and has also acted as a mother institution for all other mountaineering institutions in India by providing trained instructors for these institutes. As an adventure activity, mountaineering instils a sense of deep respect towards nature in an individual and also helps in building strength of character and perseverance, qualities that are imperative to be inculcated in every military leader. From the first ever summit of Mt Kanchenjunga from the Northeastern approach to the most recent double summit of Mt Kamet and Mt Abi Gamin, HAWS has been at the forefront of all mountaineering expeditions conducted by the Indian Army.

Winter Games. HAWS is also the nodal agency for training and fielding teams for all Winter Sports events of the Indian Army and therefore is the home of the Army Winter Games Node (AWGN). In recent years, Winter Sports have seen an exponential increase in terms of public interest and participation in the country. Indian Army athletes of AWGN have excelled at the national level and have represented the country in various International events including the Winter Olympics. Havildar Nadeem Iqbal (now Subedar) has represented the country in Winter Olympics held at Sochi in February 2014 and Havildar Jagdish Singh represented the country in the Winter Olympics held at South Korea in February 2018.

Military Diplomacy. HAWS has also supported our international defence cooperation by providing Mobile Training Teams, participating in Joint Training Exercises and Elbrus Ring Competition. Students of Friendly Foreign Countries such as Nepal, Bhutan, Afghanistan, Kyrgyzstan, Kazakhstan, Uzbekistan, Russia & US have attended our Mountain & Winter Warfare Courses.

Training & Administrative Infrastructure. HAWS has world class training & administrative infrastructure, which makes it one of the premier military mountain warfare institute. The training infrastructure available provides adequate resources for conduct of Military Rock, Ice and Snow Craft training under challenging conditions. The degree of difficulty in the training area and latest equipment makes the courses conducted at HAWS as most sought courses. The administrative infrastructure provides comfortable living conditions in challenging terrain and adverse weather conditions.

The School trains more than 1400 personnel annually and some of its alumni have excelled in operations, mountaineering and winter games. The School today stands as the most decorated training establishment of Indian Army. It has the proud distinction of being awarded three General Officer Commanding-in-Chief Unit appreciations.

The importance of safeguarding India's mountainous Northern frontiers poses a challenge to operate in the highest battlefields of the world. For the past 75 years, HAWS has served as an institution that imparts high standards of training, and regularly brings prestige and laurels to the Indian Army and the entire country as a whole.

Gulmarg Ski Slopes

Left Photo. Major General R K Singh, Commandant HAWS. Right Photo. HAWS Main Building.

Q AND A WITH MAJOR GENERAL RAJIV KUMAR SINGH, VSM, COMMANDANT, HAWS

Major General Rajiv Kumar Singh, Vishist Seva Medal, an alumnus of National Defence Academy, Pune and Indian Military Academy, Dehradun, was commissioned into 10th Battalion the SIKH Regiment in December 1986. In his illustrious career spanning over 36 years, the General officer has commanded a Rashtriya Rifles Battalion and an Infantry Brigade in Counter Insurgency and Line of Control environment in the Kashmir Valley. Professionally competent, he has attended the Defence Services Staff College Course at Wellington (TN) and the Higher Defence Management Course at College of Defence Management, Secunderabad. He has been an instructor at Infantry School, Mhow and at the Defence Services Staff College, Wellington. He has also tenanted the important appointment of Director (Counter Terrorism) at Defence Intelligence Agency, HQ Integrated Defence Staff, New Delhi.

HAWS is renowned the world over as a premier training establishment for High Altitude Training, rock craft and skiing training and glacier operations. Can you throw some light on how HAWS evolved in its initial years to become the bedrock of mountain warfare training of our Army?

The genesis of HAWS lies in the 19 Infantry Division Ski School that was established in December 1948 by General KS Thimayya, the then General Officer Commanding, 19 Infantry Division. He demonstrated immense vision and foresight in recognizing the need for such an establishment. Subsequent events and the manner in which our borders evolved amply validated this decision. The ever increasing commitments of the Indian Army in high altitude, snow bound and glaciated areas made upgradation of capacity a necessity. Consequently, the 19 Infantry Division Ski School became the Western Command Winter Warfare School in 1949 and was further upgraded to a Category A training establishment in 1962 when it assumed its current name. Over the years, HAWS has evolved into one of the finest training establishments across the world, training the Indian Army, CAPF and personnel from friendly foreign countries in high altitude warfare.

HAWS has also been in the forefront of mountaineering in our country and has nurtured many renowned mountaineers from the Army. Can you name some such stalwarts in the field of mountaineering who learnt their skills at HAWS and highlight their major achievements?

Mountaineering in India has been synonymous with HAWS. Some of the finest mountaineers have passed through its portals and have been instrumental in pioneering and promoting mountaineering in India. No list can do justice to the contribution of HAWS. To name a few of our most eminent mountaineers –

Major Narendra Dhar (Nandu) Jayal is credited with pioneering early post-independence mountaineering. He was the first Principal of Himalayan Mountaineering Institute, Darjeeling and has been called the 'Marco Polo of Indian Mountaineering.'

Major John Dias led the second Indian Expedition to Mt Everest in 1962. While the expedition did not succeed, it was a step in the right direction towards the first successful summit by an Indian in 1965.

Colonel Avtar Singh Cheema, the first Indian to scale Mt Everest.

Colonel Narendra (Bull) Kumar led the first successful Indian Expedition to Mt Kanchenjunga from the North-Eastern face in 1977 and was also the first to carry out reconnaissance of the Siachen Glacier.

Colonel Prem Chand, the first Indian to summit Mt Kanchenjunga.

Brigadier Krishan Kumar led the Indian Army Expedition to Mt Everest in 2001 and was also the Deputy Leader of the first Ski Expedition from Karakoram to Lipulekh in 1995.

Brigadier Ashok Abbey led the 2003 successful expedition to Mt Everest.

Major General Chandan Nugyal and **Major A K Singh** have been awarded the McGregor Medal.

Brigadier Gyan Singh, Colonel Surat Singh, Colonel DN Tankha, Major HPS Ahluwalia, Major KI Kumar, Brigadier SS Shekhawat, Colonel RS Jamwal, Colonel SC Sharma were/are all eminent mountaineers. The list is very long indeed.

Brigadier Bhupesh Hada, Lieutenant Colonel Zahid Mirza Baig and **Subedar Major Jagat Singh,** the current Chief Instructor, Senior Instructor and Training Subedar Major respectively are all Everesters. In fact, Subedar Major Jagat Singh has summited Mt Everest thrice and was awarded the Tenzing Norgay National Adventure Award in 2014.

For us at HAWS, mountaineering is not an adventure activity, it is our profession and passion. What people undertake as adventure is daily routine for us. The Nun (7135 metres) & Kun (7077 metres) peaks are like our backyard. We climb it regularly as part of training activity without it even getting recorded or published anywhere.

Many Mountaineering Expeditions have been organized and led by teams from HAWS. Do recount the major expeditions conducted by HAWS in the last few years?

Mountaineering expeditions in the Army are planned and undertaken under the aegis of Army Adventure Wing. HAWS is a training establishment that trains Indian Army personnel in High Altitude Warfare. However, since mountaineering is an integral part of our training, personnel trained at HAWS have de facto become the mainstay of all mountaineering adventure activity undertaken by the Army. Let me put it this way – 80-90% of personnel who form part of any Indian Army mountaineering expedition have undergone training at HAWS. Last year we were directly involved in conduct of the Armex-21 Ski Expedition from Karakoram Pass in Ladakh to Lipulekh in Uttarakhand covering 1700 kms in 100 days.

Skiing training has also been the forte of HAWS and the school has trained national skiing champions. What difficulties have you faced in improving the facilities for skiing training, the ski equipment and in promoting winter sports?

Army athletes training at the Army Winter Games Node under HAWS have consistently excelled at the national level. However, our efforts to succeed at the international level has been fraught with innumerable hurdles. India lacks proper winter games infrastructure. Development of winter games requires elaborate infrastructure to include FIS approved slopes equipped with ski lifts, facilities for creating artificial snow, special firing range for biathlon, etc. Also, India does not host any FIS event that could help our athletes garner FIS rating points for qualification for Olympics or World Championships. In the absence of infrastructure or FIS events, the only way ahead is to train and participate extensively in Europe which is a very expensive proposition. Ski & Snowboard India, the Federation controlling winter games in India provides no support to our athletes. Paucity of funds for such training and participation is a major concern. The Ministry of Sports needs to step in for creation of world class winter games infrastructure and infusion of funds if we are to make a mark at the international level.

After the Biathlon Championship on the Ski slopes of Gulmarg.

Training troops for crevasse rescue, and crossing crevasses.

Once operations commenced in Siachen Glacier, HAWS played a vital role in preparing our troops for Glacier operations, with Siachen Battle School being supported at Siachen Base Camp by your institution. What peculiarities of Siachen survival do you highlight to students who attend courses at HAWS?

The entire gamut of skills required to fight and survive in high altitude glaciated terrain is taught to personnel who undergo training at HAWS. We focus on both technical and mental preparation of the soldier to face the odds that the conditions in Siachen present. Technique wise, ice craft assumes particular importance. This includes traversing of glaciated terrain, negotiation of ice walls and crevasses, extraction of casualties from crevasses and avalanche rescue. Endurance, resilience and mental toughness are unquantifiable entities that are very essential to survival in the Siachen Glacier. The soldiers are put through the grind to imbibe these qualities that will stand them in good stead when faced with most difficult circumstances. And of course, you have the weather, the most formidable opponent. Cold injuries, their causes and prevention, casualty management and evacuation, combating isolation and psychological effects of extreme weather, preparation of shelters, etc are all taught to equip the soldier comprehensively for any eventuality. Personnel trained at HAWS become true leaders in their own right, capable of leading their sub units into battle and surprising the enemy with their skill and audacity.

Avalanches are a major hazard for our troops deployed in snow bound areas and HAWS has been maintaining and training avalanche rescue teams for years. What equipment and training improvements have taken place in the field of avalanche rescue? Has the response system improved after avalanche casualties?

Avalanches are one of the most dangerous hazards encountered in high altitude and snow bound areas. The best way obviously is to avoid getting into one. Understanding of the dynamics of avalanche helps troops avoid areas/time that are susceptible to avalanche. In the event of troops coming under an avalanche, lives can only be saved by troops at the incident site reacting with alacrity and professionalism. Towards this end, HAWS undertakes extensive sensitization and training of units of Northern Command prior to onset of winters. Our efforts have contributed in a very major way in prevention of avalanche casualties. Technology is a force multiplier that helps in prediction of avalanches, enhancing safety and in the worst case scenario in search and rescue operations. Some of the technological developments that have been of great help in reducing avalanche casualties are as follows:-

Avalanche Prediction. Avalanche prediction technology has seen significant advances in recent times. The Defence Geoinformatics Research Establishment (DGRE) uses a large number of satellites and also sensors deployed in the vulnerable areas for meteorological data and avalanche prediction which is being communicated to troops on ground in real time.

Avalanche Air Bag System (ABS). Mechanically activated airbags that help a mountaineer stuck in an avalanche to stay afloat and avoid getting buried in the snow. The latest version of this bag comes with Bluetooth enabled activation that enables the bag to be deployed by another person even if the person wearing it is not able to pull the activation handle.

Recco R9 Radar. A hand-held radar system that is capable of detecting Recco Reflectors and any electronic devices embedded with Diode on casualties buried under snow. Highly effective and easily portable, this equipment is a must have while undertaking any search and rescue operations in mountains.

Power Ascender. The mechanical ability to pull loads up and down vertical cliffs is a game changer when it comes to rescue operations as it saves time and effort of the rescue party, two things that need to be conserved during rescue operations. The portable design as well as the ability to operate in sub-zero temperatures makes it an ideal component of the rescue equipment profile.

Which training courses are being conducted at HAWS and can you give us an insight into the major training content on these courses?

HAWS primarily conducts two major series of courses namely Mountain Warfare (MW) and Winter Warfare (WW). Mountain Warfare (Basic & Advance) series of courses are conducted at Sonamarg twice every year. Rock-craft and Ice-craft comprise a major part of the contents of these courses. Survival and prolonged operations in Super High Altitude Areas and conduct of Mountaineering Expeditions is also covered in these courses. Winter Warfare (Basic & Advance) series of courses are conducted at Gulmarg once every year. Snow-craft constitutes a major part of the contents of these courses to include negotiation of snowbound terrain through use of military skiing, conduct of long range patrols and survival in snowbound areas. Endurance training, avalanche rescue, casualty management and evacuation are common to both the courses. Apart from these courses, HAWS regularly conducts Avalanche Rescue and Cliff Climbing Cadres for units deployed in Northern Command.

A number of foreign nationals attend training at HAWS. Can you give us some details of such foreign trainees?

Over the years, HAWS has emerged as one of the finest high altitude warfare training establishments across the world. Consequently a number of friendly foreign countries have been sending their officers and men for training. Over the last five years we have trained personnel from Nepal, Bhutan, USA, Lebanon, Namibia, Myanmar, Mongolia, Tanzania, Malawi, Uganda, Kazakhstan, Kyrgyzstan, Uzbekistan and Afghanistan at HAWS.

Glaciers are receding due to global warming. Are you facing problems in conducting ice craft training because of limited glaciated terrain in the Machoi area? Has there been a perceptible increase in the number of crevasses?

Global warming is a reality that is staring us in our faces every day. Our training areas on the Machoi Glacier have receded to two hours of walking time from the road head. The older generation tells us that it used to be just half an hours walk twenty years ago. Such increased rate of melting exponentially increases the risks of collapse of ice walls and opening of crevasses. It goes without saying that in the years to come, we will have to look for new training areas for glacier training.

Which is the next major expedition that HAWS is organizing and preparing mountaineers for and when are you planning to launch it.

The next major expedition being planned is the ascent of Kanchenjunga in 2023. The expedition is being led by Lieutenant Colonel Mirza Zahid Baig, Senior Instructor at HAWS with six Havildar Instructors as part of the team. 22 members from amongst the selected team of 31 comprises of personnel who have undergone training at HAWS. The expedition to Mt Kamet (7756 metres) and Mt Abi Gamin (7355 metres) in September 22 was a preparatory climb for the Kanchenjunga Expedition. The team will assemble in April 2023 for final preparation, training and ascent. I have no doubts in my mind that the expedition will be a resounding success.

Foreign Students being trained at HAWS

Left photo. HMI logo at the Complex in Darjeeling. Right Photo. HMI Training in progress in West Sikkim.

Himalayan Mountaineering Institute (HMI), Darjeeling

HMI is one of the premier mountaineering institutes in the world. Founded on November 4th, 1954 by none other than Pandit Jawaharlal Nehru, the first Prime Minister of India, the institute is located in the picturesque hill station of Darjeeling. Darjeeling also became the home of Sherpa Tenzing Norgay, the first human to set foot on the highest peak of Mount Everest along with Sir Edmund Hillary. And it was in HMI that Tenzing spent most of his post-Everest ascent period as Director of Field Training. HMI is a prominent landmark in Darjeeling and a tourist attraction, commanding a magnificent view of Mount Kanchenjunga, the third-highest peak in the world.

In more than 68 years of its existence, the Institute has trained more than 45000 students including 2500 from different foreign countries. The prestigious Course completion certificate from HMI is a prized possession of any trainee. HMI boasts of a lineage of very illustrious luminaries. Tenzing Norgay was associated with HMI as its Director of Field Training from June 1954 to May 1976. He was then appointed Advisor in May 1976 and was the guiding spirit to the Institute till his death in May 1986. Nawang Gombu, who became the first man to climb Mt. Everest twice was an instructor at HMI since its inception in 1954. He succeeded Tenzing as Director of Field Training at HMI in 1976 and continued to give his valuable contribution to the institute till his death in 2011. Dorjee Lhatoo, another distinguished mountaineer who scaled Everest, Chomolhari, Matterhorn and Nanda Devi peaks among others started as an instructor at HMI and later became the Deputy Director of Field Training. Though retired from service now, he continues to provide valuable guidance for the betterment of the Institute. Nima Tashi, another renowned Everester is also among the dozens of instructors at HMI. Through his lectures and talks, he has popularized mountaineering and adventure all over the country.

HMI provides state of the art facilities to its trainees. It boasts of a well-furnished hostel facility for the trainees which can accommodate up to 150 trainees at one time and includes a 48-bed girls hostel. It has modern training facilities like the indoor and outdoor climbing walls and a well-stocked library with over 2800 books, mostly on mountaineering though there are books on travel, exploration, astronomy, geology, flora and fauna too.

After basic lessons in Darjeeling, the trainees move out towards the West Sikkim Himalayas, set up a base camp, and receive practical training on actual rock faces, and on ice slopes. They also summit a minor peak in the vicinity.

HMI has the oldest mountaineering museum in the country which was established in 1957. It serves as a centre of educational research on mountaineering activities both for trainees and research scholars and has a rich collection of models, paintings, sculptures, photographs, manuscripts, autographs, books and mountaineering equipment belonging to famous mountaineers.

Nehru Institute Of Mountaineering (NIM), Uttarkashi

NIM is rated as one of the best mountaineering institutes in India and also considered as the most prestigious mountaineering institute in Asia. The proposal to have a mountaineering Institute at Uttarkashi was

mooted by the Ministry of Defence, Government of India and the Government of Uttar Pradesh in 1964. Uttarkashi was specially selected as the home of NIM, primarily because of its close proximity to the Gangotri region in Western Garhwal, which undoubtedly has the best climbing and training potential in India and perhaps in the world. Perched beautifully on the turtle back hill across the East bank of river Bhagirathi, the Institute overlooks the sacred town of Uttarkashi and the confluence of Indravati with the Bhagirathi.

Brigadier Gyan Singh, a renowned Everester was the first Principal of NIM who developed a very strong ethos in the Institute with his wide experience, He nurtured it through its formative years, while Late Shri H C Sarin, who was the Secretary of NIM for 22 long years, ensured that the Institute had all the bureaucratic support and the where with all for a premier national Institute.

The Institute took shape in 1965 at the Provincial Armed Constabulary Campus at Gyansu on the North bank of the river Bhagirathi. NIM moved to its current location in the Ladari Reserve Forest about five km away across the Bhagirathi River in 1974. Located at 4300 feet altitude, amidst a dense pine forest, it overlooks the sacred river and the valley of gods. It has a sprawling campus, spread over almost seven hectares of prime forest land. In 2001, Tekhla Rocks an area of almost 3.5 hectares of Rock and boulders, was added to the real estate of the Institute. The campus offers trainees a wide number of facilities catering to their ideal physical and mental development. The sylvan surroundings of the Institute and the exquisite natural surroundings have made NIM a sought after destination for mountain and nature lovers.

In an unfortunate incident, an avalanche hit Draupadi Ka Danda II peak at a height of 17,000 feet on 04 October 2022. The peak is located in the Gangotri range of the Garhwal Himalayas at a height of 5,670 metres. A team of 34 trainee mountaineers and seven instructors from the Nehru Institute of Mountaineering (NIM) was caught in the avalanche while returning. 29 of these trainees and instructors died in the tragic accident.

Jawahar Institute Of Mountaineering And Winter Sports (JIM & WS), Pahalgam

JIM & WS was established in 1983 at Aru, near Pahalgam, J&K on the lines of HMI, Darjeeling and NIM, Uttarkashi with a view to provide numerous adventurous activities at one place in close proximity of each other. The picturesque Aru, a beautiful tourist spot was chosen, as it boasted of being a trekker's paradise, provided facilities for rock craft, ice craft, stream crossing and has a glacier in close vicinity, besides suitable slopes for skiing in winters.

JIM & WS made a humble beginning by conducting the first Basic Mountaineering Course on 24 June 85 with seventeen students. Owing to disturbed conditions in the valley in late 80's and reluctance on the part of the students to come to Aru, the Institute was shifted to Tringal to the South of Banihal in August 90. Despite odds, the Institute continued to train adventure lovers. Later, with the situation improving in the valley and a rise in tourist activities, the Institute returned to Nunwan, near Pahalgam in Kashmir in October 2003.

On its relocation at Pahalgam, JIM & WS received much needed impetus and support from the Pahalgam Development Authority and the J&K Department of Tourism. The Institute undertook promotional visits across the country, participated in almost all travel trade fairs and publicized JIM & WS in all states in collaboration with private travel and tour operators. As a result of the fresh initiatives, the Institute is now attracting adventure

Skiing Training near JIM&WS, Pahalgam.

Army Adventure Wing sponsors expeditions in the Himalayas. Mountaineers open a route in one such expedition.

lovers from distant places, such as Shillong in the East, Bengaluru in the South and Rajkot in the West.

The Institute actively promotes adventure tourism and has conducted special Adventure Courses for students from the travel fraternity. In addition to the existing Adventure, Basic and Advance Mountaineering Courses and Basic, Intermediate, Advance Skiing course, the Institute also conducts adhoc and special Adventure courses. River rafting and paragliding have been included in the curriculum of adventure sports. These fun laden courses are being conducted under the vigilant guidance of highly skilled and professional Instructors. The Institute also provides technical expertise to different organizations interested in mountaineering expeditions.

From Himex to Army Adventure Wing (AAW)

The late 1980s and early 1990s saw a slew of adventure activities and expeditions to new heights and depths under the aegis of the Army Adventure Cell (AAC). Numerous expeditions were launched, the most prominent being the launch of HIMEX, an acronym for the 'Great Himalayan Expedition' from 1994 to 1996.

This project was initially conceptualised as a *'Trans Himalayan Hot Air Ballooning Expedition'*. General BC Joshi, the then Chief of Army Staff, directed that the scope of the expedition should be enlarged to encompass most of the adventure activities. Thus, the concept of the Great Himalayan Expedition (HIMEX) emerged after great deliberation as a mega event different from other army assignments. The evolution of project HIMEX in its entirety was a result of intensive research.

