A seminar on India’s Defence Preparedness was organized by Nehru Centre recently. The seminar covered all the three wings of defence preparedness namely, Army, Navy and Air Force. The first one was Army. Major Shashikant Pitre (Retd.) spoke on defence preparedness of the Indian Army. His presentation was covered in the monthly Newsletters for June, August and September 2015.

Vice Admiral Vinod Pasricha presented a paper on the state of Indian Navy. Some excerpts from his speech were published in the monthly Newsletter for October, November and December 2015.

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Air Marshal (Retd) B.N. Gokhale, PVSM, AVSM VM, Former Vice Chief of the Air Staff gave his presentation on the state of Indian Air Force Challenges and Opportunities. Some excerpts from his presentation were published in the monthly Newsletter for January to June 2016. Following are some more excerpts from his presentation:

**Aerospace Commission for Comprehensive Eco-System**

Today when we see a great surge in civil aviation, one cannot help but recount the contribution made by Indian Air Force in every facet of this growth. IAF involvement has been varied such as seconding trained pilots and maintenance personnel to Air India and Pawan Hans, ensuring maintenance of requisite medical standards for the aircrew, synergy in aviation meteorology observation and setting up airspace management across the country. Initially majority of Air India pilots were from IAF and continue to be seconded even today. The helicopter pilots, seconded from IAF, formed Helicopter Corporation of India in 1985, which was later renamed as Pawan Hans. These pilots carried out pioneering work of flying to distant offshore oil-rigs of Bombay High.

Vested with the responsibility of air defence, IAF has a major stake in air space management of both civil and military aircraft. For a number of years after independence, Director Generals of Civil Aviation and of Airport Authority of India (AAI) were senior IAF officers, who helped in ensuring synergy of operations and also for streamlining procedures. In those formative years, far flung airfields across India were networked and many of the Air Force airfields were either completely handed over to the AAI or civil enclaves were established at IAF

**Events At a Glance...**

**Art Gallery**

Chatak - 2016
(A Monsoon Show of Professional Artists)

Tuesday, July 12, 2016 to Monday, July 18, 2016
11.00 am to 7.00 pm
AC & Circular Gallery

**Cultural Wing**

Megh Malhar - 2016
(A Thematic programme on dance, drama and music)

Thursday, July 14, 2016
6.30 pm
Nehru Centre Auditorium

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bases to allow use by civil aircraft. Now that the civil aviation in India is witnessing an impressive growth, there are over 22 IAF airfields from which civil aircraft operate. A network of Advance Landing Grounds (ALG) and helipads operated by the IAF for air-logistics delivery will also come handy for