Countries of contemporary importance were considered and invited to participate in various adventure activities. Participation by all other countries, besides all the armed and paramilitary forces made HIMEX emerge as a truly multinational, multifaceted and multidimensional venture.

The Army Sappers scaled Nanda Devi in 1993 and cleaned the environment around it scientifically and ecologically. In 1995, Major JS Dhillon and his team of Grenadiers climbed Kamet from the West along a very challenging route. Not only on land, but soaring high in the skies and diving deep in the seas had begun by the adventurists. A legacy of the British, sailing had been kept alive by the die-hard enthusiasts who had made it the most pursued and established aqua sport in the country. Meanwhile the 'Eagles', the personnel of the Electronics and Mechanical Engineers at their Centre in Bhopal inflated balloons with hot air. While the concept to balloon began in the late 1980s, it was only during HIMEX and later that this gathered momentum.

So grand was the success of HIMEX launched by the AAC and so vast the experience of enthusiasts that it was considered untimely to 'hang up' the equipment and expertise gained. By obtaining necessary government approvals in 1996, training nodes were established in field formations by 1997 in a phased manner.

Army Adventure Cell was upgraded and the Army Adventure Wing was established in 1997 as the apex body of the Indian Army conducting adventure activities. The honour of being the first Deputy Director General (DDG) of this Wing was that of Brigadier Pushkar Chand.

Lt Gen JS Sandhu (Retd) *Editor*

Exploring the corals off Kavaratti.

SCUBA DIVING

AT LAKSHADWEEP

This very interesting article is written by a XII Standard school student of the Navy Children's School at Kochi. His father is Master Chief First Class Ram who is the senior-most diving instructor of the Indian Navy's very well-known Diving School at Kochi. This young author recalls the time of his life as a participant in a programme run by the Southern Naval Command at Kochi for longer than a decade. The Navy has been organising an annual scuba diving camp for young daughters and sons of naval personnel at Kochi. The event is not taken lightly by the Navy or the children who have to go through a screening camp. A naval ship then carries this excited group to the Lakshadweep where in the pristine waters these boys and girls discover the beauty of coral reefs, the fish and vegetation and understand the need to preserve and protect the environment while having a lot of fun. Read on what young Dikshant Choudhary describes. This NDA aspirant not only has diving running in his genes, he seems imbued with a zeal to serve. Some explanatory notes have been added to enable readers to understand nautical terms that Dikshant uses like a "pro"!

LAKSHADWEEP AHOY!

Among the many camps I have been a part of, this one was beyond my expectations and was a most thrilling experience. I

Boys and girls ready to dive off Lakshadweep.

was a part of the scuba diving camp organised by the Diving School, Kochi in 2019. The selection procedure involved basic swimming, diving, medical examination and basic physical standards.

After screening, we were put through preparatory training which included swimming, underwater swimming and snorkelling in the Command as well as at the Diving School swimming pools. Refreshments were a welcome add-on which kept us all pepped up.

We learnt about various parts of the scuba diving set, its merits, demerits and its uses. The Navy not only took training but safety training very seriously. Finally, the day dawned and we excitedly headed out to sea.

As soon as we boarded *INS Nireekshak,* we were told about safety measures and customs to be observed onboard. *(Nireekshak is a deep sea diving tender with very sophisticated equipment for diving and submarine rescue operations and has a superb set of diving specialists, both officers and sailors, in constant readiness).* We played "naval" volleyball, which was tied to a rope so that it did not fall into the sea. Other games and activities like tug of war helped us mingle among ourselves and get friendly with each other.

However, the passage to the Lakshadweep Islands was not all fun. Many of us were seasick through much of the previous evening and night although the sea was generally calm! We reached Lakshadweep and were awestruck by the scenic beauty as we moved to the Naval base and subsequently to our dormitories. We were quite glad to be on mother Earth again.

On the first day itself, we set up tents. We used to wake up at around 5 in the morning and get ready for the day. We were fortunate to see the sun rise in splendour out of the sea after which we used to have our breakfast and then go for Diving.

At the diving site, we started with some mild exercise to warm up. We were divided into groups after which we boarded our Gemini boats *(these are inflatable rubber dinghies with an out board motor)* with each group having an instructor-in-charge. After reaching a certain point, the group in-charge dropped the sinker in the water so as to ensure that the Gemini does not drift. We wore our diving suits and were ready to jump in the water upside down, always accompanied by a diving school instructor. There was always a tingling sensation in our stomachs but the desire to see the underwater beauty always overpowered. Under the water, it was a completely different world. All colours of fish and coral reefs left me mesmerized. I had only seen these pictures before on television. I felt like I was on Discovery HD channel live. We clicked photos on the surface as well as under the water.

But these sessions were physically tiring and left us all exhausted. We headed back to our dormitories for lunch. In the evening after a short nap, we played basketball and volleyball. Every day before going to bed, we used to play Uno cards in the basketball court.

On one of the days, we didn't go diving because it was a solar eclipse. We were in fact told not to look directly at the sun, and only look at the reflection of it.

We also took part in a marathon on the island. It was exhausting but

a lot of fun. On the last day, we had campfire and a series of activities including dances, singing etc. I took part in singing. It was really enjoyable and a good way to bring the camp to a memorable close. We were addressed by the Officer-in-charge of the Diving School in which he summarized our activities, exhorted us to aspire to larger things, understand the environment we lived in and our roles as citizens.

The last day was overwhelming. We packed and started our journey back to Kochi on *INS Nireekshak*. Fewer of us were seasick and we perhaps had grown what seamen called **"Sea Legs."** That night we watched a movie titled *'The Meg'*. We also saw our pictures that were clicked over these days. The next morning, we reached Kochi and it was an end to a most memorable experience.

A great learning experience, the diving camp gave us the required exposure and made us more familiar with what the Indian naval divers do. It was a way for me to personally understand and appreciate my father and his colleagues even more as part of the Indian Navy's Diving Branch.
It also gave me first-hand experience of the science behind scuba diving and enriched my awareness of marine life so much that I watched several videos on it and its upcoming opportunities in India as a profession. Moreover, it helped me make more friends and gave memories for a lifetime. You too should avail this opportunity given by the Diving School and make your vacations memorable.

For those interested, here are a few more thoughts on snorkelling. I did have some experience in snorkelling and diving in pools but this was my first experience in open water. Initially I was very nervous because it wasn't that I was going to do it in a swimming pool but in the waters of the Arabian Sea which are deep as well as wide, full of life. It made me feel intimidated by the water.

The first time when I jumped inside the water, it freaked me out. But within a short while I was enjoying the magic of the water and started observing things around me, and my fear vanished. The more I stayed below, the more real and enjoyable it was. I was stunned with my first vision of the underwater world. As we went deeper, the increased water pressure created pressure against the membranes but since we were already taught about how to equalize our ears by Ustaads, it wasn't a big task for us.

Our breathing becomes slow, purposeful and rhythmic. And we are suddenly aware of how our movements connect with each intake of breath. Every breath counts, comes into actuality under the water because the number of breaths we can take are fixed here as there's a limited amount of air in the cylinder and we have to experience and take back everything in that limited time. Everything around us was mesmerising, like we were in another world with gorgeously coloured fish and coral reefs.

We as humans have made ourselves so much a centre of everything in our world that when we get into the water and see the underwater creatures, you feel a sense of wonder. I think we saw things differently and realized we were merely visitors in a domain that belonged to these wonderful fish and corals. All we could do was admire and perhaps help preserve and protect this world.

This was an experience which I cannot express in words but I am extremely grateful to Diving School for giving this opportunity to create memories with the best people, mentors around me which I will forever cherish. Therefore I would urge everyone that whenever you get a chance to do something like this, please do. It is an experience that nothing else can match.

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Dikshant Choudhary, son of MCPO First Class (CD) Bhawana Ram is currently studying in class 12 in Navy Children's School, Kochi. His father, his role model, is posted at Diving School, Kochi. With science stream and computer science as his optional subject, Dikshant is very keen to join the National Defence Academy, Pune and join the Indian Navy. The young boy's hobbies include cricket and basketball. He has also attended classes conducted by the Seamanship School, which aim at imparting knowledge about the basic sail rigging and sailing techniques.

Dikshant Choudhary

TARINI'S VOYAGE

ACROSS THE OCEANS

'Let your dreams set sail'
- Anonymous

One sail boat; six determined and brave Indian Women Naval Officers; a stupendous 254 day long voyage; covering approximately 22,000 nautical miles circumnavigating the globe; navigating through three oceans and many Capes; touching four continents; crossing the Equator twice … Seems like a dream! Yes, it's a dream come true for the daring ladies who accomplished the mission and indeed a proud moment for our 1.4 billion strong Nation. An insight into the historical milestone achieved by the mission named 'Navika Sagar Parikrama' follows.

Navika Sagar Parikrama was the name of the sailing expedition undertaken by an all women six member crew of the Indian Navy onboard *Indian Naval Sailing Vessel (INSV) Tarini*. The name quite literally translates into oceanic circumnavigation by women in a boat, an apt name for the

sailing expedition. The voyage commenced on 10 September 17 from Goa and after circumnavigating the world and etching the unprecedented feat in the history books, culminated on 21 May 18 at the same place it flagged off from. The tough voyage showcased our Nari Shakti indeed.

INSV Tarini. Before we sail around the world, a brief introduction to the vessel (our home for a better part of the year) on which the milestone was accomplished - *INSV Tarini*. This mean, maritime machine is an indigenously-built sailing vessel - 17 metres long, five metres wide with a displacement of 23 tonnes. Inducted into the Indian Navy (IN) in February 2017, *Tarini* has been built by M/s Aquarius Shipyard Pvt. Ltd., Divar, Goa.

The Crew. After an extensive and strenuous selection procedure, the all women six member crew was selected from amongst 40 volunteers. The 'six - serendipitous' who finally embarked on this historical voyage were **Lieutenant Commander Vartika Joshi (Skipper), Lieutenant Commander Pratibha Jamwal, Lieutenant Commander P Swathi, Lieutenant (IN) S Vijaya Devi, Lieutenant (IN) B Aishwarya and yours truly (then Lieutenant (IN) Payal Gupta).** We came from different parts of the country, and different departments of the Navy, some of these departments did not even include sailing as the basic job profile. Nevertheless, the Navy provides every sailor and officer-cadet some sea sailing experience as part of initial training to simultaneously create respect for the sea and its winds and waves as well a level of romance for the Naval lives ahead of them.

Run Up to the Epic Voyage

'Success is when Persistence meets Preparation' - Sherrilyn Kenyen

Training, mentoring, preparedness and more importantly the will to learn are the pre-requisites for success of a voyage of this magnitude. The Navy facilitated honing the skills, imparting multi-dimensional knowledge and practical know-how to this end. Captain (IN) Dilip Donde, SC (Retd) and Commander Abhilash Tomy, KC are proficient sailors of international repute, who were able maritime-mentors to us. The experience and all-round knowledge of the crew was reinforced by theoretical as well as practical knowledge. We were given specialised training on astronomy, meteorology, navigation, communication, seamanship as well as reading and analysing weather and weather maps. For practical experience, we undertook similar, albeit shorter duration voyages onboard Tarini and other similar vessels. It is important to realise that once sail is set to open waters, it is only the crew who have to conduct all the evolutions and there is no support system available. Accordingly, the training was all-encompassing, preparing us to tackle any eventualities at sea – we were trained to be electrician, plumber, engineer, doctor, chef, navigators and just about everything.

The Arduous Voyage

'It is good to have an end to journey toward; but it is the journey that matters in the end' - Ernest Hemingway

The 22,000 nm long voyage was covered in six legs. We set sail from Goa and entered the port of Fremantle in Western Australia on completion of the first leg of the journey. Thereafter, the vessel touched port at Lyttleton in New Zealand, Port Stanley in Falkland Islands, Cape Town in South Africa, Port Louis in Mauritius before

Tackling the rough seas in bad weather.

The 'Women in Red' onboard INSV Tarini.

returning back to Goa. We intrepid ladies navigated through three oceans i.e. the Indian Ocean, the Pacific Ocean and the Atlantic Ocean. Further, to qualify as a circumnavigation voyage we crossed every Meridian (longitude), navigated through the three great Capes (Cape Leeuwin, Cape Horn and Cape of Good Hope), crossed the Equator twice, started and completed the voyage at the same port (Goa, India) and did not enter any canal.

The Challenges. The voyage onboard INSV Tarini was fraught with danger, many a times we were caught up in gales with wind speeds upto 70 knots or 120 kmph and faced waves as high as nine storey buildings. We endured extreme weather conditions, starting with 45 degrees Celsius in India, 12 degrees Celsius in Australia, zero degrees in New Zealand and sub-zero in the Pacific Ocean. Further there were technical glitches onboard, including a steering gear breakdown, which we tackled with zeal, resoluteness and tenacity.

The Wind Effect. A popular quote by Elizabeth Edwards *'when the wind did not blow her away; she adjusted her sails'*, is truly relevant and apt to this voyage. Wind was our bread and butter, but it also gave tensions and threw challenges. At times there were nil winds to support the sails and at times we encountered a gale or a hurricane, which would challenge us to the limits. We were proficient and handled the wind conditions dexterously, adjusting the sails suitably to safely complete the voyage.

Taking the Waves Head On. The oceans are unpredictable and unforgiving too. Vartika, our skipper, reflected on one of the big challenges before we crossed Cape Horn, often referred to as the Everest for the Seafarers. She said, *'the waves kept coming one after the other, it was bad and we had not seen something like this before … during night ... we would listen to the sound of the waves and then keep the boat steady'*. On one occasion, to evade the waves and rough seas, we Navikas had to cut down the sails and hand-steer the boat for 16 to 17 hours at a stretch. The waves were as high as a ninth storey building and splashed sea water on the boat every time they made impact. A Navika narrated *'that water was even inside the boat; the skipper came floating; she was trying to make out if she was onboard or in water'*.

Life Onboard. Life onboard was tough and it was a gruelling test of human endurance, perseverance and sailing skills to battle the elements of the sea and its wrath. A few interesting tidbits from the voyage are recounted hereafter.

Food Management. Tarini is a small boat and food storage was limited. We cooked food as per the weather. If the weather was good, we cooked rice and chapatis, on the contrary if the weather was bad (which it indeed was on numerous occasions) we stuck to ready to eat foods.

Fresh Water. Fresh water, as we all know, is an essential requirement for human survival. We kept a stock of 400 litres of fresh water for every 40 days of voyage. Bottled water was used for consumption and we often resorted to rain water harvesting to meet the fresh water requirement. Taking a shower in the rain on the deck was memorable and *'every time we wanted to take a fresh water bath, we would go to the deck with soap and shampoo and take a shower'*.

Celebrations Onboard. Eight months is a long time to be away on voyage. We celebrated special occasions with enthusiasm onboard the five metres wide boat. We celebrated birthdays of four of the six crew members and crossing the Equator on both occasions by cutting cakes. The cakes were baked onboard. On Diwali, we made eco-friendly diyas with atta, used surgical cotton and ghee to light them and thereafter set them afloat in the ocean.

Partners Sailing Alongside. During the voyage, we came across astounding aquatic life ranging from dolphins, sperm whales, killer whales, sharks to albatross. When asked about pirates, one of us remarked that *'we avoided pirate-infested areas and I don't think pirates attack a small boat, especially one which was always short of food'.*

Witnessing the Beauty of Nature. During the voyage we witnessed various natural phenomena. We vividly recall having witnessed the Southern Lights of Aurora Australis and even bioluminescence, whilst on voyage from Australia.

Tarini's Crew - Daredevil, Dynamic Divas.

The Homecoming

INSV Tarini entered Goa Harbour on completion of the historic global circumnavigation voyage on 21 May 18. We were received at the jetty by Smt Nirmala Sitharaman, the then Hon'ble Defence Minister. The Hon'ble Minister had also flagged off the event. Mrs Sitharaman stated, *'It's not the girls achieving, it's the youngsters from India achieving. The women of this country have shown that it is possible for the youngsters, if they want to do something, that they can indeed do it, by showing commitment, grit and dedication.'* The Chief of the Naval Staff, Flag Officer Commanding-in-Chief the Southern Naval Command and several serving and retired Naval Officers and dignitaries were also present at the venue to welcome us.

It was indeed a poignant moment for the Navika Sagar Parikrama team including the crew, trainers, overseers and support staff. We were ecstatic on completion of the voyage and the homecoming was also a time for a happy reunion of us daredevil divas with our families and friends after a period of eight and a half months.

We have been felicitated with Nao Sena Medal and Nari Shakti Award for this unprecedented voyage. Perhaps the feat achieved by Navika Sagar Parikrama is best summed up by Shri Narendra Modi, Hon'ble Prime Minister when he tweeted, *'Heartiest Congratulations to Indian Navy's all-women crew of INSV Tarini for completing the Navika Sagar Parikrama, their mission to circumnavigate the globe. Welcome home. The entire nation is proud of you'.*

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Lieutenant Commander Payal Gupta, an alumnus of the Indian Naval Academy, Ezhimala, was commissioned on 30 December 2013 in the Education Branch. After her schooling from Carman School, Dehradun, she did her B Tech (Computer Science) from Uttarakhand Technical University, Dehradun. She has served in various training establishments of the Navy like INS Chilka, INS Mandovi and at the Rashtriya Indian Military College. She is presently in a staff billet at INS Angre, Mumbai. A passionate sailor, she was awarded a Commendation by the Vice Chief of Naval Staff in 2016 and she is a proud recipient of the Nao Sena Medal.

Lieutenant Commander Payal Gupta

YOU MUST DREAM;

AND DREAM BIG

- VIKRAM DEV DOGRA

Major General Vikram Dev Dogra has displayed exemplary mental strength and physical ability for over half a decade now, completing the world-famous Ironman challenge thrice. In this exclusive interview with Medals & Ribbons, he shares his experiences and endeavours.

Greek mythology celebrates the twelve labours of Hercules. The demi-god, known for his courage and strength, braved ferocious lions, drove away large flocks of man-eating birds, snatched golden apples from the King of Gods Zeus himself, and even travelled all the way to the dreaded underworld, the land of the dead. His mental and physical skills are the stuff of legend. In fact, these words from the movie adaptation on Hercules still hold good – *"I will face the world, fearless, proud and strong… I can go the distance."*

Today though, those words might aptly be spoken by **Ironman Major General Vikram Dev Dogra** himself. He completed the extremely difficult and globally coveted Ironman challenge, not once… not twice… but thrice! Organized by the World Triathlon Corporation (WTC), this is considered among the difficult one-day sporting events worldwide. *"This is one of the most gruelling one-day endurance events in the world,"* Major General Dogra tells us. *"You have to swim 3.8 km in the ocean, cycle 180 km and then run a full marathon of 42.2 km. All three need to be done back-to-back, within 16-17 hours, depending on where the event is held. It was something that I always knew about, but I never dreamt that I would actually want to do it one day…"*

Maj Gen Vikram Dogra captured at the Ironman Austria on July 1, 2018 during the 42.2 km run.

Major General Dogra's journey started off with roots in the Indian Army. "Some of your identity, you inherit," he says. *"It is thrust upon you. When I was in school, I was inspired by my father who was in uniform. Because of him, I always aspired to join the Indian Army. For instance, in 1965 I was five years of age during the Indo-Pak War; in 1971 he was on the Bangladesh front… Other than opting for the Indian Army, I gave no thought to anything else. When I was in Class 11, I applied for National Defence Academy (NDA), Pune. I managed to clear it during the first attempt in 1977 December, and joined the NDA in 1978."*

Life in the NDA was very different from what he was used to. Since he hailed from a boarding school in Mussoorie - St George's College - adapting to the environment took some getting used to. Ironically, during the first two terms, he was actually unable to pass his physical tests and was put into the 'weak squad'! *"I worked very hard to change this through extra training,"* he says, adding, *"Not only did I clear the tests in my third term, by the time I passed out of it, I was the best in physical fitness. I became good at marching, shooting, horse riding… in fact, when I passed out, I got six medals. No cadet had got that earlier."*

The Indian Military Academy (IMA), Dehradun was also very special since Vikram Dogra met his wife there. She was the older of the two daughters of the IMA's Principal. *"I just wanted to talk to her. I remember then, the number was 292. There were no caller IDs or mobile phones. Just a three-digit Army Exchange number. When the phone was picked up by a girl, I asked for Ms Sharma. It happened to be the younger daughter, who handed over the phone to her sister. I told her, 'I want to be your friend'. She said 'no' and banged the phone down. I don't blame her - she was only in class 10! But I persisted, and rang up again and again. She kept slamming the phone down. Then one fine day, I rang up and apologised to her. Unfortunately, the voice on the other side said, 'This is Supriya's mother speaking'. This time I put the phone down hurriedly, but was also happy I had discovered her name! After a month of calling, I finally I convinced her that I only wanted to speak to her on the phone. We started chatting. Then the IMA fete came, and I told her I'd ask to dance. She would recognize me as I had green eyes. At that point, she played hard to get, but when I started dancing with someone else, she was upset. That was my first meeting with her, and there was no looking back. So that's why the IMA has very special memories for me."*

It is clear from our interaction with him, that Vikram's father was his hero and biggest ideal. He was recently honoured in the Ordnance Officers Mess in Delhi Cantt, on attaining 100 years of age. The pride in his voice is evident, when he speaks of his father's achievements and influence on his life. *"He taught me how to shoot. He bought me an airgun at 7. Because of this, I was the best shooter at IMA. He taught be how to box and introduced me to sports in general. He was very strict, but despite that I was always encouraged. We had some great moments together. He would take me for picnics, or we would take off somewhere on a two-wheeler…there was a lot of bonding. However, when he was posted in the field areas – for instance on the Eastern Front during the '71 war– the connect was off and on. I would attribute most of what I am to what he taught me and what I saw of him. He retired in 1973, built a house in Dehradun and settled there, until recently when we moved in together. He turned 100 in August and he's absolutely fit and mentally very alert! He knows and remembers everything – from dates to events. He's seen the partition. In fact, his dad was Deputy Superintendent of Police in Lahore under the British rule. Because of that position and stature, he had a pampered and protected childhood. However, when the revolt against the British was going on, his father was shot at and hit twice. Dad had to run away to Ajmer to protect his life when he was 13 or 14. Much later, he went back to pick up his family during partition, leaving behind all their property. He's seen that side of life as well."*

Ask Major General Dogra what spurred him to take up the Ironman challenge, given that he was also still

At the Ironman Barcelona on October 2, 2022, during the cycling ride.

At the finish line during the Ironman Barcelona.

juggling a full-time job with the Indian Army and he says he always knew about it, but wasn't sure he would ever take it up. *"Then, I had a very small professional setback, but I took it negatively. I started brooding, hibernating and felt ashamed that I'd let people down. I knew deep down inside that there's more to life than not getting approved, but even then, I blamed myself. I started losing confidence in myself. My self-esteem was low. This went on for 8 -10 months. I knew I had to snap out of it. I'm not designed to live a sedentary life in hiding! So, I concluded that if I have to forget what has happened, I'd also have to create something new. If I could do the Ironman, I could prove to myself that I was still the guy I used to be. That's how it started."*

Initially, the Indian Army and his colleagues had no idea he was training for it. Only his close friends and family knew. He started training in mid-2017, and successfully attempted the Ironman challenge for the first time on July 1st, 2018. He was 58 at the time.

"For me to convince myself that I could do it, was the first challenge. Whenever I shared it with select people, they said I was too old, or I may have a heart attack, or I may not succeed. I got discouraged. I started doubting my own capability. But my wife and family were absolutely behind me one hundred per cent. Had my wife not been as tolerant, accepting and supportive, it would have been a lot more difficult."

Once he crossed that mental hurdle, came the challenge of training. He decided to attempt that journey entirely on his own, as he knew his body well. He conducted a lot of study and research. There was no nutritionist or trainer or any health check-ups. *"Time management was another major challenge,"* he says. *"I was in Mathura when I started training, where my routine allowed for it. I was home by 2.30 pm and had the evening available to train. Then I got posted into New Delhi, which was a 9 am to 5.30 pm job, five days a week. Nearly 10 hours of my day were spent at work. To train post that was my biggest challenge. I would get back from office, run from 7 pm to 10 pm thrice a week. Twice a week I would swim during the same time. And then I cycled over the weekend, from 2 am to 9 am. Why such odd hours? The four months preceding my event, between March and June, were very warm. During this time, temperatures were lower, pollution was lesser, and traffic was significantly reduced."*

Another challenge he faced was the equipment. None of the equipment needed to train was produced in India. One had to either buy it online at a high price, or pick up what was available. *"It is an elitist sport at the end of the day, because you need to spend money. For instance, a base model of a good cycle would cost INR 1.5 lakhs, while a top model could cost INR 5 lakhs, and sometimes even up to INR 10 lakhs. The helmet is another INR 10,000; then you have your cycling shoes, hydration, special nutrition and diet. Registration is around 700 euros. You also have to consider ticket and visa costs to go to the Ironman destination, and factor in your stay and living expenses there. Overall, if one was doing it for the first time, it would set you back anywhere upwards of INR 4-5 lakhs. Thereafter, once equipment is with you, that figure could come down, but the rest of the expenses such as diet, travel and registration remain."*

Lastly, there was the challenge of social life and family life - he needed to make sacrifices on both fronts.

"When I hit the first Ironman, I swore I'd never do it again. It was so tiring and there was so much fatigue. But three months down the line, when it was over and the wounds healed and memories of unpleasant moments faded, I asked myself what I was still doing in my comfort zone, and decided to go for it again! Does it get easier? Well, the physical challenge remains. But mentally you are conditioned better. I wouldn't say it was easier or tougher. Time management was not too much of an issue

Left Photo. Being awarded the AVSM in 2019, Right Upper Photo. Riding in Yol in 2021, Right Lower Photo. Being awarded the Sword of Honour at the IMA on December 19, 1981.

as well, since I had retired. I could train at leisure. However, the irony here is, I was more disciplined under the stress of time management. The third time though, two years had passed because of Covid-19, and a lot of the training was indoors. So that was a bit harder."

He has motivational words for people who want to undertake the Ironman challenge. *"Be clear why you're getting into it. You must genuinely want to do it, since it is something that's going to take away a lot of time and energy. There needs to be a valid reason, since there are sacrifices to be made. If you're at a stage in your life when you need to focus on your profession, or family, or other commitments, take a pragmatic decision. But, as you keep waiting, you'll grow older. There's a certain time during which you can run it. In the Army, your physical testing stops at 45. These are the things you must keep in mind. Only if you can spare the time, effort and energy, should you go for it. With proper training, I am of the firm opinion that anyone can take on this challenge."*

Other than the Ironman challenge, Vikram Dev Dogra is also an avid adventure sports enthusiast. He has cycled from Leh to Chandigarh over five of the highest mountain passes. In 1984, he volunteered for a course in Himalayan Mountaineering Institute in Darjeeling, and scaled a mountain at 22,000 feet. He went on a 140 km rafting expedition on the River Ganga in March 2020, where he camped on the river side. He's also gone bungee jumping and cycling in Northeast India. *"Adventure sports are a part of me, ever since my father used to take me with him. I've tried my hand at most things. On my bucket list is skydiving, which I hope to do soon."*

Multi-faceted, he has also given motivational Ted Talks, and has been on the panel of a beauty pageant. *"I feel it is an acknowledgement to have done around five Ted talks. There is the satisfaction that people want to hear what I have to say. As for judging beauty pageants, I think any man who is given the opportunity to do so isn't really going to pass it up, right?"*

If you'd like an insight or sneak peek into one of his Ted talks, he leaves our readers with words of wisdom and motivation. *"Life is short, and you must dream - and dream big. You must be convinced that your dreams can come true, because they can. Don't let the people around you discourage you. If you can dream, only then you can achieve. Our limitation is only in our mind. We have unlimited capability but we don't test it because we are used to being in our comfort zone. If you work hard and are consistent, your dream is likely to come true. But you must be prepared to fail. If failure comes you shouldn't let it bog you down. Pick yourself up and try again."*

Neeti Jaychander

AROUND THE WORLD IN A MICROLIGHT

Many of us have read the adventure novel by Jules Verne, the French writer – Around the World in Eighty Days. The idea of circumnavigating the world in quick time caught on thereafter, and many adventurers have undertaken this incredible journey. Flying around the world in a Microlight aircraft is more challenging as this personal account shows.

In the summer of 2004, I saw a strange aircraft parked in a hangar at Palam Airport, New Delhi. The aircraft was tiny, without wings but with a small main rotor and a pusher propeller. It was an autogyro. I was seeing one for the first time in my life. I waited for some time, hoping to meet the pilot, but as I was getting delayed, I hastily scribbled a note with a good luck message and my e-mail address, and placed it in the open cockpit. To my pleasant surprise, I got a reply a month later from the pilot. Warrant Officer Barry Jones of the British Army Air Corps wrote that he was attempting going round the world in an autogyro. He had to abort the attempt due to a technical issue, but it planted an idea in my mind - why not I?

That was the beginning of a chain of events, which ended in my going around the world in a microlight, becoming the third person in the world to do so. The credit for this goes to the chance encounter with Warrant Officer Barry Jones.

By general definition, circumnavigation of the earth is a route which covers at least a great circle, and in particular, one that passes through at least one pair of points antipodal to each other. For powered aviation, the course of a round-the-world record must start and finish at the same point and cross all meridians; the course must be at least 36,787.559 Km long (the length of the Tropic of Cancer). It must include set control points at latitudes outside the Arctic and Antarctic Circles. As is obvious from this, one cannot circumnavigate the earth standing at the North Pole and turning around a spot!

Flying Over the Bering Strait - from one continent to another.

A difficult way to do this is in a microlight - a small aircraft weighing not more than 500 kg, including the pilots, fuel, spares, survival gear and personal luggage. It has a range of just a few hundred kilometres, speed slower than a decent car, cramped seats where you cannot stretch your legs, and no pressurisation, oxygen, heating or air-conditioning. There are very few flight instruments and the pilot is quite exposed to the elements. One has to learn to trust one's sense of balance and vision rather than flying the plane by looking at instruments. One has to feel how the plane behaves, flying it as an extension of one's body. In essence, a round-the-world flight in a microlight is one of the greatest aviation challenges.

Once the idea had taken root, the planning for the expedition took almost two years. The process initially was a series of blind shots in the dark as the task was vast, and I faced an uphill task of convincing people that this was achievable, as well as of collecting basic planning data.

In January 2005, I flew a small microlight called the X-Air, from Delhi to Kanyakumari, stopping every 250 km. This small plane was powered by a small two-stroke engine, was open to the elements and was made of tubes, wires and fabric. The experience gained proved invaluable during the world trip. I realised the importance of self-reliance, of being very flexible, and realised that in such trips, one has to have enough technical knowledge to service the machine as well as do minor repairs on one's own. On my return from this trip, I started thinking and planning the world trip. There were so many unknowns – the aircraft to be used, the route, finances, flight planning, diplomatic issues, etc., which needed to be addressed.

During my research, I came in contact with Hans Georg Schmidt, a retired Swissair pilot and a passionate aviator post retirement. Hans had set a world record in circumnavigating the world in the weight category 500 to 1,000 kg All Up Weight. I had never been in contact with a person who was so passionate about anything connected to aviation. Hans agreed to take on the immense task of flight planning for this expedition. He helped me draw up a budget for the trip, the clearances which would be required, and the necessary equipment. He also sent me a huge list of maps, charts, books, manuals and other necessary equipment required, and the ball started rolling. Getting hold of a list was one thing – procuring the items was a big problem.

International maps, charts, survival equipment and the variety of accessories required for this mission were just not available in India. I had to resort to a cumbersome process of seeking vendors internationally, tendering, selecting lowest bidders, getting financial approvals from myriad agencies, sending letters of credit, customs exemption certificates, all of which involved a lot of work.

I wrote thousands of letters and e-mails during this time. The paperwork mounted and at times, I felt that the task was not possible. Moreover, since I was the only person working, the task of filing all the letters and their replies, the quotations and tender proceedings fell on my shoulders.

In March 2005, I wrote a concept paper proposing a world expedition in a microlight and presented it to Air Headquarters. At this stage, I did not have any idea of how to go about the exercise. I had various half-baked plans in my mind. One proposal was for doing it in a Streak Shadow microlight, but the proposal was not agreed to because the Streak Shadow was not a reliable aircraft, and was facing a shortage of spare parts.

I started research for a suitable and reliable microlight. By sheer coincidence, in April 2005, Air Marshal

About To Be Trampled - IFC-407 in the background.

At Haikou Airport, China.

VK Bhatia (Retd), had proposed a similar expedition to the then Chief of the Air Staff. Air Marshal Bhatia, a keen aviator, had recently visited a flying club in the UK, and flown the CT2K microlight built by Flight Design GmbH, a German company. Apparently, this was a state-of-the-art aircraft, with a very long range and low fuel burn.

We drew out a plan of a round-the-world expedition in a CT2K aircraft, with two of us as the pilots. I submitted the proposal in May 2005, sought "In Principle approvals" for the plan, and requested permission to seek sponsorship. The plan did not fructify due to some technical hitches.

In the meantime, I had been doing serious research on the Internet, and I started getting inputs from several people. I went over the routes flown by other pilots, and started an e-mail exchange with Brian Milton, who was the first pilot to do this in a microlight. Brian was extremely helpful, and sent me relevant data.

A major issue started bothering me. The route had been planned Eastwards, and that meant that I would be losing time – waking up earlier each day (according to my body clock). To beat jet lag, adequate rest is the only answer. However, I would not have this luxury during my trip. Within a few days of the trip, I would need to be awake, alert and fly at a time when my body was actually screaming sleep.

On board, food and water too were needed as well as means to use a toilet. In the cramped space of a microlight, open to the elements, without air-conditioning, a pilot would have the urge to visit the non-existent washroom frequently. To keep the energy level high, food and water were paramount. One cannot stop drinking water, as it would lead to dehydration. A solution had to be found to address both these issues.

We started working on the multitude of clearances required from foreign countries - visas, diplomatic clearances for overflying and permits for landing - a very complicated procedure even for a single country. The plan of two dozen countries compounded the complications. As over- flight clearances are valid only for a limited time, delay in one country would lead to a cascading effect in all the countries down the chain. I had to be extremely cautious while working out these details, and keep sufficient buffers. I started procuring charts, maps and manuals.

Issues which no one bothers about in day-to-day life, started becoming important factors in planning. For instance, for issue of a visa, embassies take about seven days of processing time. With this logic, if one were visiting twenty countries, getting all the visas would take one hundred and forty days. This fact had totally escaped me. I started getting the feeling that I was running against time. I had to embark on the expedition in four months and the workload was increasing day by day. I did not have an aircraft yet, nor any clearance, nor the visas or the funding.

A transponder would be required to be installed in the aircraft. This equipment, which informs ground-based radars of the position of the aircraft at all times, is a mandatory requirement in busy airspaces and airports. I also needed to install a higher capacity fuel tank, as the aircraft in its present state did not have the necessary range for my trip.

Flying procedures vary from country to country. China and Russia follow the metric system while reporting distances, speeds and altitudes. In other countries, the nautical system is used, wherein the units are nautical miles, knots and feet. Reporting procedures vary throughout

the world. While English is the globally spoken aviation language, accents vary, and as I realised later, it is very difficult to understand what the ground controller is telling you if you are not used to the accent.

Life became very confusing. I was dealing with a multitude of organizations all at once and the number started growing each day. Paper work increased, e-mails exploded, faxes multiplied and the number of files on my table started piling up above my head.

It was decided to postpone the trip to the summer months of 2007, a delay of one year. The trip was now rescheduled to coincide with the Platinum Jubilee year of the Indian Air Force (IAF). I now had a lead-time of almost one year. A decision was taken to buy a CT aircraft. The CT series of aircraft is a family of high-wing, tricycle undercarriage, two seat aircraft, manufactured by Flight Design, Germany. We decided to buy the CTSW version. This however, was not a stock aircraft; the manufacturer modified this particular aircraft by making it lighter and equipping it with a fixed pitch propeller and advanced avionics. The aircraft was now designated as a 'CTSW Advance' and was registered as military aircraft, ML-105 by the IAF. We would fly the expedition using call sign **"India Fox Charlie 407"**, identifying us as an Indian military aircraft.

The date for departure was fixed. I wrote to Defence Attaches and Air Attaches in all the countries along the route to start the process of obtaining diplomatic clearances for over-flight and landing. We moved a case for obtaining a sanction from the Government of India. The IAF placed an order for the aircraft. A search began for selecting a co-pilot and Wing Commander Anil Kumar, a Su-30 pilot, was selected. He was attached to Air HQ and both of us started working on the project in earnest. In the month of March 2007, we went to Germany to train on the microlight. The aircraft arrived in early May 2007, and was assembled by a company engineer at Air Force Station Hindan. We flew about forty hours on the new aircraft and practised long distance and bad weather flights. Being an adventure expedition, we were to operate all by ourselves, without any ground support. We were required to service, rectify and maintain the aircraft on our own. Therefore, we also trained ourselves on servicing the aircraft. A satellite phone and tracking device was fitted in the aircraft. The departure day was fast approaching. Anil and I had started a programme of physical fitness. I needed to lose weight. Both of us became very fit as a result. The benefits of this were apparent during the mission. We were able to handle unforeseen situations and came out without major problems.

The expedition was scheduled for departure on 1st June 2007 from Air Force Station Hindan, near Delhi. On 1st June, we woke up at 0430 hours brimming with anticipation and stress. I could not get a good night's sleep – had horrible dreams. Will I be able to take off in front of so many people? What if there was an engine failure during the take-off? People would laugh at me, I thought. I went to the hangar, where a Panditji, whom I had requested to conduct a small prayer ceremony to invoke the Gods, was waiting. Normally, I am not very religious, but I prayed to all the Gods fervently and asked for success in the uncertain trip on which I was soon to embark. After this, I started up the microlight and taxied out to the flag- off area adjacent to the runway. The Air Force Station had left no stone unturned for the flag-off ceremony. There were hundreds of people to wish us well.

Air Chief Marshal FH Major, the Chief of the Air Staff, flagged us off. Amidst scores of reporters, Anil and I took off and set course for Allahabad (now Prayagraj). We were finally off, attempting to circumnavigate the earth in 64 days. Interestingly, neither of us had any experience in flying internationally, prior to this flight.

At Avan Airport, Russia

SUMMARY OF THE ROUTE

Country	Airports / Airstrips Landed
India	Delhi - Allahabad - Bagdogra
Myanmar	Mandalay - Yangon
Thailand	Bangkok
Vietnam	Da Nang
China	Haikou - Guangzhou - Fuzhou - Shanghai – Qingdao - Dalian – Changchun - Shenyang – Jiamusi (Anil is replaced by a Russian Navigator; Anil would fly by commercial airlines to join up later)
Russian Federation	Khabarovsk - Khabarovsk - Nikolaevsk Na Amur - Okhotsk - Ajan - Okhotsk – Magadan - Severoavensk – Markovo - Provedeniya Bay
Alaska, USA	Nome - Mcgarth – Anchorage – Northway - Beaver Creek - Whitehorse
Canada	Watson Lake - Prince George - Bellingham
USA	Washington – Snohomish - Seattle - Salem - Arcata - Stockton - Santa Paula - Goodyear (Arizona) - Donna Anna (New Mexico) - San Angelo (Texas) - Bourland Field, Dallas – Texarkana - West Memphis -Lexington - Pittsburg - Providence, Rhode Island - Westfield
Canada	Albany - Toronto - Brampton - Matagami- Radisson- Kuujjuaq- - Kangiqsujuaq - Iqaluit
Greenland	Nuuk - Kulusuk
Iceland	Reykjavik - Hofn
United Kingdom	Lossiemouth - Halton
Germany	Munster – Osnabruck - Eggersdorf - Friedrichshafen
Italy	Rome - Ciampino - Latina
Greece	Kerkyra
Turkey	Istanbul – Kayseri - Van
Iran	Tabriz - Ahwas - Bandar Abbas - Chabahar
Pakistan	Karachi
India	Bhuj - Hindan

We started with a bag full of luck and an empty bag of experience. The trick was to fill the bag of experience before emptying the bag of luck. What followed was an experience of a lifetime, extremely challenging, exhilarating most times and sheer terror at other times. We managed to do it, not in the planned 64 days, but in 80 days, due to reasons beyond our control. Ours became the third microlight in the world to successfully circumnavigate the world, after the ones flown by Brian Milton (120 days in 1999) and Colin Bodil (99 days in 2001).

We had bettered the record by a huge margin. It was a different matter that our journey was not officially declared as a world record. The official ratification agency for aerosports is the Federation Aeronautique International (FAI) based in Lausanne, Switzerland. It works through Aero Clubs of each country. The Aero Club of India, a private body, was to ratify our record and forward it to the FAI for recognition. For reasons best known to them, our record claim was not forwarded to the FAI until it time lapsed. However, our blood, sweat and tears did not go in vain. A simple search on the Internet will spring up hundreds of links confirming the fact that the world at large has accepted our flight as a world record.

By the time we got back, we had flown 40,529 km, landed at 81 different places in 17 countries. The total time flown was 257 hours – an average of 3.2 hours daily. We had over flown Laos, Netherlands and Switzerland without landing. While a summary of the route is given alongside, the associated stories are too numerous to recount in an article.

The Southernmost point on the journey was Bangkok, at 13° 54' North latitude and the Northernmost point was near Kulusuk, Greenland at 65° 35' North latitude, just 59 miles from the Arctic Circle and 1,467 miles from the North Pole.

I learnt valuable lessons about life in general and aviation in particular in this extreme journey. I realised that the world is magnificently beautiful as are people. I learnt the hard way that weather forecasts are as unreliable as horoscopes. I learnt that carelessness and overconfidence are far more dangerous than deliberately accepted risks. I now know that it's always better to be down on the ground wishing you were up in the air, rather than up in the air wishing you were down on the ground.

I came to know that a thunderstorm is never as bad on the inside as it appears on the outside. It's worse. I became the first Indian, and the first Asian to complete this difficult journey. I also became the first Indian to fly across the Bering Strait and the Atlantic Ocean solo and unassisted.

The journey had taken a great mental and physical toll of us. We spent months clearing the bills of the advances we had taken from the IAF, and in the end, had to shell out money from our pockets, as we had lost several bills during the mind-boggling confusion of the journey. The injuries sustained by Anil while filling engine oil in China could not heal throughout the journey, and he finally saw a doctor in India. My big toenail, which was surgically removed in Russia, healed only after I got to remove my shoes in India. Sensation started coming back in my frost-bitten fingers. Our sunburnt faces and jetlagged bodies gradually came back to normal and we put on the lost weight.

Both of us became stronger and wiser men. I got the courage to take some strong personal decisions. I also started helping people around the world planning such journeys, as Hans Schmidt had once done for me.

I learnt about human nature. In his famous novella, "The Little Prince", French aviator Antoine de Saint-Exupéry, tells of meeting a young prince in the middle of the Sahara. The essence of the book is contained in the famous lines uttered by the fox to the Little Prince: *"On ne voit bien qu'avec le cœur. L'essentiel est invisible pour les yeux"* - one cannot see well except with the heart, the essential is invisible to the eyes. After being helped by hundreds of strangers, I certainly do believe that people all over the world are nice – one just has to see with the heart.

Both Anil and I were awarded the Shaurya Chakra, a peace-time gallantry award by the President of India. We also became honourees of the Aviation Week Laureate Awards Ceremony (2008) in Washington DC. Anil went on to command a frontline fighter squadron of the IAF while I went on deputation to the Government of J&K, flying VIP helicopters. We are very good friends, which only adversity can produce and are planning future adventures. Finally, I can only say, *"When once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return."*

(Condensed from the book "Around the World in 80 Days" by Wing Commander Rahul Monga, SC with permission of the Author by Air Marshal Harpal Singh (Retd))

The author has a liferaft for company.

❑ ❑ ❑

Wing Commander Rahul Monga

Wing Commander Rahul Monga, SC (Retd) is an alumnus of the National Defence Academy, Pune and was commissioned into the helicopter stream of the IAF. He has flown a variety of helicopters including Mi-35 attack helicopters. He has also flown the Cessna 152,172, Piper L3, Stemme, Super Dimona, DA42, DA20, CTSW, X-Air and Dornier 228 aircraft and has a total of 7000 hours of accident free flying. He was a flying instructor in the IAF and later, EASA authorised ATPL Technical Knowledge instructor. He is currently a Subject Matter Specialist in commercial aviation pilot training and is a partner of New Zealand International Commercial Pilot Academy and Nordian Aviation Training, Norway. As a psychometric test assessor and report interpreter, he is a provider of ADAPT - the world's best aviation psychometric test. He currently runs a Cadet Pilot Program to provide trained professional pilots to Indigo Airlines and partners Etihad Aviation Training for Airbus type ratings. He has circumnavigated the Earth in a microlight. He is also a MacGregor Medal Winner and an Aviation Week Laureate Nominee.

FLY LIKE A BIRD

- AEROSPORTS IN THE ARMY

Aerosports is one of the main spheres in the field of adventure with a large number of activities in its span and a great number of enthusiasts smitten by the desire to fly like birds. This bird's eye view gives us a good idea of Aerosports in the Armed Forces.

There is a lot of recorded material on the advent of aviation and its growth. The ancient attempts made in 400 BC by *Archytas of Tarentum* designing the *'ornithocopter'* and later by Leonardo-da-Vinci in 15th Century AD in making many drawings and models of aircraft and various designs for flying objects, which though never succeeded in flying, kept the enthusiasm of men and women to get airborne alive. The true advent of aviation began in December 1903, with the first powered flight, by *The Wright Brothers (Oliver & Wilbur Wright),* leading to important and glorious developments in commercial aviation.

But, the yearning of humans to fly like birds and feel the third dimension was achieved with the development of various 'Aerosports', which unlike normal sporting activities, encompass those activities that enable people to get airborne while exposing themselves to some kind of calculated risks, preceded by planned training and hence qualify as 'Adventure Sports'. These involve exposure to risks beyond the normal and thus demand formal training and experience before being undertaken independently. Aerosports hold a special attraction for enthusiasts who want to experience the thrill of being airborne like a bird.

A free hang glider - the fun of flying like a bird.

Indian Army has a long-standing tradition of fostering the spirit of adventure amongst all ranks and has pioneered high risk adventure activities, challenging expeditions and achieving targets 'beyond the normal', accomplished in the face of extreme adversities at most times. When viewed through the prism of international standards, aerosports are in the infancy stage in India, mostly limited to Armed Forces personnel. In the true spirit of adventure, Army, Air Force and Navy personnel volunteer and participate regularly in aero, aqua and land adventure activities. All adventure activities are planned and conducted with an aim to foster the spirit of adventure amongst all ranks.

By virtue of its varied terrain and climatic conditions, India offers excellent locations for all types of aerosports; **Unpowered sports -** *parasailing, paragliding, hang gliding, ballooning and skydiving* and the **Powered sports –** *paramotoring, powered hang gliding and microlight flying*. With the promulgation of the 'National Aerosports Policy 2022', the Ministry of Civil Aviation has taken the first step towards facilitating the growth of aerosports in India in order to make the country an international aerosports destination.

Aerosports in the Indian Army go way back to the mid-1980s and have their genesis in the operational activity of parachuting out of an airplane. The Aero Adventure Teams perform large scale formation demonstrations all over the country and abroad to showcase the true spirit of adventure of the uniformed soldiers at national and international events and to attract young talent to the Armed Forces. **A word about the different types of aero-sports.**

Parasailing

Also known as **parascending, paraskiing or parakiting**, parasailing is a recreational kiting activity, a very basic form of aerial sport, where a person is towed behind a vehicle while attached to a specially designed canopy wing that resembles a parachute, known as a parasail wing. The anchor or prime mover may be a car, truck, or boat. There is no directional control with the person undertaking the activity. The Vehicle driver has complete onus of getting the parasail airborne and down safely.

Paragliding

Paragliding is the recreational and competitive adventure sport of flying **paragliders,** undertaken by carrying out an alpine launch or a winch launch. It is a lightweight, free-flying, foot-launched glider aircraft with no rigid primary structure. The pilot sits in a harness or lies supine in a cocoon-like 'pod' suspended below a fabric wing. The wing shape is maintained by the suspension lines, the pressure of air entering vents in the front of the wing, and the aerodynamic forces of the air flowing over the outside. **The pilot retains complete directional control,** during the flight. This sport demands discipline, knowledge and experience. *The pilot undertaking this activity independently must be trained to handle emergencies, which are imparted in a course called the 'SIV'* - Simulation d'Incident en Vol, a French term for Simulating Emergency Situations in Paragliding Flight and imparting safety training. The aim of an SIV course is to expand a person's comfort zone when flying. In a nutshell, the paraglider pilot intentionally lets the glider collapse or lose lift, and while under radio instruction from an experienced SIV instructor, fixes the problem in-flight. Competitive paragliding events are being conducted extensively all over the world.

Hot Air Ballooning

Hot air ballooning is the activity of flying large balloons with a basket (which serves as the cockpit), inflated by using a flame heating up the air which

A fixed wing Microlight Aircraft - a basic trainer.

Wing Suit Flight

enters the canopy from the underside. Attractive aspects of ballooning include the silence / quietude (except when the propane burners are firing), the lack of a feeling of movement, and the bird's-eye view. Since the balloon moves with the direction of the winds, the passengers feel absolutely no wind, except for brief periods during the flight when the balloon climbs or descends into air currents of different direction or speed. *The Pilot can read the wind speeds and direction at various levels and thus control the altitude to fly in a desired direction. Otherwise, there is no mechanism to give sustained direction to the balloon. Hence, the activity demands immense knowledge and experience in reading the winds and weather.* The areas of the Deccan Plateau in Central India and the vast open spaces in the deserts of Rajasthan and Gujarat lend themselves to conduct safe Hot Air Ballooning. A large number of expeditions and tethered flying is conducted for exposure of enthusiast volunteers to this activity.

Paramotoring

Paramotor is the generic name for the harness and propulsive portion of a powered paraglider (PPG). It is the powered form of Paragliding and does not classically need a hill or a mountain to carry out the takeoff or launch. There are two basic types of paramotors: foot launch and wheel launch. Foot launch models consist of a frame with harness, fuel tank, engine, and propeller. A hoop with protective netting primarily keeps the lines / controls away from the propeller. The power unit / engine with propeller is worn like a large backpack to which a Paraglider is attached through carabineers. Wheel launch units either come as complete units with their own motor and propeller, or as an add-on to a foot-launch paramotor. They usually have 3 (trike) or 4 (quad) wheels, with seats for one or two occupants. The 'trike' is the more prevalent form of wheeled paramotors as it is the conventional landing gear and is tested to safety standards in a variety of flying machines. Paramotors are extensively used for joyrides owing to a relaxed regulatory governing mechanism for paragliders.

Hang-Gliding

Hang gliding is an air sport or recreational activity in which a pilot flies a light, non-motorised foot-launched heavier-than-air aircraft called a **hang glider.** It has a triangular shaped wing with a rigid skeleton structure covered by a soft material. Most modern hang gliders are made of an aluminium alloy or composite frame covered with synthetic sailcloth to form a wing. Typically, the pilot is in a harness suspended from the airframe, and controls the aircraft by shifting body weight in opposition to a control frame. Akin to non-motorised or free paragliding, hang gliding is another form of flying where a person gets the feel of being a bird.

Foot Launched Powered Hang-Gliding (FLPHG).

A foot-launched powered hang glider (FLPHG), also called powered harness, or a nanolight aircraft, is a powered hang glider harness with a motor and propeller in pusher configuration. An ordinary hang glider is used for its wing and control frame, and the pilot can foot-launch from a hill or from flat ground, needing a length of about a football field to get airborne, or much less if there is an oncoming breeze and no obstacles. It has a unique mechanism for throttle / accelerator where the pilot controls the acceleration by using a 'bite-switch' wherein

by applying his / her 'bite-force' the motor is accelerated or decelerated. This is used for taking off and landing. During sustained flight the pilot switches the throttling procedure to a duplicate mechanism mounted on the shoulder. An amazing machine to fly indeed…

Flexible Wing Weight Shift Controlled Microlight (Triked Powered Hang Gliding).

A microlight / ultralight trike is a type of powered hang glider where flight control is by weight-shift. These aircraft have a fabric flex-wing from which is suspended a tricycle fuselage driven by an engine in a pusher propeller configuration. The design of the wing is exactly akin to the Hang-glider described earlier, but with a much larger surface area, rendering it unsuitable for foot launched operations. The trike accommodates either a solo pilot, or a pilot and a single passenger. Trikes grant affordable, accessible, and exciting flying, and have been popular since the 1980s. Trikes are classified as microlights / ultralights / light-sport aircraft depending upon their all-up weight and the regulations in a country. The aircraft are also known by other names, including **2-axis-microlights** or **flexible-wing trikes**. In India they are formally recognized by the DGCA as **weight-shift-control microlight aircraft.** The sport has progressed well all over the world and today a variety of advanced Powered Hang Glider Trikes are available for the enthusiasts. **The Indian Army also has a Formation Flying Team having Flexible Wing (PHG) and Fixed Wing Microlight and Light Sport Aircraft.**

Fixed Wing Microlight Flying.

Microlight flying, also referred to as ultralight flying, is an activity where you pilot a lightweight aircraft, usually a one or two-seater with fixed wings. Microlights can fly at speeds ranging between 60 Kmph to 300 Kmph and fly upto altitudes of 15000 feet above sea level. The world record is of a microlight having flown at 20000 feet above mean sea level, though such flights will need special arrangements, safety measures, training and airspace clearances to successfully climb and descend. The maximum number of people it can carry is two and must not weigh more than 450 kilograms. With regular improvements in technology, the capabilities of microlight aircraft become better by the day. In recent years, microlight flights have even gone across the globe. They are sturdily built and guarantee a safe aviation experience. In case of an unexpected engine failure mid-air, the microlights are capable of landing safely due to their glide capabilities because of high-lift wings and low-stall speeds.

Skydiving

Also called freefall, **skydiving** is an activity where a person jumps off an elevated platform – a fixed wing aircraft, a helicopter, a hot air balloon, a cliff, a bridge or a building and falls freely due to gravity. **This activity is the most extreme form of aero adventure sports.** The person uses a parachute to land safely at the end of the freefall. This is done either for recreational or competitive purposes. Skydiving is one of the most popular extreme sports in the world, where the adrenaline rush of high altitudes meets with amazing scenery of the nature. While the idea of free-falling from the sky might seem scary at first, proper training and guidance of experts helps new adventurers of all ages to overcome their fears and undertake this activity safely. Skydiving is thrilling and may even be frightening at first, but overcoming that fear is the biggest step a person takes to accomplish the dream of freefalling. In tandem skydiving, a person is firmly connected to an experienced instructor and no previous experience is necessary. Other forms

A Skydiver carrying the National Flag.

A Triked Paramotor or Para Plane.

of the sport or different related disciplines are

- **Wing Suit Flying –** which involves flying and covering distance by putting on a webbed-suit to enable aerodynamic behaviour and achieve flight before opening the parachute to land safely.
- **BASE Jumping –** BASE is the acronym for Bridge, Antennae, Span and Earth, signifying different fixed objects or platforms from which a skydiver jumps to increase the difficulty level, involves very high levels of training and preparation before undertaking the activity, and is considered the most extreme form of skydiving.

Army Adventure Nodal Centre (Microlight & Powered Hang Gliding), Mhow

I got the opportunity to get airborne for the first time on the 12th of September 1998, as a young officer, when I reported to the Army Adventure Nodal Centre (AANC) (Microlight & PHG), at Mhow, Madhya Pradesh for selection trials for the flying team. *I have thereafter had an amazing journey of growth in the third dimension, from being a basic flyer to becoming an experienced pilot.*

The node started as a Hang-gliding club on 31 March 1982 and was basically meant to give the young officers of Military College of Telecommunications Engineering exposure to Hang Gliding. Late Lieutenant Colonel Biman Saha, SM, VSM was one of the pioneers of this sport in the Indian Army who was the first Chief Flying Instructor (CFI) of the AANC. The 'Microlight and PHG' node is also home to the unique 'Formation Flying Team' of the Indian Army on Microlight and Light Sport aircraft (both fixed wing aircraft and flexible wing aircraft (PHGs)), popularly known as the **"Mountain Eagles".** As members of 'Team Mountain Eagles', we have extensively flown over the Deccan Plateau, the salt pans of Gujarat, deserts of Gujarat and Rajasthan, the plains of Punjab, Haryana and Madhya Pradesh and the hills of Uttarakhand, as a close knit 'Flock of Eagles'.

The team has won many laurels by doing daring activities which are beyond the imagination of a normal flier as vouched for by many seasoned fliers across the country. The 'Team Mountain Eagles' holds many records and firsts to its credit: -

- January 1998 - Longest flight over sea from Car Nicobar to Indira Point covering a distance of 200 Kms.
- October 1998 - Flight at the highest airfield in the world, Leh (climbing to 16,000 feet).
- February 2001 - Airshow at Mumbai as part of the 'International Fleet Review' of the Navy.
- November 2003 – Participation of three aircraft in the 'National Air Race' to commemorate the 100th anniversary of the first manned flight by the Wright Brothers.
- 2005 - Army Inter Command Air Race.
- February 2011 - National Diamond Triangle Expedition with Microlight aircraft and PHGs.
- February 2015 - Six aircraft flew 1800 kms and performed five air shows.
- September 2015 – Expedition to Commemorate Golden Jubilee of Indo-Pak War 1965, with three Microlight aircraft doing Aeroshows along the Western Sector covering 3050 kms.

- February 2016 - Army Microlight Flying Expedition to celebrate the 15th Reunion of Corps of Signals with three spectacular aeroshows and a flight covering 1500 kms in nine days with six aircraft.
- November 2021 – Airshow at Jhansi Fort during "Azadi Ka Amrit Mahotsav".

I consider myself privileged and blessed, that I can fly like a bird and experience the true joys of flight and credit my skill to our 'Guru and Mentor' **Lieutenant Colonel Biman Saha, a Tenzing Norgay National Adventure Award winner (in the Aerosports category)** and the founding father of our prestigious node. The AANC has been through various stages of growth and development to reach where it stands today. *For those of us, privileged to be trained by 'Biman Saha', it has been a mutual journey with the growth of our Team and the AANC.* Having flown for the last 24 years, soaring the skies across the length and breadth of the country, I consider the AANC, Mhow as my home. 'My Node and My Team' occupies a significant place in my heart.

As the adage goes, *"There are Old Pilots and There are Bold Pilots, but, there are no old and bold pilots"*, I am a comfortably 'old pilot' experienced in Microlight and Light Sport Aircraft (both fixed Wing and Flexible Wing (Powered Hang Gliders)) with fond memories and interesting tales of our forays into the realms of third dimension. **Over the years, it has been a 'Unique Distinction' to be associated with the AANC, training two generations of Microlight fliers who have grown in experience and safely fly across the realms of the third dimension, exploring new avenues and charting new paths for the future generations of aero sports enthusiasts.** *The teachings of our "Guru" coupled with the dedicated journey of 'learning and experiences' in flying as team-mates, have helped us become 'adept pilots', now proudly sharing our skills and experiences with the new generations of pilots.*

Parasailing - The most basic aero-sports activity.

The new aerosports policy of the Government is an enabling document and a great step which shall facilitate the large scale development of aerosports in the country, making it amongst the most attractive aerosports destination of the world. **The Indian Armed Forces, have always been and continue to be the catalyst in the initiation and spread of all adventure activities in India and will continue to lead the way in achievement of excellence in all spheres of 'adventure'.**

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Col Mankanwal Jeet

Colonel Mankanwal Jeet, an alumnus of the National Defence Academy, Pune and Indian Military Academy, Dehradun was commissioned in December 1994 in the Corps of Signals. Trained as a Microlight pilot in March 1999, he became an avid adventure sports enthusiast, experienced QFI of Microlight & Light Sport Aircraft (Fixed Wing & Flexible Wing (PHG)) category and an adept Formation Flying Pilot with over 1500 hours of flying experience. He has been the Chief Flying Instructor of AANC (Microlight & PHG). While serving in Army Adventure Wing, Delhi for three years, he has planned and facilitated the functioning of many aero and aqua adventure nodes, and helped in safe conduct of challenging adventure expeditions in the land, aqua and aero domains. He is presently the Officer Commanding AANC (Microlight & PHG) at Mhow.

THE SARANG STORY

Aerobatic Displays are not just an aero sports activity, but is the epitome of professional skills and precision coordination, requiring continuous practice. Undoubtedly, the risks are also very high. A gripping rundown on the development of the Sarang Helicopter Display Team follows.

It was a pleasant winter afternoon in Bengaluru, back in the year 2003. We had just landed back and Wing Commander Hari Nair, the Commanding Officer (CO) had been summoned to the Briefing Room at Air Force Station, Yelahanka. There was a pin-drop silence in the room. Even the gentle breeze that had been wafting around outside, paused in fearful anticipation.

Air Chief Marshal S Krishnaswamy (Kitcha Sir), the Chief of Air Staff, fixed a basilisk-like gaze on the CO, with an intensity that would put any self-respecting laser beam to shame. He started his de-brief on a soft note, with biting sarcasm that made it sound even more ominous, *"So you call that flying? What sort of a display was that?"* And lots more...

Through the corner of his eyes, Hari could see his boss, then Air Cmde Anil Chopra (Chopy), the Commandant, Aircraft Systems and Testing Establishment (ASTE) had stopped breathing a while ago and

Echelon formation UK 2008

was gradually turning shades from pink to purple, chest up. He could also see the Air Officer Commanding Yelahanka stone-faced, motionless and staring straight ahead to infinity. With that complimentary preface done, Kitcha Sir then launched into the detailed de-brief.

Hari was the CO of 151 Helicopter Unit, the fledging helicopter display team **"Sarang"**, with the newly inducted Mk-1 Advanced Light Helicopters (ALHs). Obviously, we were not finding our pace and definitely not hitting any sweet spots. Kitcha Sir, to put it mildly, was getting impatient.

Six months earlier, Hari had been briefed and tasked by the Assistant Chief of Air Staff (Projects) at Air Headquarters (HQ), to form a helicopter aerobatic display team, using the assets of the ALH Evaluation Flight (AEF). That grand total included the only two ALHs in the Indian Air Force (IAF) inventory painted in drab grey, four officers (two aircrew, two technical) and a handful of technical staff. Out on the tarmac at ASTE, where these aircraft were then located, the new CO stared at the ALHs and then at the officers and men, who stared right back, in mutual mild confusion.

The scope of the task then, was a veritable blank canvas, which meant that it could cut both ways. We had been given maximum flexibility as well as full institutional support (including from Hindustan Aeronautics Ltd (HAL)) to get going and get it right. On the flip side, if we got it totally wrong, the CO then had for himself, a nice leap over the proverbial cliff-edge.

The ALH is not your regular neighbourhood helicopter. Its hinge-less rotors give it amazing agility as well as control power. Coupled with two quick-response turboshaft engines with Full Authority Digital Engine Control (FADEC), it can, in experienced hands, do crisp, extreme manoeuvres with effortless ease. Manoeuvres mostly unheard of in the world of staid and placid conventional helicopter flying, which if attempted there, would possibly result in an ignominious hara-kiri.

However, the ALH at that time, was still in the realm of Test Pilots and a largely unknown animal to the IAF. Also, the Sarang had just two of these. The challenge was to break-in the newly posted line pilots from conventional helicopters. Also, the Mk-1 ALHs with the Sarang were initial Limited Series Production (LSP) and the aircraft had not matured. The LSPs, in those initial days were very glitch-prone and aircrew had to be absolutely thorough in their knowledge of its systems, to cope with almost daily in-flight emergencies. Since there was no regular Type Training School for the ALH, the pilots spent long hours atop the maintenance stands in the hangar, taking notes as the two Engineering Officers, then Wing Commanders Arun Kumar and Saurabh Deokuliar conducted impromptu classes and familiarised them with the innards of the beast. HAL designers were also extremely forthcoming and helped out with detailed notes and took time to patiently resolve the numerous queries from the technical staff and aircrew.

We looked up to the famous Surya Kiran Aerobatic Team for advice. Then Wing Commander S Prabhakaran ('Prabs'), Hari's course-mate was commanding the squadron. *"It's about understanding the perspective, what looks good to the audience and how well you show case it"*. Those succinct words of sage advice rang in his ears as he watched Prabs and his team carry out their practise display under the azure skies of Bidar, their shiny, contrast-painted aeroplanes flying in impossibly tight formation with the natural elegance of jets, leaving colourful smoke trails and

Sarang Team at the Asian Aerospace Air Show, Changi Airport, Singapore, February 2004.

Sarang Team in action during Aero India Show, Bengaluru, 03 February 2021.

commanding the presence of an entire hemisphere of the sky.

We built up our fleet of Mk-1 ALHs and slogged it out to train. We learnt that the hinge-less rotors of the ALH gave us its double benefits of good control power as well as crisp response. Which meant we could maintain good formation. Those stubby rotors also meant that we could tuck in closer. How much closer? Close enough for the lead pilot to always register in his peripheral view, the flickering black-and-white painted rotor discs of his echelon members. Were we cutting corners on safety? Well, we were forming a display team showcasing the talents of our Air Force, as other teams do worldwide, for their air forces and their countries. As with others, we found the knife-edge line between bringing the 'zing' factor to the display and staying relatively safe.

The ALH also has strong inter-axis response coupling. That is the basic nature of such a rotor. An initial input given by the pilot results in an expected response by the aircraft. However, that initial response will then result in an unwanted secondary response on another axis. This happens with any input and the cross-coupling is far stronger than in a conventional rotor helicopter. Whereas the on-board twin channel digital Automatic Flight Control System makes it mostly smooth, it is still a very high-workload task to get the helicopters to fly in a steady and tight display formation.

The view from the cockpit of a Sarang formation member is the lead ALH, rock steady as a picture painted on the cockpit Perspex, while the horizon appears to bank and pitch, as the lead moves the formation into the manoeuvres. There is only clipped radio chatter between the members, pre-rehearsed and kept to the bare minimum. A sharp call from the leader, the formation then breaks into a dynamic swirl of white smoke and contrast painted rotors. The formation members see the lead suddenly standing on his tail for a moment before disappearing above. The other pilots instantly apply controls to make their ALHs 'break' to the right and left in hard, vertically banked turns. Extreme head and eye-ball swivelling results in every cockpit, with each pilot maintaining visual contact with others, while controlling their own aircraft and re-grouping for the next manoeuvre. The practise sessions honed the skills of every pilot and as we went on, we learnt to anticipate each other's moves and finally, it was as if the whole formation was connected by a single neural network.

It was early morning in mid-February 2004 and the silence of the humid air at Paya Lebar Air Base, Singapore was broken by the characteristic rumble of ALH rotors as the Sarang Team took off in tight formation. The Chief Operations Officer of the base watched anxiously as the Sarang ALHs flew their first practice display there, trailing white smoke with the brilliantly coloured red, white and gold paint glinting in the morning sun. He was not confident of us Indians with our new-fangled home-built helicopters flying in formation, especially since there had been a major recent accident of a US helicopter at his base, with significant collateral damage to the parked aircraft. He had made his opinion very clear to the CO and had initially placed restrictions on our flying. However, as he monitored the repeated practice displays, his anxiety levels waned and we were given due freedom to operate.

The Sarang's debut public display was on 24 February 2004, at the Asian Aerospace Air Show at Changi Airport, Singapore. The display

area was over the hot, humid and very hazy sea of the Singapore Straits next to a jetty and it was not easy maintaining line and symmetry. To make matters more interesting, the on-board radio sets (an initial temporary fitment) were capricious and insisted on failing during head-on manoeuvres, when two or more team members were on reciprocal head-on fly-bys that required the critical radio call to initiate the symmetrical pull-up in front of the dais. This is where the 'single neural network' kicked in, almost every day, and other members anticipated and pulled-up without receiving the radio call, just as they saw the nose of the reciprocal lead rotate up.

"No debrief points for Sarang; B-1 crew to stay back", the curt words of the FCC (Flying Control Committee) member concluded the debrief session after our debut display. We had sailed through and had not crossed the 'foul line' or gone under the minimum specified height during any manoeuvre. But what about the US B-1 crew, looking perplexed? It turned out that the big supersonic bomber, although accustomed to carrying out pin point strikes in Afghanistan from their base far away in Diego Garcia, had actually carried out their entire display over a different jetty a fair distance away from the designated one!

It was early October 2004 and the Air-I, HQ Western Air Command had just concluded his de-brief of the first practice session for the forthcoming Air Force Day flypast and display. As he walked past the standing officers, he paused briefly next to CO Sarang and said with a slight smile, *"You fellas almost gave us a heart attack...."* He then walked on without offering details. A puzzled Hari asked Saurabh, who also doubled as the team's commentator. Saurabh explained that the opening manoeuvre – a near vertical dive of the lead ALH facing the dais from a hover - looked so menacing that spectators on the ground scattered and ran for cover. We had added some interesting manoeuvres and had polished our routine. The effects, although safe, appeared dramatic, especially since this was the very first time most had witnessed the crisp and dramatic, low-level manoeuvres of the Sarang ALHs. We were now finding our pace and hitting the sweet spot.

The Chief Jurist, a retired Lieutenant Colonel and erstwhile CO of the French aerobatic team - Patrouille de France sat with his fellow panellists, all either current or ex-display pilots, on the extended centre line at Al Ain Airbase, Abu Dhabi. There were two more ex-display pilots seated on either side of the 'no-go' or 'foul line'. It was the 21st FAI World Grand Prix, January 2005. The Federation Aeronautique Internationale, the world's air sports federation was evaluating all displays from 25 to 28 January 05. The participating teams were forewarned that the judges' call was final and there was no appeal, whatsoever. The Jurists watched the Sarang Team go through the display routine every day and graded us third amongst the 10 competing aerobatic teams participating from various countries. The final score sheet of the first five teams were:

1. Morocco 'La Marche Verte' (props - CAP 232s) - 39,455.
2. Jordan Royal Falcons (props - Extra 300s) – 39,305.
3. India Sarang (ALHs) – 38,780.
4. Saudi Hawks (jets - Hawk 65s) – 38,710.
5. Matadors - UK (props - Su-26s) – 38,525.

"You are twenty feet below assigned altitude", the heavily accented and clipped voice of the German controller came across sharply on the radio. It was 3rd June 2008 and we had just concluded a very successful display at Berlin Air Show, ILA 08. The CO, Wing Commander Sashank Misra was leading the Sarang team of five ALHs on our very eventful ferry through the

Sarang Helicopters fly over Lincolnshire, UK in 2008.

Initial 3 aircraft display-2004

unpredictable European weather, from Berlin to London via Dortmund and Brussels. The Mk-I ALHs with the Sarang were early Limited Series Production models and did not have ILS (Instrument Landing System), unlike the later Mk-IIIs. So, it was essentially a mix of visual and instrument flying coupled with 'non-precision' approach and landings, which meant Eyeball Mk-1 only, during the final approach to landing. The German controllers kept a hawk's eye on this very unusual **"Sarang"** helicopter formation, and meticulously pointed out every little deviation. The ferry legs from Berlin to Brussels were in and out of low clouds and rain and we took off in misty conditions from Brussels for Biggin Hill, UK.

We flew under the dark, rain-laden low clouds of the English Channel, tendrils of which were reaching down to our rotors. The horizon, initially clear got muggier and hazy and was then lost in the dark mist. The sky and the sea of the Channel soon merged into a single gray as we flew across in visual formation. Sashank ordered us low over the sea and we briefly spotted the Royal Navy ship positioned on our flight route as a safety back-up. Patkar, No. 3 in the formation, then spotted a brief opening in the clouds and the formation pulled through. Soon, we saw the chalk-white cliffs of Dover flash past under us through the clouds as we crossed the coast. The famed English weather however, had not done with us yet.

Biggin Hill reported poor visibility in drizzle turning to rain with low clouds. The weather was clamping down fast. The Sarang raced across the countryside on their final leg and Sashank aligned the formation on finals to the runway in a 'non-precision' approach as the visibility deteriorated further. Patkar's ALH entered a stray tendril of low cloud. He lost contact with the formation and pulled up into the clouds to a safe altitude. Our Air Attaché in UK was already in the Air Traffic Control tower, assisting with radio calls. We sighted the runway very late and Sashank then chose to land the formation on the reciprocal runway. Patkar descended, broke clouds and landed after all the others. As they switched off and the rotors wound to a stop, the skies dissolved into a cold, dark grey curtain, with incessant pouring rain. It was a typical, cheerful English summer afternoon! The Sarang went on to fly a consecutive back-to-back series of successful displays at Biggin Hill, followed by the Waddington Air Show, Lincolnshire, the Royal International Air Tattoo, Fairford and culminating in the Farnborough Air Show, London in July 2008.

For Sarang, it is not always about displays and formation flying. Wing Commander Ravi Pathak, the CO was writing out the debrief points for the display practice the next morning. It was evening in late June 2013 and the team had positioned at Dundigal for the display on Graduation Day Parade of Air Force Academy on 22nd June. The phone rang and the instructions that followed from Air HQ completely changed their trajectory. Flight Commander Negi, deputy Shailu Pandey and Senior Technical Officer Puri, worked late into the night to coordinate the new task.

They were airborne by first light the next day for disaster relief operations at Uttarakhand. They were amongst the first on the scene - a shattered landscape that had wreaked utter devastation on the people. Ravi recalls the kaleidoscope of memories of the numerous rescue sorties, including scenes of heart-wrenching tragedies on the ground

they witnessed. This was in sharp contrast to the precise, almost ethereal world of formation display flying, which appeared to be in another universe. Ravi proudly recalls that they did their duty in the rescue efforts and also proved their point that they are committed to all operational tasks, in addition to showcasing formation display flying skills.

Wing Commander Girish Komar, CO Sarang gave the radio call to follow as he led the formation in a graceful, banking turn. It was a bright, cheery day with picture perfect blue skies and little white clouds, the emerald sea sparkling beyond the west coast of Port Louis. It was early March, 2018 and we were flying over Mauritius on our first practice for their National Day with our President scheduled as their Chief Guest. Girish rolled out of the turn following the on-board navigation which was supposed to be pointing towards the stadium at Champ de Mars, the display area. He scanned the area ahead and to his surprise, the navigation system was, instead taking us towards the sea. He looked to the right and spotted the forested, sharp ridge line and turned towards it, ignoring the on-board navigation. He then spotted the stadium and led them into the practice. The little mystery was later solved after landing back. They were of course, in a different hemisphere of the south and the on-board navigation required a change in its setting. They addressed the glitch and went on to fly the display on their National Day 12th March and followed up with two more good displays on the island.

The French slogan 'Lame de Lame', was flashed on their giant LED screens as we flew our trademark manoeuvres. Translated, it means – **'Blade- Blade'**. Deceptively simple, yet it epitomises very aptly and, in many ways, the Sarang Display Team of the IAF.

The Sarang Split - Oct 2004

(with inputs from: Air Commodore Sashank Misra, VM (Retd), Group Captain Ravi Pathak, VM, Wing Commander Girish Komar, VM)

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Group Captain Hari Nair

Gp Capt Hari Nair VM (Retd), an alumnus of the National Defence Academy (63rd Course), was commissioned in the IAF in 1983 in the helicopter stream. He qualified as an Experimental Test Pilot in the IAF in 1992 and graduated from the Defence Services Staff College, Wellington in 1996. He flew the initial Dhruv (ALH) prototypes since 1992. He was the Flight Commander of a helicopter unit operating in the Northern Sector and commanded a helicopter unit in the Western Sector. He formed and commanded the first IAF Dhruv (ALH) unit, the Sarang Display Team during 2003-05.He then served as Chief Operations Officer, at an IAF base. He joined Flight Operations, HAL in 2009 and was the project pilot for the Light Combat Helicopter, responsible for its Man Machine Interface, expansion of its flight envelop, performance, basic stability, and handling. He has 8000 hours of accident or incident-free flying

JUMPING...
DEFINITELY NOT TO CONCLUSION

Skydiving is an exhilarating event, initially you hurtle down and then glide like a birdman to the designated landing spot. But there are perils too, like in many adventure sports. A first person account of such an experience.

A skydiving demonstration in September 1988 was a humbling experience for me as a member of *Akashganga,* the Skydiving Team of the Indian Air Force (IAF). It was a matter of rare honour to jump and land into the Nehru Stadium, New Delhi during the Pre-Olympic Trial Games to cheer up our sportspersons headed for the Seoul Games later that month. On bailing out of a MI-17 helicopter, the Stadium—with its maroon race track, brightly coloured PVC seats, fluttering flags, ribbons, and buntings—looked like a bouquet of flowers. It was packed to capacity with euphoric spectators. We, the jumpers could hear their cheering a thousand feet above the ground as we manoeuvred our parachutes to land in their midst. The gaiety of the occasion was an integral part of *Akashganga* demonstrations. But what followed that day was something unprecedented for me.

I was bundling up my parachute after landing on a predesignated part of the track when a young mother—with a child she was barely able to lift, and an older boy in tow—managed to slip past the security cordon, and staggered towards me. *"Sir, please… my son wants to touch you,"* she urged and, before I could realise what was happening, put the little one down and stretched his hand to enable him to touch me, and feel my parachute.

"You said you wanted to touch the uncle who jumped from the helicopter… here he is…," she said to the child as she pulled the

The Aerial Tri Colour

elder boy who was a bit hesitant, and made him follow suit. *"See uncle is like us… he is not different,"* she added excitedly as she encouraged the two youngsters to feel my overall clad arms and shoulders. Then pointing at the younger boy, she said to me, *"My little one thought you people are gods descending from heaven… he wanted to touch you and have a close look at your parachute. It's indeed a big day for my kids. This event will remain etched in their minds forever."*

I was overwhelmed.

All this happened in less than a minute. The mother didn't argue with the security personnel who had followed her to shepherd the family away. Having accomplished their mission, the three prepared to leave. And, even as the lady took the boys away, the older one managed to say with all the confidence he had mustered in the minute gone by: *"Uncle, what if your parachute had not opened?"* Although I told the curious child that I was carrying a reserve parachute to provide for that contingency, his question kept ringing in my mind for a few days before it was consigned to the less accessed recesses of my brain.

Whipping open a reserve parachute in case of a total failure of the main parachute, is a standard drill all jumpers practice before emplaning an aircraft for a jump. I had gone through that mock exercise before each of the hundreds of jumps I had carried out. In the process I had begun believing that opening a reserve parachute, if and when need arose, would be a reflex action. It's a different matter though, that the thought of my parachute really failing never crossed my mind.

Not too far in the future, I would recall my interaction with the boy, and his innocent question, with a sense of *déjà vu*.

It happened about a month and a half later when I had almost forgotten the Nehru Stadium incident. It was yet another *Akashganga* demonstration; this time at Air Force Station Ambala. An AN-32 aircraft with our team on board, was cruising at 225 kmph, 6,000 feet above the ground. The team leader gave thumbs up––the universal sign conveying readiness—when the aircraft was over the spectator-stand. He opened the barrier at the aft end of the aircraft and roared, **"Go!"** On that command, the team members jumped out of the aircraft one after the other in quick succession. Being the lightest, I exited the aircraft last. Within seconds, we reached our terminal velocities and were falling at 120 - 200 feet per second. We had been assigned different (staggered) parachute opening heights to avoid a melee at the time of landing on the target - a circle of 15 metres diameter facing the enthusiastic crowd.

The *Strato Cloud* parachute I was jumping with, had an aerofoil-shaped canopy. Once deployed, it behaved like a glider. Rather than descending vertically, it glided with a good glide ratio of 1:3. Simply put, it moved forward three feet for every foot of descent. It could reach airspeeds of 40-50 kmph. Its manoeuvrability and high sensitivity to controls enabled experienced jumpers to execute pinpoint landings. They used to say: *"With deft handling of the control lines, one can land on a target as small as a lady's kerchief."* Miscalculation, on the other hand, could lead to serious injuries.

The spectators looked skywards and counted the jumpers who popped out of the aircraft like tiny pebbles. They held their breath waiting for the parachutes to open. The jumpers falling below me deployed their parachutes at their assigned heights. I too threw away my *pilot chute*—a small parachute which initiates the opening sequence of the main parachute. In a second and a half, my parachute was filled with air. And then began an ordeal, the memory of which, even today, sends a chill down my spine.

The suspension lines on one side

Free Fall

Leap of Faith

of my parachute were jumbled up and the canopy was badly deformed. The partially deployed parachute began turning to the right. My efforts to untangle the suspension lines were in vain. In a few seconds, the turns became vicious; I was hurled like a stone at the end of a sling and spiralling down at a tremendous speed. I pulled down the lines to stop the turns. Thanks to the gruelling training sessions under Sergeant R Singh, I had developed strong arms to deal with such situations. My effort met with partial success. The turns slowed down to a stop (almost) but now the parachute headed for an incipient stall—a condition in which there could be a sudden loss of height (40 to 50 feet). Holding on to the lines would certainly result in a stall. I was at 4500 feet above the ground; a stall at that height would cause me no harm. But a stall close to the ground would be disastrous. I recalled with horror, an accident involving Warrant Officer Augustine who had been sentenced to the confines of a wheel chair for life due to a heavy landing.

There was a surge of adrenaline and yet my mind went on several quick errands. I was reminded of Mudit, our son, eliciting a promise from me while bidding me bye that morning to make a paper bird for him that could flap its wings. Let alone giving him lessons in origami, I wondered if I would live to see him again. Then I recalled Squadron Leader (later Air Vice Marshal) Ajgaonkar's ordeal a year or so earlier. In a similar emergency, he had promptly deployed his reserve parachute and landed safely. *"Never Say Die"* was the gospel he had passed on to us. *"Am I in the same situation?"* I began comparing. *"His was a high-speed emergency—total failure of the main parachute. I was faced with a slow speed emergency; I had, at least, a partially functioning parachute over my head. What if I jettisoned the malfunctioning main parachute and the reserve parachute did not open?"*

That must-be-avoided-at-all-costs conversation with my own self had a numbing effect.

Mudit…origami…Augustine in wheelchair…Ajgaonkar….Had time coagulated? No, it was an illusion. Time, and height above the ground, the two most precious commodities for me were fast running out. The impartiality of the earth's gravity was evident in the rate at which the unwinding needle of my altimeter was sweeping the face of the instrument.

"Should I risk a stall with a deformed main canopy, or jettison it and depend on the reserve parachute for a safe landing?" The dilemma was damning. I was a mere 2500 feet above the ground and approaching it at a breakneck speed. I was left with a few precious seconds in which, to decide and cram deliberate action on which would depend my survival, and the safety of my limbs. I pulled down my goggles, which had got fogged due to excessive sweating.

Suddenly everything became tranquil, and clear. Reason booted out all the silly thoughts from my head. There was no basis for assuming the possibility of failure of the reserve parachute. It had been packed by the most proficient hands and overseen by the most careful eyes; those of the skilled and conscientious Safety Equipment Workersof the Paratroopers' Training School.

And then…

I took the most vital decision—the decision to jettison the main parachute and go for the reserve parachute. A tug at the cutaway handle got me rid of the malfunctioning main canopy. With Newton's Law of

Gravitation at work, I went hurtling down approaching Mother Earth at a very high speed, and accelerating. Then, without further delay, I pulled the ripcord handle of the reserve parachute. The sight of a fully deployed white canopy was a great relief.

When the parachute opened, I was 2,000 feet above the ground level—just about sufficient height to manage an accurate landing. Joy rioted in my heart; the wind with prankish flurry caused the stabiliser of the parachute to flap rhythmically. Its flutter was music to my ears. Since I had lost sufficient height, I executed a tight circuit and homed on to the landing area. I felt victorious and exhausted when I touched down softly on the target.

As I removed my helmet and unfastened the parachute harness, I realised that the usual enthusiasm, and the frolicking associated with an *Akashganga* display, was conspicuously missing. In its place was a lingering melancholy. The main canopy that I had jettisoned a while ago had fallen a mile away from the spectators. They had taken it to be a case of a total failure of the parachute and had feared a fatal accident. Concern for the safety of the unknown skydiver had cast a shadow of gloom. They heaved a sigh of relief.

In the flight back from Ambala, I went through the day's events. I also recalled my interaction with the little boy in Nehru Stadium: *"Uncle, what if, your parachute had not opened?"* Even in solitude, that thought registered a smile on my face. Then, mind flew way ahead of the aircraft, to my family in Agra. *"How would I disclose the incident to my wife without causing anxiety?"* I contemplated.

At home, Chhaya was awaiting me at lunch with a plate of Russian Salad and her usual welcome hug. Having been a parachute jumper herself, she took the incident in her stride. I devoured the sumptuous lunch and was off for another Skydiving Demonstration in Agra that very afternoon.

A Perfect 'O'

That much to answer my little fan's question about parachute failure.

Parachuting today, is indeed as safe as safe can be - it is safer than crossing roads in Delhi. But then, there's another curious question people sometimes pose: *"What if the reserve parachute also fails?"* Wing Commander AK Singh, a colleague veteran Parachute Jump Instructor has an answer: **"If your main parachute fails and the reserve also does not open, then you are jumping to C-O-N-C-L-U-S-I-O-N."**

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Group Captain Ashok K Chordia (Retd), a veteran Parachute Jump Instructor and founding member of Akashganga, is now an acclaimed author and an award-winning film story writer. He was the Episode Consultant for a documentary on Operation Cactus made by Discovery Channel based on his well-researched book: "Operation Cactus: Anatomy of one of India's Most Daring Military Operations." He posts short stories and articles on his blog: Road Much Travelled (www.akchordia.com). One of his short stories, The Shoeshine Boy was made into a short film which has bagged two International Film Awards. Another of his short stories, Please Share it with Victor One has been made into a short film and is vying for awards at two International Film Festivals. He holds the Limca Book Record for a rare parachuting achievement.

Group Captain Ashok K Chordia

MANIPUR PARIKRAMA:

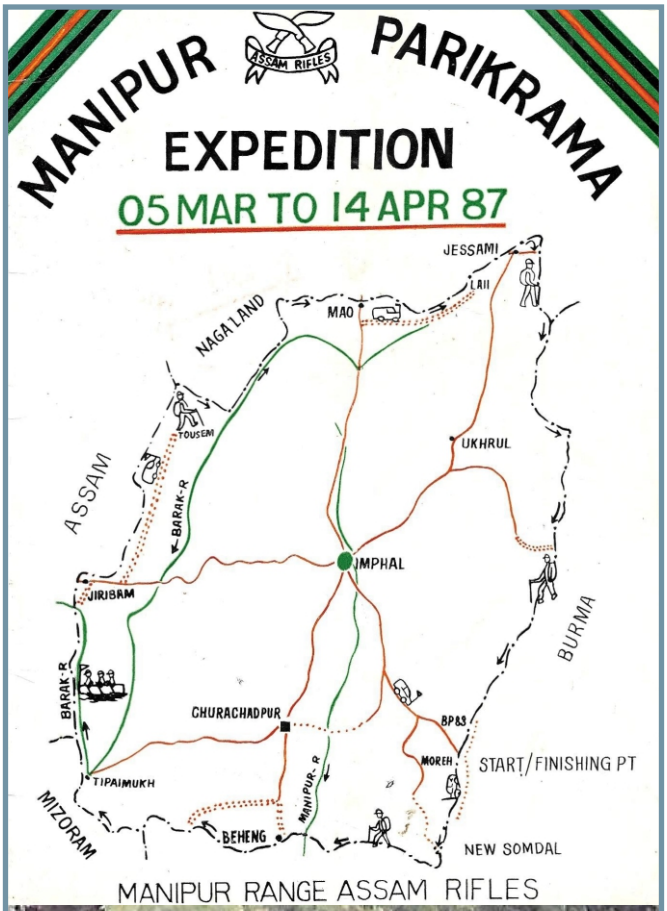
A JUNGLE JOURNEY OF SIX WEEKS

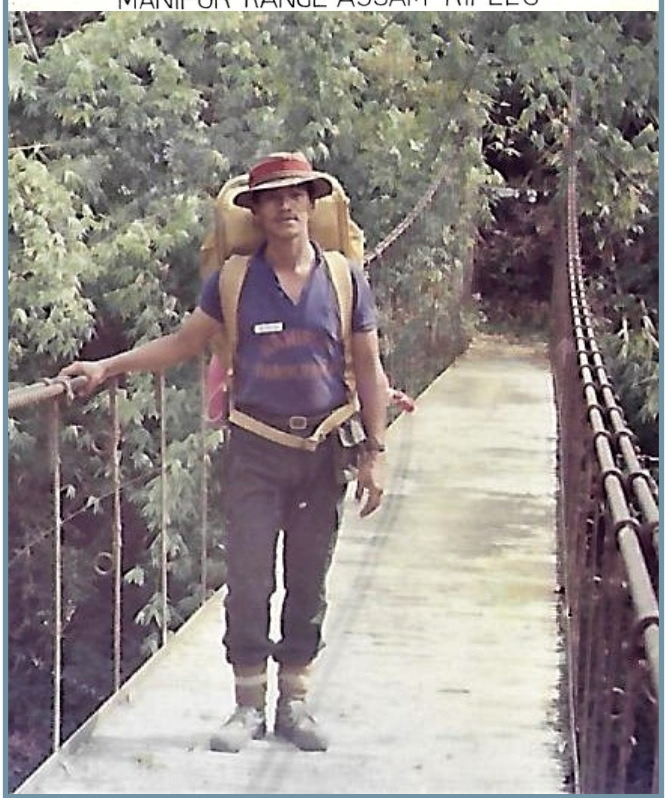
There are many lesser seen and known exotic spots in India, especially in the Northeast, where difficult terrain has resulted in many inaccessible places. A walk through such areas is indeed an adventure, often considered the elixir of life. A Mike Papa Expedition in 1987 is described hereafter.

"What is life but one grand adventure" – William Shakespeare

Three & a half decades back, on Thursday the 5th March 1987, a heterogeneous group of 42 excited adventure enthusiasts, were flagged off from the historical grounds of the **Kangla, Imphal.** The 4th Assam Rifles Battalion and the Headquarters (HQ) of Assam Rifles Manipur Range were located here then. This motley 'Band of Brothers', consisted of 24 Officers and soldiers including four Assam Rifles Doctors and Captain AK Pal from the Army Dental Corps, (later Major General), five professors / scientists from the DM College Manipur, eight members from Manipur Adventure & Allied Sports Institute (MAASI), two students from Sainik School Imphal, one enthusiast from Manipur Agriculture Department and two policemen from the State Armed Police of 7th Manipur Rifles. I, Captain Lourembam Manongba of 4th Assam Rifles (now an Indian Army Veteran), was earmarked to lead the Unique Team onto its sojourn – **"The Quest for Knowledge of the Unknown"**.

How did this exciting adventure come about? Manipur is blessed with an exciting blend of terrain that can be an intoxicating brew for nature lovers. This earned the state its sobriquet – 'Little Paradise of the East'. Concurrently, for many, it may be the – *'Takane No Hana' - "flower on a high peak"*, beautiful but out of one's reach.





Upper Image. Map of Manipur Parikrama Expedition.
Lower Image. The author walking over a rope suspension bridge.

Much is known about the 10 per cent valley area of Manipur's 22327 square kms geographical spread. However, explorers have rarely ventured into the peripherals of the state. **'Gazetteer of Manipur', by Captain E W Dun** published in 1886, gives a detailed account of Manipur - the geography, its people, natural history, agriculture etc. A decade later in 1896, **'Manipur & the Naga Hills' by Major General Sir James Johnston, KCSI,** gives a further account of this mesmerising landscape and its intriguing people. These men probably spent days and months traversing miles of hostile and unknown territories; scribbling onto a diary about each day's observations and finally compiling them into these reference books of today.

Brigadier BN Singh of HQs Assam Rifles Manipur Range (9 Sector), under the guidance of Major General PL Kukrety, SM, General Officer Commanding 'M Sector', had chalked out a plan to send a team of adventurers, all along the periphery of the state – covering a distance of approximately 1100 to 1300 kms as shown in the topographical military map. The team had to be self-contained for food and rations, four to five days at a stretch. It meant, each team member, irrespective of age, rank or training had to haul and cart his back pack of almost 15 to 25 kg. The Assam Rifles soldiers also had to take turns in helping the two signallers, carrying HF Radio Sets & its accessories. These two signallers were responsible for remaining in touch with the world beyond. After all, the 1980's were dangerous and high risk times of insurgent activities. This RS LHP 219 with a sky wave range of 250 kms had to be carried man pack for the entire expedition. The unassuming weight of eight kgs was monstrous for the two signallers, who did an excellent job for those 40 days of climbs and walks in the forest and jungles. This was the only piece of military Ordnance that we carried to keep the HQs at Kangla aware of our whereabouts and wellbeing. **The Call sign of the backpack HF Wireless Radio station was "Mike Papa". It sticks even today when some of us members meet - "Hi, this is Captain Mike-Papa calling. How has the last 35 years been?"**

A Thousand and Three Hundred Kilometres Trek

We were flagged off on 05 March 1987 from Kangla Fort, Imphal by the Chief Secretary of Manipur and Brigadier BN Singh, Commander of HQs 9 Sector. The start point for the Parikrama was Moreh, on the Indo-Myanmar Border, and we drove to Moreh. On 6th March, Major General PL Kukrety, SM, General Officer Commanding 'M Sector' flagged us off from Moreh. That day we travelled from Molcham Village on the old **BP 33** *(This settlement is often in the news for intrusions by Myanmar's Army)* to New Samtal at old **BP 35 / 36** (the South East corner of Manipur). For the next two weeks, we trudged through jungles along the unexplored Southern boundary of the State (Indo Myanmar / Manipur / Mizoram border region), criss crossing 200 kms of hills from 730 to 1700 metres to a low of 35 metres and reached Tuivaimukh on 19 March.

Rafting Astride 'One and a Half Thousand Bamboos'. We had reached the South Western corner of the State and had to now row along the Barak River Northward to Jiribam, in rafts - River rafting through a turbulent stretch. We prepared two rafts of 20 feet by 12 feet each, with an approximate load capacity for 20 men with battle loads. 1500 bamboos were lashed into 12 bundles of 125 each to make the two rafts. The two rafts were connected to form a 40 feet long home for the 42 member team for the 48 hours of rafting down the mighty Barak River. The speed of the 'Bamboo Flotilla' varied between 1.5 to 3 knots.

The Mike Papa Team rafting down the Barak River.

A Water mill along the Manipur- Myanmar Border.

The most edgy moment was when 42 men on the float waited for 10 seconds of suspense, just before the 1500 bamboo raft hit a pile of bamboo spiked onto the centre of the riverbed. We had no time to pray; my instructions to the team were "Squat Low, hold onto nylon lashings of the raft". We scraped through and found the rectangular raft reshaped into a rhomboid or a trapezium! We reached Baurikhal near Jiribam – the Western Gate of the State on 23 March 1987.

The Western Tracts of the Zeliangs – Liangmeis - Rongmeis. This is one of the least visited part of the state. We left Jiribam on 24 March and moved Northward to Tousem, New Khunpung and Mao. We had to cross the Makru and Barak Rivers (big rivers) multiple times. Many villages including New Khunpung still followed the 'barter system' of trade. We had a memorable grand reception by the villagers of New Khunpung. The team will always cherish the special *"Thabal Chongba"* (moonlit night dance of Meiteis), which was held in the headlights of the Jongas and Jeeps of DIG Assam Rifles' convoy.

The Paomeis and Beyond. On 01 April, we drove from Mao through Laii, where the Barak River originates to Jessami, the only Angami village in Manipur. The villagers of Jessami still celebrate the Raising day of Assam Regiment due to their association with the Rhinos. In the Second World War, when the invasion of India by Japan was imminent, the regiment was moved to Jessami and Kharasom to delay the advance of the Japanese 31st Division. The young regiment soon proved its capabilities within three years of its raising, at the consecutive battles of Jessami and Kohima.

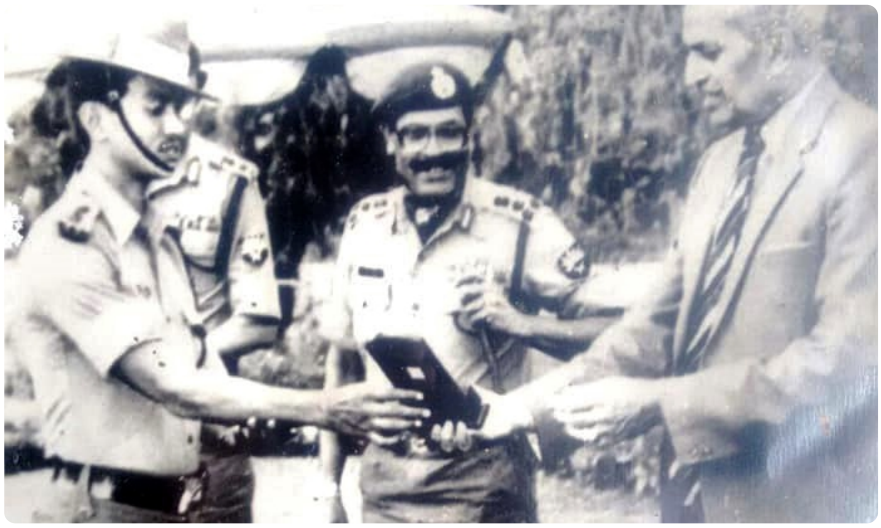
Through the Land of the Hardy Tangkhuls. We left Jessami on 3rd April and moved through Lacho / Kharasom along the Chamu River to Molvailup, arriving there on 9th April. This remote North Eastern corner of Manipur had a mix of Tangkhuls and Khongjais (Kukis) villages, where many years later unfortunate allegations and episodes of forced vacation of Kukis took place due to Naga rebel actions. During our trek we saw that the elders sported body / face tattoos as a norm.

The Final Lap - "Kabaw Valley View." In the final lap from 10th to 14th April, we trekked from Molvailup to Moreh. This area is a favourite transit point for many going across "Ango Ranges" to Homalin (probably far beyond for many unaccounted purposes). The **Kabaw Valley** is often a topic of discontentment for the radical Manipuris, and is famous for the best Burmese Teak. At Humine Phaikot / Kongal Thana on the Northern edge of the Kabaw valley, the Namya Dung divides the village. Water mills with undershot water wheels were being used to pound rice and corn and Brine wells still existed and were operational. This part of the expedition was the most exasperating with unbearable heat, frequent malaria and five days of zero ration supply. In the last 60 kms, we crisscrossed the numerous tributaries of the Yu River system.

A tragic story. Near Asang Khullen at Choro village, 'Piba Tangkhul', the 80 year old headman was a tall and handsome man who could narrate stories about their association with erstwhile Meitei Kings. The infamous insurgent leader of the People's Liberation Army Manipur (PLA Manipur), N Bisheshwar Singh and his band of approximately 400 to 500 rebels had established their HQ in the nearby

hills. Piba Tangkhul's son, a sub inspector of Manipur Police was one of the first victims of PLA Manipur's violent killings after September 1978.

Moreh. On 14 April 1987, we returned to our start point at Moreh. The twin border towns of Moreh and Tamu on the Indo Myanmar border have been the famously notorious Eastern Gates. Forever attractive, and ever ignominious, the border towns are a favourite cauldron of a dangerous 'Witches Brew' and cocktail of all that can be evil. Yet, it remains the most lucrative place for those associated with the complexities of this Gordian Knot of Manipur.



The Expedition Leader (the author) receiving a memento from General KV Krishna Rao (Retd), the then Governor of Manipur on 20 April 1987 at Raj Bhavan, Imphal.

Challenges Galore

Physical challenges for a young Captain at the peak of his fitness were minimal. Leading the 18 soldiers (three officers and 15 Jawans) into expeditions of this nature was even easier. The big challenge was in *"motivating & taking a group of professors, Doctors & young adventurous boys, who had never been exposed to this kind of 1300 kms of rugged walk in the hills of Manipur."* Taking along the heterogeneous group of 42 was a test of leadership and man management. Meeting the deadline of reaching Moreh on 14 April 1987 (the auspicious day of Baisakhi), was a tough mission. The Sri Guru Singh Gurdwara Sahib, Moreh Town had arranged Guru ka Langar for the team.

Walking the Talk for 1300 kms. These were and still are, unexplored trails, with no travel records, except those few by the British officers. Only two men from Manipur had travelled extensively into the hinterlands - Captain (Maharaj Kumar) Priyobrata Singh and his friend Major Ralengnao Kathing, MBE, MC. We, the Mike Papa team members, are possibly the few rare persons who have seen so much of Manipur's periphery. Some of our team members are no more, as part of life's journey. The few of us alive today can narrate this adventure and lifetime experience and keep the story alive.

"Fill your life with adventures; Not with things. Have stories to share; Not stuff to show." We shall all, one day, be able to sit besides the mellowed warmth of a fireplace, with our ever inquisitive grandchildren, to tell the stories of our lives' adventures.

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Lieutenant Colonel L Manongba (Retd) was commissioned into 6/ 11 GR on 07 June 1980, and took premature retirement in November 2003. In his second innings he was witness to epochal events, where he saw the birth of a new nation, i.e. South Sudan. At that time he was working as General Manager of a Petroleum Company in South Sudan. He was elected as an Executive Member of the 1st Commercial Association of South Sudan (Petroleum Association of South Sudan). He is presently in the forefront of ESM activities in Manipur.

Lt Col L Manongba

COME ON CADETS

- CLIMB, SOAR AND SAIL

An overview of National Cadet Corps (NCC) Adventure Activities

Catch them Young is an oft quoted phrase in the field of sports, to enhance the skills and develop budding talent. Good Schools and Colleges also seek to promote a zest for adventure in young boys and girls, as a part of extra-curricular activities. NCC is engaged in adventure activities in a big way, as highlighted in this write-up.

A girl cadet being trained in rock climbing.

Adventure activities in NCC were first introduced in the year 1961 to inculcate a spirit of adventure, explorative inquisitiveness, and to develop stamina, endurance, self-confidence, discipline, courage, determination, team spirit, espirit –de- corps and leadership qualities amongst the cadets. In the last six decades plus, NCC has come a long way in this endeavour, and their cadets have made a mark, including climbing Mt Everest on two occasions. So, how does NCC facilitate these activities?

MOUNTAINEERING AND ALLIED SPORTS

To prepare the cadets for tackling the rough and rugged mountains and rivers, NCC trains over 400 cadets every year at the prominent mountaineering institutes of our country, to

include Himalayan Mountaineering Institute, Darjeeling; Nehru Institute of Mountaineering, Uttarkashi; Jawahar Institute of Mountaineering and Winter Sports, Pahalgam (J&K); Atal Bihari Vajpayee Institute of Mountaineering and Allied Sports, Manali (Himachal); National Institute of Mountaineering and Allied Sports, Dirang (Arunachal). The courses attended by the cadets range from the Basic, Advance, Adventure, White Water Rafting and Search & Rescue courses. Besides these institutes, **Rock Climbing** training is also carried out at suitable places.

NCC has conducted 84 Mountaineering Expeditions till date. Two expeditions are launched every year for boy and girl cadets in which 20 boy and 20 girl cadets participate. The girls expedition is conducted in May/June and the boys expedition is conducted in August / September every year. NCC has successfully undertaken **two Mount Everest Expeditions** in 2013 and 2016 (Boys and Girls respectively) till date. In 2016, the NCC Girls Mount Everest Expedition had established a World Record for the largest contingent of 11 women from a single country on top of Mount Everest.

In the field of trekking, NCC sponsors about 27 All India treks every year. A Camel Safari is also conducted in the deserts of Jaisalmer for 10 days in December every year, with 20 cadets participating along with foreign cadets. Three nodes have been set up for White Water Rafting at Raiwala in Uttarakhand (Ganga River), Mandi in Himachal Pradesh (Beas River) and Siliguri in West Bengal (Teesta River).

AERO SPORTS

A parachute jumping basic course is the first step for those interested in such aero sports. The NCC conducts two courses every year in September and November at the Para Training School at Agra. 40 Senior Division Boys and 40 Senior Wing girl cadets are trained for 24 days in two batches under the aegis of the Army Airborne Training School, Agra. NCC is now setting up infrastructure for **Parasailing** and it is planned to set up 31 Parasailing nodes. 84 Parasails have been procured recently and are being distributed to these nodes. During the Prime Minister's Rally in the run up to the Republic Day Parade, Parasailing demonstration is held as an important event. NCC cadets are also being exposed to **slithering** from a helicopter, and this activity is also demonstrated during the Prime Minister's Rally every year. 25 Senior Division Boy and 25 Senior Wing Girl cadets slither down from a MI 17 helicopter and three ALHs. And adding to the opportunities for the cadets, a **Hot Air Ballooning** Node has been set up at Bhopal.

Parasailing during the NCC Republic Day Camp.

AQUA SPORTS

NCC Naval Wing is in the forefront of training cadets in sailing, yachting, rowing, wind surfing and scuba diving. The Indian Navy helps the NCC in the conduct of these activities and about 200 plus cadets board Navy ships for short duration **'Sea Sorties'** every year.

To sum up, there is undoubtedly an increase in outdoor activities amongst students today. Adventure camps, treks, cycle expeditions, rock climbing are some of the popular events, and NCC is often a partner or promoter of such personality development programmes. **So, young boys and girls – take on the challenges and thrills of the seas, skies and hills; and live life fully.**

(Based on Inputs from Directorate General NCC, New Delhi)

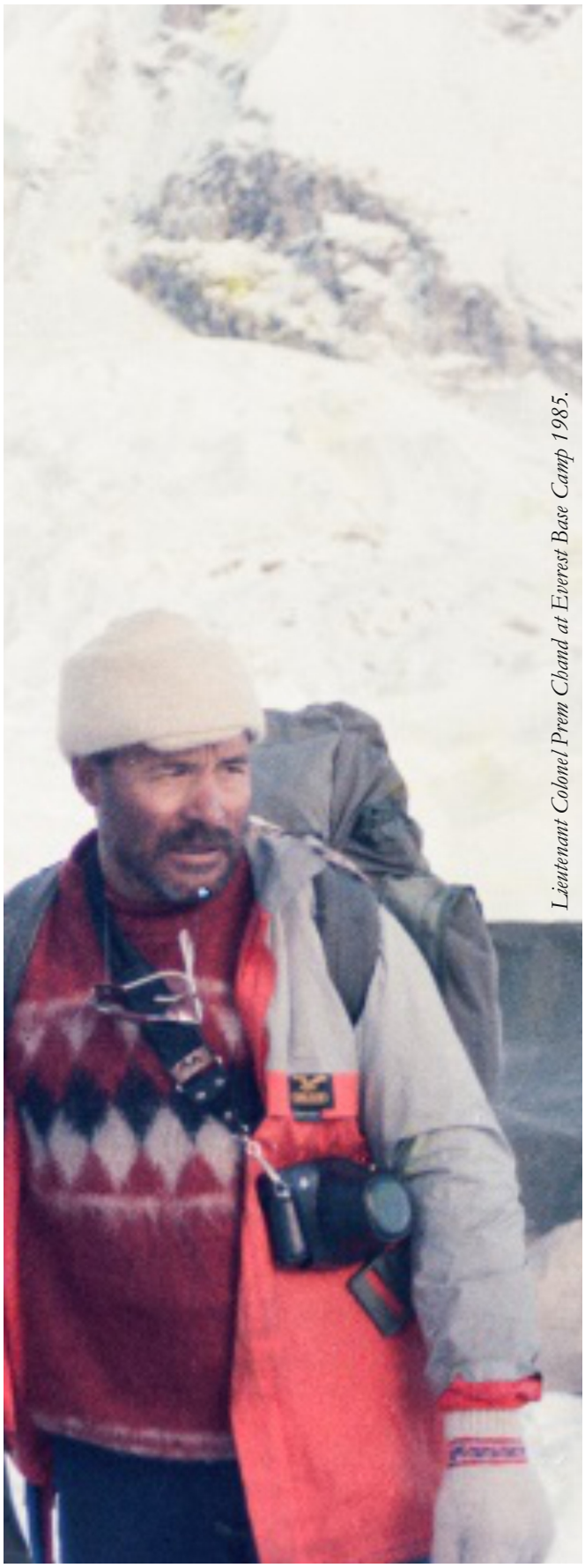
Lt Gen JS Sandhu (Retd) *Editor*

THE SNOW TIGER

- A TRIBUTE TO COLONEL PREM CHAND

Colonel Prem Chand, KC, SM, VSM, a great mountaineer, whose climbing feats remain unmatched in Indian and international mountaineering circles, passed away recently on 04 October 2022 at Kullu in Himachal Pradesh. His feat of scaling Nanda Devi in a climb of eight hours in 1975, the first scaling of Kanchenjunga in 1977 from the North East Face and other highs are considered remarkable in mountaineering circles. The author recalls incidents from the ill-fated Everest Expedition of 1985.

I first met the revered 'Snow Tiger' at the base camp of Siachen Glacier in end October 1984. The 'Pre Everest Expedition Trials' were on and Mount K12 was to be climbed amidst shelling and firing. But let me first highlight some events of the late 1970s. Colonel Narendra Kumar, the famous mountaineer and Team Leader for Kanchenjunga



Lieutenant Colonel Prem Chand at Everest Base Camp 1985.

1977 Expedition compared the historical British 1975 Everest Expedition led by Chris Bonington and the Kanchenjunga 1977 Expedition as below:

…Some top and tough Sherpas from Nepal who were on Everest the hard way with Chris Bonington said that in comparison the climbing on Everest was an elephant walk compared to monkey crawl on Kanchenjunga! …Many Sherpas refused to carry loads on this ridge and an incentive as big as Rs. 1000/- per load per day had to be given to keep the expedition going.

…A thin ice arête barred our way to North Ridge. This demoralised our Sherpas and they returned to the Base Camp. But, having come so far, we were not giving up easily. The efforts were redoubled, and members carried the loads themselves and we hit the North Ridge. The last Camp VII was established at 26,200 feet and on 31 May 1977, Major Prem Chand and Naik ND Sherpa tearing through the thin icy cold winds got to the top and put the National Flag six feet below the summit.

Everest 1985

Many were the contenders to lead that grand expedition. It was 1982 and mountaineers since 1960 were still around. The aspirants were capable and competent. Finally Lieutenant Colonel Prem Chand of Dogra Regiment was selected to lead the expedition based on his vast mountaineering experience; approved by the then Chief of Army Staff (COAS), General AS Vaidya. Concurrently noting sheets were initiated, giving out the details of the plan, time table, equipment and radio sets, food, budget and selection of members.

During November and December 1984, it was seen that the procurement of all material to support the expedition was way behind schedule. The leader was in constant touch with the Director Army Adventure Cell (AAC), but the replies were similar; that the files were in South Block; that big matters took time to move in the 'corridors of power'. Finally, Lieutenant Colonel Prem Chand decided that enough was enough, and on 04 January 1985 addressed a letter to General AS Vaidya, the COAS through proper channel with an advance copy to the Chief's Secretariat.

The crux of the letter was that he was not prepared to let down such an important assignment and in the absence of equipment – vital for the conduct of the expedition – not getting through, he be relieved of such a responsibility. The COAS had after all selected him to lead that prestigious expedition, he being the best mountaineer of the country of the time. But with only few months left for the expedition to commence and equipment not procured, the situation was grim.

Sure enough, the then Director Military Training, the Deputy Chief and all in chain were marching to the Chief's office on 08 January. One by one they were in with the COAS and then Lieutenant Colonel Prem Chand was called in. He entered, saluted and stood at attention. General AS Vaidya looked him in the eye and said, *"Prem, it is not you who has failed, it is I your Chief who has failed to provide you with necessary support. Give me one month and after that if the required support is not in place, I will call off the expedition. It is wrong on your part to quit now."*

Within a week or so the sanctions and approvals were in hand; at least the confirmation of noting to commence purchase, and the team started looking up to the objective.

The expedition planned a twin pronged approach to the peak. One team was for the traditional South Col Route; the other and more technical was the South West Face route. Then, a first of a series of blows struck. Lieutenant Colonel Prem Chand sustained an accident with a Delhi Transport Corporation bus on return from leave, breaking his left carpal bones on 22 July. He was hospitalised for treatment and later discharged from the Army Hospital, Delhi Cantt. With

Lieutenant Colonel Prem Chand and other Everest Expedition members at Kathmandu, after the Expedition.

Honouring the Next of Kin of the Deceased with mementoes, 25 years after the Expedition (Silver Jubilee) in November 2010. Colonel Prem Chand is to the right.

his arm still in plaster cast, Lieutenant Colonel Prem Chand was called to the Army Headquarters where he learnt that he would not be leading the Everest Expedition. Outside the building, Lieutenant Colonel Prem Chand saw a Jonga vehicle bring Brigadier Jagjit Singh to the entrance of Sena Bhawan.

Soon a signal was received by the team at Namche Bazar appointing Brigadier Jagjit Singh as the leader. The bonding that the members had built with their leader for over a year was at ground zero. The efforts to enhance their image by getting regiment crested 'T' shirts and track suits from the parent unit, the endeavour to build up stamina with extra diet, training at Indian Mountaineering Federation rock walls and such involvements of the leader were not forgotten by any member. They had learnt from him to be brave under adversities.

In mid-September, finding that various changes recommended from the Everest Base Camp were steering the expedition off its main course, with Brigadier Jagjit Singh recommending cancelling the South West Face efforts and promoting the climb of Lhotse peak, Army Headquarters (HQ) decided to change the leader again. At the Base Camp, the leader and Lieutenant Colonel Prem Chand, both seasoned mountaineers discussed and chalked out the strategies for the South West Face for days. Accordingly stores and equipment, resources and loads were worked out in detail. It seemed that South West Face was back again with vigour and zeal. He sent a message to Kathmandu and Army HQ to clear the matter; that there was no need to change the leader; that he was satisfied that the South West Face efforts were in place; that the boys were motivated and that things look bright. In the evening of 24 September, he again spoke to members present at the Base Camp and briefed them on what they would find at the upper ridges on the South Col route; how the 'Balcony' was to be negotiated to reach the South Summit. The members were in awe and in trance hearing it all, and he then declared that he was moving down and all that he could do for them, he had done by imparting such instructions. Lieutenant Colonel Prem Chand went back from the Base Camp three days later. Many hearts broke then, for the team members had begun to think that he would lead again.

Mid October, After the Deaths

16 Oct 1985. In the evening there were calls again. The Signals Officer (sparrow) at Base Camp took the call from Kathmandu. It was the Additional Director General Military Training (ADGMT). He desired to speak alone with the leader. Brigadier Jagjit Singh took the handset and was communicated that he was removed from the position of leader and that the ADGMT would be flying in with the new leader and taking him back in the helicopter. Brigadier Jagjit was so upset that Major Dutt had to take the handset and continued the call.

The new leader, none other than Lieutenant Colonel Prem Chand spoke to members on arrival. Moving up with the ropes, he planned to monitor all upward movement from Camp II, which was opened again. The members moved from Camp III to open the route to Camp IV. Hopes of all the members lifted for a possible summit. The Japanese, making their summit attempt too were amazed. They had met Lieutenant Colonel Prem briefly in Kathmandu in early August. His

reputation was legendary. First hand they observed his Spartan ways. The first summit team for the fifth summit attempt led by Naib Subedar ND Sherpa were to climb from Base Camp. But ND Sherpa was sozzled once again and not traceable till 8:05 am.

The grief and stress combined was breaking the members. Some wept openly, few in hiding, this one hit the bottle, another was moving to Lukla Airfield. Prem Chand was truly distraught seeing his strong buddy of Kanchenjunga in that state. He was doing his best in joining the pieces that his expedition was broken into; to make the venture a success somehow, anyhow. In the sixth and final attempt, two members were struggling miserably in near zero visibility of white out conditions; climbing up blindly in the blizzard, no less desperate than the duo of Raymond Lambert and Tenzing Norgay on 28 May, in the Swiss Expedition of 1952. At about 2:00 pm Lance Naik Chhering Angchuk was blown off by the high winds. As they both were roped up, they rolled down in cumulative effect. The fall was arrested as Naib Subedar Magan struck his ice-axe, but it was a sliding, slowing temporary halt only. They slid for over 700 feet of vertical distance and landed in a snow field above the South Col. In this fall, the Naib Subedar broke his left knee and limped badly thereafter.

This was seen by Sepoy Amar Prakash en-route to South Col. Almost simultaneously came the reports of the mishap from Naib Subedar Magan and Sepoy Amar Prakash at about 3:30 pm. The leader directed them to move down to Camp II. He also announced that he was calling off the expedition. No more games of death. On return, at the Military Training Directorate a Sikh Regimental officer met the leader and pressed him to write the citations for deserving

Colonel Prem Chand Dogra,son of Chhey Ram,was born on June 7,1942, at Lindoor in Lahaul and Spiti district of Himachal Pradesh and was commissioned into the 13th Battalion of the Dogra Regiment on May 3,1964. Lahaul Spiti is a tough,difficult,remote mountainous region and the inhabitants of the district are sturdy and born adventurous,since for them life itself is a daily adventure. For Prem Chand, mountaineering was an inseparable part of his DNA. He possessed the aptitude,courage,skill and determination to pursue his passion. His mountaineering career started in 1970 with the climbing of Chomolhari,the highest peak in Bhutan. He climbed Nanda Devi in 1975 and its difficult neighbour Nanda Devi East in 1976. The mountaineering exploits of Major (later Colonel) Prem Chand,did not go unnoticed. Prem Chand Dogra is fondly referred to as the 'Snow Tiger' and the Hero of Kanchenjunga,after he successfully scaled the world's third highest peak in May 1977.

The Kanchenjunga Challenge. Kanchenjunga was first climbed on 25 May 1955 by Joe Brown and George Band,who were part of the 1955 British Kanchenjunga expedition. Kanchenjunga is an extremely difficult ascent, technically challenging and was again summited 22 years later in 1977 by Major Prem Chand and Naik ND Sherpa. In the expedition,Major Prem Chand Dogra opened the advance camp,finding a way through icefall,opened a route to the first camp and also found a way to establish the second camp. Havildar Sukhvinder Singh,a promising member of the team,lost his life in an accident. This adversely affected the morale of the team and the members dreaded climbing the North-East Ridge,which looked near impossible to scale. Major Prem Chand Dogra volunteered to climb and started work on the ridge. Taking many risks,he opened the route to a point just below the third camp. When the team got stuck due to innumerable technical difficulties in between the third and the fourth camp,he went back and opened the route on the most difficult portion of the ridge. This enabled the team to inch forward. Major Prem Chand was selected leader of the first summit party. His timely decision was crucial for building up the logistical support for the first summit party. He showed great courage,skill and determination in leading the team to the summit. He climbed 600 metres on the last lap, a remarkable feat in the annals of Himalayan mountaineering. For his exemplary leadership,conspicuous courage and determination,he was awarded the Kirti Chakra. Truly well deserved.

Thereafter,continuing with his mountaineering exploits,he led the Dogra Regimental Expedition to Nun Peak (23,410 feet) in June 1982. On January 26, 1985, Colonel Prem Dogra, KC, was awarded the Sena Medal for his primary role in the successful scaling of Mount Everest by the Indian Ladies Team. Bachendri Pal,the first Indian woman to scale Mt Everest in 1984 says she owes her career to her Guru Colonel Chand. *"He inspired me to take up mountaineering and shaped my professional life too".*

Colonel Prem Chand has been to Mount Everest twice. He has climbed about 30 peaks during his entire career. He was also awarded the Indian Mountaineering Foundation's (IMF) 'Gold Medal',the highest award of the IMF for his outstanding feat in the field of mountaineering.

Left Photo. Colonel Prem Chand, the Snow Tiger. Right Photo. Giani Zail Singh, the President of India, meets Prem Chand whose left arm is in a sling, before the Expedition in New Delhi.

individuals. The leader said he frankly was not inclined to do so. On request from Colonel Tankha, whose relief, Colonel Keshav Singh had spoken to the leader, he relented, with a condition, that whatever decoration he would recommend would be processed or none at all. Colonel Keshav Singh assured it would be so. He recommended all members who died at South Col the same decoration. A few days, later on 26 January 1986 the awards were announced and he found they were not as per his recommendation. The former leader wrote to the DGMT, Lieutenant General SF Rodriques, saying that even in death the HQ and he in particular had been discriminating. Colonel DN Tankha, still around, was asked to tell him not to initiate such letters. Colonel Prem Chand replied that he did not regret what he did, and maintained what he wrote.

In his own words, Colonel Prem had penned his thoughts as below:

Himalaya are not only sports arena, they are also the inspiration for poetry. Mountain slopes and faces, manifestly portray flowers and rocks, snow fields and discreet signs of human presence, harmoniously disposed like a poem. It is here that most committed mountaineers learn to understand and love mountains. They make it clear that traversing or climbing mountains is more than just muscular effort. If one opens one's heart, the physical act is transcended by the spirit of nature and we are led towards a whole that is otherwise beyond our comprehension.

Not for nothing was the 'Snow Tiger' a revered, respected and held in awe personality.

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Colonel Ashok Pratap Tanwar (Retd), an alumnus of National Defence Academy, Pune was commissioned in 1981. An ardent adventure enthusiast, he has dedicated his life efforts in promoting and enhancing adventure in the environment, before and during service, continuing post retirement. He has written numerous books on adventure and on his parent unit 4 GUARDS (1 RAJPUT).

Col Ashok Pratap Tanwar

INS Betwa

BATTLE OF MIDWAY

OFF KOCHI

Midshipman was the wonderful time when one had gone past the cadet rigours and not yet donned the 'officer' responsibilities. This fun time enabled the 'snotties' to challenge each other in an adventurous slugfest in the middle of the Ernakulam Channel – a Battle of Midway indeed.

The title of this piece may cause the reader's mind to drift across the globe to an atoll in the mid-North Pacific, which in June 1942 was the focus of one of the most important naval battles of the Pacific Campaign in World War II. Therefore, let me bring you back to the palm-fringed Ernakulam Channel and fast forward to February 1980 because that is where and when this battle was fought. Unlike the carrier dispositions, battleship formations and hundreds of aircraft that fought in its more famous namesake, the antagonists in this Battle of Midway were just two Leopard Class frigates – *Beas and Betwa.* It was an adventure to be long remembered.

The legendary Helen of Troy is reputed to be the face that launched a thousand ships. In this case it was *Fifi* of *Betwa* that thrust scores to midshipmen to engage in 'battle'. *Fifi* was a doll of East Asian origin whose antecedents were rather unknown - not that anyone cared to know. What mattered was that it came to be accorded pride of place in *Betwa's* gunroom. *Fifi* so

Kochi Naval Base (Phoo Credit wikimedia.commons)

dominated their lives that *Betwa's* gunroom flashed a signal challenging the gumption and guile of their counterparts on *Beas* in nicking their *Fifi*. The gauntlet had been thrown down and had to be taken up by any self-respecting midshipman! It would not be for the substantial quantity of beer that could be demanded as ransom, but for the bragging rights that would accompany *Fifi*.

Beas was secured to trots, and the war council was hastily assembled in the gunroom. A reconnaissance team was despatched across the channel to *Betwa*, secured alongside Naval Jetty. The scouts returned with an uninspiring report: *Fifi* was protected by layers of security that would be difficult to breach. Members of any raiding party were bound to be captured before getting anywhere near the objective and would have to face the ignominy of having their heads shaved, tarred, and feathered. The Admiralty of the Gunroom had to come up with a Machiavellian ploy or else resign itself to defeated silence. A devious plan was hatched!

Halfway into the Middle Watch under the cover of darkness, *Beas'* motor whaler approached upstream of *Betwa*, and two midshipmen slipped silently into the water. They swam to the motor whaler secured to *Betwa's* stern and tried in vain to cut the lines. By then another midshipman had been landed on the jetty. Seeing things not going as per plan, he smartly boarded *Betwa,* cheerfully greeted the sleep-deprived watch keepers and quickly made his way to the quarterdeck. Once there, no time was wasted in slipping the head and stern ropes of the whaler. Providentially, the engine purred into life with the first push of the starter and, before *Betwa* could react, their whaler was shaping course for *Beas*.

There was jubilant applause on board *Beas*, and immediately a signal was flashed to *Betwa* suggesting a *Fifi*-for-whaler deal. At this stage it was 'Advantage *Beas*', but no one doubted that *Betwa's* midshipmen would not rest till they had avenged their loss. Security was doubled on all boats in the water as also on traditional targets such as commissioning pendant, colours, life buoys, et cetera.

Betwa's midshipmen did indeed come up with a masterstroke. They hired a fisherman's dugout for a generous sum that compensated him several times more than his day's fishing would. Dressed as local fishermen, two snotties approached *Beas* in broad daylight during slack water and pretended to be fishing near the Captain's cutter that was riding the starboard lower boom. So convincing was their masquerade that it fooled the lookout on the boat deck. In those days, asymmetric warfare and terrorist strikes were not such serious considerations and shooing off small time fishermen in the Ernakulum Channel might have even been perceived as threatening their livelihood! Just then *Betwa* staged a diversion across the channel, and while the lookout's attention was diverted, the two 'snottie-fishermen' commandeered the Captain's cutter and set off with the fisherman's dugout in tow. They returned triumphantly to a hero's welcome on *Betwa*. It was now 'Advantage *Betwa*' as the cutter carried more bargaining value than the whaler they had lost.

To celebrate, *Betwa's* midshipmen later loaded themselves on the 'prize' cutter and decided to do a victory steam past close to *Beas*. To complete the parade was their own cutter with another load of cheering

midshipmen. This added insult to injury, and Action Stations was sounded in the *Beas* gunroom. Being a Sunday, snotties were relaxing in scant undress, but unmindful of attire two motor whalers (including the one 'captured' from *Betwa*) were manned at the rush, and were headed towards the victory parade.

The boats established violent alongside contact in the middle of the channel and the midshipmen began trading blows across the gunwales, momentarily forgetting that they were course mates. Flash point had been reached thanks to the acerbic signals exchanged between the two ships on the developments over the last 16 hours. Not satisfied with bruising each other with bare knuckles, the level of violence was escalated with weapons of opportunity in the form of boat hooks, danbuoy staves, gratings, and even a fire extinguisher! The speed and manoeuvrability of the boats may not have been as spectacular as the ones used in 007 movies, but the episode unfolding on the channel was exceptionally dramatic by Kochi standards. As would be expected, crowds had thronged to both sides of the channel to enjoy the free entertainment.

Fortunately, it was difficult for the boats to maintain contact for long in the roaring ebb. As the boats broke off, one midshipman from *Betwa* got pulled into *Beas'* motor whaler. They now had a 'prisoner of war'. In the scuffle, the towing line from the cutter slipped and the fisherman's dugout was set adrift. *Beas*' motor whaler crew noticed it first and manoeuvred quickly to grab hold of the line in the water. It was now 'Advantage *Beas'* again since one whaler plus one fisherman's dugout plus one prisoner was more valuable than one cutter!

The dugout was being hauled in by one of the midshipmen when the coxswain ordered full ahead to charge in for Round 2 of alongside fisticuffs. The sudden increased strain on the line was too much for the bloke to handle, and he was jerked out of the boat and into the channel. The current took charge and began carrying him rapidly in a North-North-Westerly direction towards Bolgatty Island. With the wakes of criss-crossing boats buffeting him from all directions, the midshipman decided to let go of the dugout and instead concentrate on keeping himself buoyant. In the ensuing skirmish, one of the boats collided with the dugout, despatching it to a watery grave.

In all this mayhem, the 'prisoner' on *Beas'* whaler decided to jump into the channel in keeping with the aphorism of death before dishonour! Now there were two fellows in the water, one from each ship. Fortunately, both were excellent swimmers. The focus of all boats now shifted to rescuing their own comrades, which made them disengage from battle for a well-deserved operational pause. The soggy duo was fished out of the drink and all boats returned to their respective ships. The dugout was lost, but the fisherman was handsomely compensated by the midshipmen. He would never know of *Fifi,* and how she was responsible for him getting a new boat.

The sickbays on both ships remained active for quite some time, mercifully attending to only superficial wounds. More seriously bruised were the egos. With the dugout sunk and the 'prisoner' safely back into his own camp, it was difficult to decide the eventual winner. After hard negotiations, boats were exchanged, and within a week the midshipmen on both ships were back to their friendly ways as if nothing had ever happened. In the ultimate analysis, it was the indomitable spirit of the midshipmen on both ships that had triumphed. Bonds of camaraderie were cemented – bonds that have since stood the test of time and cannot be broken. Many of the combatants that day later rose to be Admirals, C-in-Cs and even a Chief!

Over four decades later, the word *Fifi* still lights up any gathering of the 56th Course and is followed by animated recollections of each person's role (real or imagined) in the Battle of Midway. All agree that was the day they were transformed from being midshipmen to pirates, which several have remained to this day!

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Captain (IN) Sunil David, VSM a Gold Medallist from NDA, is a Gunner and Missile Man at heart. He has commanded three front line warships and has served in coveted appointments such as Director Naval Plans and Naval Assistant to Chief of the Naval Staff. He has an armament degree from the former Soviet Union, has attended the Royal Naval Staff College, UK as also the College of Naval Warfare. Post retirement, he has added to his repertoire 15 years of rich corporate experience. He enjoys playing squash and riding his Thunderbird 500.

Captain (IN) Sunil David

RUNVEER 4.0 AT MHOW (MP)

-CELEBRATING THE INFANTRY DAY

The landing of Indian Infantrymen led by 1 SIKH at Srinagar airfield on 27 October 1947 saved the state of J & K from the ruthless and treacherous Pakistani invaders, called Kabailies. Hence, 27 October is celebrated as Infantry Day. The Infantry School, Mhow has been organizing 'The Infantry Marathon' named 'RUNVEER' to celebrate Infantry Day since 2019 with the aim to raise awareness about fitness and to highlight the importance of the actions of brave Infantrymen on that day 70 plus years ago. The patriotic connect and fervour of the people of Mhow is also aroused. 'RUNVEER' was first organized in 2019, which witnessed a large number of enthusiastic runners from different parts of the country joining the soldiers at Mhow for the Marathon. The second and third edition of 'RUNVEER' was restricted to Armed Forces personnel due to the COVID pandemic.

Ready to Run - At the start point.

Glimpses from the energetic and joshila event at Mhow on 30 October 22.

The Fourth edition of the Infantry Marathon, RUNVEER 4.0 was organised on 30 October 2022 at the Garrison Ground, Mhow to celebrate the 76th Infantry Day. Around 6000 people participated which included Armed Forces personnel and civilians from different cities of MP. The event had three categories: Half marathon of 21 km, 10 km Josh run and a 5 km sprint run. A festive atmosphere was witnessed in the Garrison Ground with the presence of military bands as well as a display of Infantry weapons. A fly past by three Micro Light Aircraft of the Army was also a highlight of the event. Major General Vikram Dev Dogra (Retd) who had just returned after successfully completing the Iron Man challenge for the third time in Barcelona, Spain was the brand ambassador for Runveer 4.0. He flagged off the Marathon and also distributed the prizes. Major Avnish Bajpai, the first Indian blade runner to run the Full Marathon also ran the Half Marathon. It was indeed heartening to see the enthusiastic participation of citizens of all age groups striving towards a fitter India. All finishers were awarded medals, certificate and winners from various categories were awarded attractive prizes.

With a large number of ladies and children participating, Runveer 4.0 became a memorable and festive event. The gaiety visible was contagious, and was a fitting celebration of Infantry Day.

Lt Gen JS Sandhu (Retd) *Editor*

ALL THAT GLITTERS

HAS TO BE GOLD!

There is turbulence in the global financial situation with high rates of inflation in the Western World, the Russo- Ukraine war, rising oil prices, hikes in the US Fed Rates, etc. In such times, gold is a good alternative investment choice. Our Fin-sherpa elaborates on the nitty gritties of gold investments.

Throughout history, civilizations have coveted gold. Kingdoms have been attacked to gain its possession. The lure of gold has not eluded any one, from kings to the common folk, none has been able to look beyond its lustre. Even today gold is considered a valuable asset especially in Asian countries like India. While the housewife buys gold ornaments on the auspicious occasion of Dhanteras, fathers buy golden ornaments for their daughters and daughters-in-law on special occasions like weddings. In fact, every Indian festival has some connotation with Gold. But it is not just the common man, even the Indian Government holds a couple of thousand tons of its reserves in the form of Gold. So Gold has been in high demand for a long time and remains so.

Why do people invest in Gold?

1. **Ornaments –** Especially in Asian countries including India, there is a high consumption of Gold for the purpose of ornaments that women wear on festive and wedding occasions.
2. **Investment –** Many people also invest in gold for investment purposes as it is an easy asset to buy and maintain.

What are the different forms of Gold?

Physical Gold	Non Physical Gold
Gold Bars	Exchange Traded Funds (ETFs)
Gold Biscuits	Gold Index Funds
Gold Ornaments	Sovereign Gold Bonds
Gold in Sarees	
Gold in Electronic Equipment	

Physical forms of gold are the things that we are used to buying and there is a touch and feel to it. The various forms are Bars or Biscuits if one were looking at buying them as investments for the long term. However if one were considering current usage, then physical gold is in the form of ornaments like necklaces, chains, rings, etc..

While physical gold has many positives, it however suffers from three very big disadvantages:

1. Being physical in nature, they are susceptible to theft and burglary, so one can be quite easily deprived of it by unscrupulous elements, whether it is at home or while moving homes.
2. Being physical they are anonymous and can be transferred by physical movement and therefore there is no possibility of trail in the process. So lot of physical gold is used for bribery, corruption and to fund terrorism and other illegal activities.
3. Any change in converting them from one form to another incurs wastages and making charges.

Non-Physical Gold is exactly meant to overcome the lacunae presented by the physical gold. Non-physical gold provides a trail of the movement of gold as also provides an authentic basis to claim ownership. Non-physical gold forms are:

Gold ETF: Gold ETF are traded on the stock market, hence these can be bought and sold only through the stock exchange. You need a demat trading account. One unit of ETF represents one gram of Gold. Gold ETF are passive funds which closely track the gold price.

Gold Mutual Funds: These funds invest in Gold ETF which closely tracks the prevailing price of gold. The mutual funds are managed by various asset management companies, who invest in fund of funds which would get invested in ETF. Either you can invest through a Systematic Investment Plan (SIP) or as a one-time investment. To invest in Gold Index Fund, one does not need to hold a demat account or a share trading account.

Sovereign Gold Bond (SGB): SGBs are the perfect alternative to investment in physical gold. With these bonds, you can enjoy capital appreciation and also earn interest every year. These bonds, issued by the Government of India, also eliminate several risks associated with physical gold. The benefits of SGBs include capital appreciation linked to gold prices, additional interest of 2.50% per annum, elimination of risk and the cost of storage applicable to physical gold. In addition, there is exemption from capital gains tax, if the bonds are held till maturity. The tenure of SGBs is eight years, with an option to exit from the bond from the fifth year and sixth month onwards. A holding certificate is issued as a proof of your investment in the bonds. Convenience of investing online is also available.

What has been the historic performance of Gold?

The Chart -1 depicts Gold prices over the past 10 years from 2013 to 2022 and reveals that while Gold has had its highs & lows, its weighted average Compounded growth rate has been 4.23% per annum in Indian rupee value over the past 10 years.

A deeper analysis of the Gold price movement in INR over the decade indicates that while the international prices of gold have remained almost unchanged, the higher return of the same asset i.e. Gold in INR is due to other reasons. Since all the gold that India consumes is imported using US dollars, it is quite apparent that the Indian price hike in gold is nothing but the Dollar appreciation Vis a Vis the Rupee. Chart in the next page shows the 10 year Gold price movement in USD/Oz.

Why must one invest in Gold?

1. **A Hedge against Inflation.** In countries like India, while investing in equity gives one high returns, even gold gives a fair return especially at the time of inflation. This is the only asset which supports or balances your portfolio when high inflation ravages your returns.

2. **For Diversification.** When the Equity market is volatile, gold is considered to be the safer place for investment. Experts believe that having gold in your portfolio reduces risk at the time of volatile market. Gold and equity have an inverse relation which means that when the equity market falls gold prices generally tend to move up.
3. **High Liquidity.** Gold is a tangible asset which has value in the long term. Gold is a fairly liquid investment, which can be bought and sold quite easily. You can also get loans against gold, without much difficulty. In our country we have used gold as currency for many centuries.
4. **Wealth Creation.** Gold investments provide an opportunity for wealth creation. Sometimes investing in gold will also help you in achieving your financial goals like marriage, house purchase, new vehicle. Past track record proves that gold is the knight in shining armour in times of financial distress and investment risk.

Factors that Influence Gold Price and Gold Returns

Demand and supply of Gold. This is the main factor that determines the price of gold. India's hunger for gold will increase in sync with the average per capita increase in earnings, hence the demand for Gold in the form of ornaments is likely to continue and therefore the price of gold is likely to head Northwards.

Gold Acts as a Hedging Price to Inflation. Hence, the price reacts to the inflation numbers: higher the inflation, higher will be the price of Gold.

Interest Rate. Interest rate has an inverse relationship with gold. When the interest rate increases, gold price will reduce.

Geopolitical Factors. Most of the gold in India is imported, hence international factors like war impacts the global gold price which in turn affects the domestic price.

Currency Fluctuations. Currency fluctuations influence the price of gold and the global economy. Currency fluctuations happen due to various reasons like monetary policy, imports, inflation. The value of the Indian rupee to the dollar value has a significant impact on gold price in India.

Gold has been considered to be a symbol of wealth since ancient times. 50% of gold is in the form of jewellery and balance is in the form of central bank reserves. Some gold is used in various industrial purposes. Some gold is held in the form of investments like gold bars, coins, gold mutual funds, gold exchange traded fund and ETFs

Gold Vs The US Dollar

Since gold is usually denominated in US Dollars, there is a correlation between gold and the US Dollar. As a thumb rule, when the value of the dollar increases relative to the other currencies worldwide, the price of gold tends to fall in US dollar terms.

The interactive Chart-3 on the next page compares the daily LBMA fix gold price with the daily closing price for the broad trade-weighted U.S. dollar index over the last 10 years.

Gold Vs Nifty (NSE Fifty Equity Index)

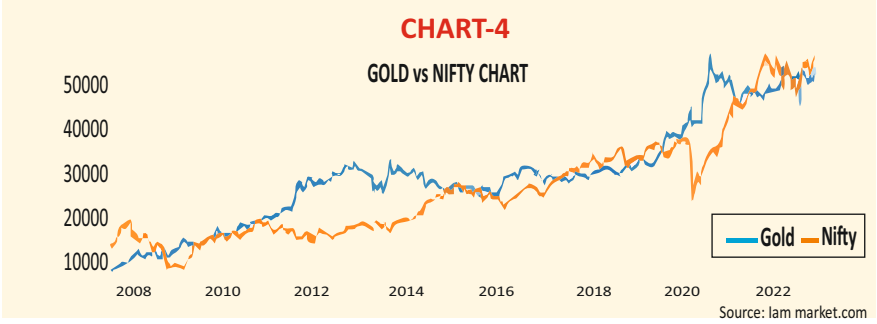
From the Chart-4 it is apparent that in the aftermath of the Global financial crisis in 2009, when Equity markets globally got impacted, Gold had been a great performing asset as people became risk averse and moved all their investments from Equities to Gold. However, this story reversed in the period between 2016 and 2019, when Nifty outperformed the Gold performance. Early in 2020, with the

CHART-2

advent of the Covid pandemic and increased uncertainty, the demand for Gold came back big time. So, Gold and Equity assets have a nearly perfect hedge and therefore gold plays a role as a hedge investment for equity investors.

Problems of Investing in Gold

- **Lag in Long Term Performance.** We know that gold outperforms other assets at times. But we cannot expect the same in the long term. If someone is thinking about investment for retirement, then giving more exposure towards gold might not work. Because in the long run, the stock markets have performed better than gold. In the last five years the stock index has gained more as compared to gold ETFs.
- **Price movement is unpredictable.** Gold prices depend upon a variety of factors including global demand supply, currency fluctuations and domestic demand supply … hence it is not the easiest of assets to understand for investors especially if their needs are more in the shorter term.
- **Fear based decision making.** People generally sell gold when the gold price is high and will come out of the fund with the fear of losing. This causes investor to take decisions based on fear than what would be best for them in the long term. We have seen people talk about gold only when the gold price is down and take decisions on emotions rather than in a rational manner.



Conclusion

Depending on one's need, gold may be invested in Physical or non-physical forms. While Non Physical gold has greater flexibility and advantages, it is entirely based on the need of the user.

We live in a very polarised world wherein Geo political tensions are at their peak due to the Russia – Ukraine war, global oil prices and inflation is at an all-time high. New investment vehicles like Crypto Currencies have been seeing a significant crash in values, while real estate and stock market while having some promise, are extremely liquid and volatile. So there is definitely a case for investors to look at Gold investments. We would reckon that at least 10 % of one's liquid investments can be invested in Gold from a long term diversification perspective.

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Babu Krishnamoorthy

Babu Krishnamoorthy has spent the past 25 years as a financial adviser and entrepreneur, and is the Chief Sherpa at Finsherpa Investments Pvt Ltd. A money coach, he helps people dream big and achieve life goals. He helps them plan and execute their financial plans in a manner that is predictable. He loves meeting people and spends his spare time reading non fiction & is an amateur runner (with over 15 half marathons and one full marathon completed). He has authored many books including "Unlock Secrets to A Wealthy Life". He is available at Babu.k@finsherpa.com (www.finsherpa.com)

THE GREAT OUTDOORS

Planning on a holiday and worried that your exercise routine is going to go for a toss? How lovely would it be if you could combine your workout with your love for sports and nature. Adventure sports promises exactly that!

This October, I visited Dehradun and Mussoorie with my daughter, son-in-law and a few close friends. Belonging to the urban jungle that is Chennai, this trip was such a welcome break for me – especially since I got to indulge in a much-loved activity which is my favourite "trekking in the hills" - and lots of it too! Breathing in the fresh mountain air, trekking, including lots of outdoor activities, making fun-filled reels with close friends, and having fresh farm-grown vegetables was such a beautiful break and much-needed short vacation. My outdoor activities beautifully compensated for my daily fitness regimen and realised the famous saying of *"having one's cake and eating it too"*.

The outdoors offers so much scope for physical activity, and yet it is largely put aside by most of us in favour of gyms, Pilates and yoga centres. While these are commendable additions to your fitness regime which should not ever be dismissed (especially if, like me, you live in a city where access to nature is a luxury!) the outdoors is something completely different, particularly if you're pursuing adventure sports for fitness.

Taking a cue from our glorious defence services, adventure sports too can be land-based, water-based or air-based. Let's take a look at some of these.

- **Land-based:** These include mountaineering, trekking, rock-climbing, skiing, cycling, mountain-biking and so on.
- **Water-based:** Deep-sea diving, kayaking, rafting, surfing.
- **Air-based:** Para-gliding, sky-diving, parachuting, hot air ballooning.

India has an expanse of different geographical terrain across the length and breadth of the country, which lends itself to some or all of these possibilities. But why should you

The author with friends during her Dehradun Outdoor Trek.

consider them for fitness at all? Let me take you through some of the reasons.

- **Reduce your waistline:** Adventure sports can lead the way to weight loss when practiced regularly. For instance, surfing can burn roughly around 300 calories every hour, while kayaking can burn 350. Mountain biking leads the way though, with the average person burning roughly 680 calories every hour. Of course, this varies on the geographical turf, how much speed and effort are employed by the person, but all in all, you can burn tremendous amounts of weight while you're out there having fun as well. And did you know that the more you weigh, the more calories you would burn during hiking? Amazing isn't it? Typically a 160 pound person would burn between 430 to 440 calories per hour as against a 200 pound person who would burn close to 550 calories per hour during hiking.

- **Get your daily dose of Vitamin D:** In India, Vitamin D deficiency is almost an epidemic, which is ironic considering how much sunlight we have access to - the best source. Over 70% of the population is deficient in Vitamin D, simply because we do not spend enough time outdoors. This cuts across social strata of rural and urban India. Also, Indians rarely consume fortified products such as dairy in a carton or packaged orange juice, which can sometimes boost Vitamin D levels. To counter this deficiency, adventure sports is a great way to spend time in the sun and soak it all in! What's more, Vitamin D also enhances melatonin levels, which in turn regulates your sleep cycle and prevents sleep disorders.

- **Build endurance and strength:** Some sports like rock climbing give your full body a complete workout, building muscle while burning fat. Every major muscle group is used, plus you are also working on flexibility and agility – stretching and scaling. Mountaineering is another beautiful adventure sport that allows you to work out not only your legs, but also your back, arms and shoulders. If you're water-inclined, deep-sea diving or surfing is your go-to sports. Some sports like canoeing (too much upper body focus) and cycling (too much lower body focus) can skew your workout, so mix and match it up if you can.

- **Give yourself a mental workout:** Adventure sports add to your self-esteem and self-confidence. It also helps you overcome your fears, facing the unknown and pushing you out of your comfort zone. Definitely worked for me big time. If physical endurance is important, mental endurance is even more vital! Adventure sports are all about 'living on the edge' and you have got to have your focus bang on. You cannot afford to be lax or lackadaisical, or you might end up getting seriously injured. The adrenaline rush, the feeling of being one with nature, can be a potent stress-buster. If you're going through anxiety, depression or mood disorders, consider including a simple outdoor activity like trekking or paddling into your routine once in six months. Adventure sports teach self-reliance and also increase problem-solving skills.

Words of caution

Adventure sports are truly great, but there's a reason they're not for the faint-hearted! They're extremely dangerous, and if attempted without proper training and supervision, could be dangerous or even fatal. Just consider this - extreme adventure sports cause around 40,000 head and neck injuries every single year. Make sure you always weigh the risks before you embark on something. Take every single precaution that is recommended, and do not throw caution to the winds. Train or prepare under a reputed coach or sports company, one who is credible. Take baby steps and work your way from there.

Taking these caveats into account, adventure sports are still a wonderful way to work out and connect with nature while doing so. It helps you find your balance, and helps you on the way to self-discovery. **Try it, it definitely works!!!**

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Dr.Renuka David



INDEFATIGABLE SPIRIT

- READY TO FACE THE STORMS AND PERILS

Commander Abhilash Tomy is undoubtedly a heroic adventurer, who has challenged the mighty waves of the vast oceans alone in a sailboat, tossed and whipped, wrecked and injured in the Golden Globe Race of 2018. Rescued after a multinational mission from the Southern Indian Ocean, this did not wilt his spirits and Abhilash is again aboard as a Skipper in the Golden Globe Race 2022. In early December, he was at the sixth position in the Race. He represents the spirit of adventure in our Armed Forces. We salute him!

Commander Abhilash Tomy (Retd), born in Changanacherry in Kerala, joined the Naval Academy in Goa, from where he was commissioned in 2000. He completed his flying training in 2002, and qualified as a maritime reconnaissance pilot on the Dornier 228 aircraft. Abhilash Tomy is married to Urmimala Nag of West Bengal. The couple has two sons - Vedaant and Abhraneil.

When Commander Dilip Donde became the first Indian Navy Officer to do the first solo circumnavigation of the globe in 2009-10, Tomy was a part of the shore support crew, helping Donde stock up supplies at the four ports of Fremantle, Lyttleton, Port Stanley and Cape Town.

Based on this experience, and his sailing expertise, he was chosen to helm Sagar Parikrama 2, a non-stop, unassisted circumnavigation of the globe, under sail. To prepare him for this role, in 2011, he and Commander Dilip Donde participated in the Cape Town to Rio Race. He also sailed to Malaysia and Thailand, with a team of three people.

On 1 November 2012, Tomy and the *Mhadei* departed from the Gateway of India at Mumbai for Sagar Parikrama 2. After completing a voyage of 23,100 nautical miles, he returned to Mumbai on 31 March 2013, having sailed around the Cape of Good Hope, Cape Horn and Cape Leeuwin. A ceremonial reception was given by Shri Pranab Mukherjee, the President of India at Mumbai on 6 April 2013 as he was the first Indian to complete a solo, non-stop circumnavigation of the world under sail.

Tomy was a special invitee and the only Asian entrant in the 2018 edition of the solo non-stop round-the-world Golden Globe Race. After 82 days, while in 3rd position, Tomy's boat, *Thuriya* was damaged in a storm, and he suffered a severe injury to his spine on 21 September 2018. In his distress messages, he explained that the mast of his yacht had broken and that he was unable to move because of a back injury sustained in the storm. His inability to move also made it difficult for Tomy to drink water or eat food. The Indian Navy diverted two of its ships - *INS Satpura* and *INS Jyoti* - tasking them to join the search and rescue mission being coordinated by the Maritime Rescue Co-ordination Centre in Australia. The Royal Australian Navy's *HMAS Ballarat, Osiris,* a French fisheries patrol vessel and one belonging to Tomy's co-contestant Gregor McGuckin also joined the rescue mission. On September 23, an Indian Navy's long range maritime patrol aircraft Poseidon 8i (P8i) took off from Mauritius and visually contacted Abhilash Tomy's *Thuriya*. The plane returned after its visual inspection and soon aircraft from the Australian Navy too carried out similar visual reconnaissance missions. The French patrol boat *Osiris* picked up Abhilash Tomy and transported Tomy to the nearby Ile Amsterdam, or Amsterdam Island, a French territory that has a well-equipped hospital. From there, Tomy was picked up by *INS Satpura*.

He retired prematurely from the Indian Navy on 11 January 2021 to prepare for the 2022 Golden Globe Race, and is an entrant in the race presently.

Lt Gen JS Sandhu (Retd) *Editor*

Breaking the Glass Ceiling...

Lance Naik Manju, who had joined the Corps of Military Police in the Indian Army on 14 December 2019, became the first woman Soldier Sky Diver of the Indian Army. She jumped from 10,000 feet from an ALH Dhruv helicopter on 15 November 22 near Assam's Missamari.
She is often described by her fellow soldiers as an 'absolute warrior' who is willing to take on any challenge that comes her way. Her inspiring act has set an example for other women to walk the path.

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Chennai - 600096. Ph: 044 4904 4904

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Published by on behalf of Medals and Ribbons, Col. David Devasahayam, Printed by S.Sundar Raman. Printed at Vasan Print Mfg Co, 29, Dr. Besant Road, Royapettah, Chennai - 600 014. Published from Radiant Villa, Plot No.20, 5th Avenue, VGP Golden Beach Phase 1, Injambakkam, Chennai - 600 041. Editor. Lt. Gen. J S Sandhu (Retd).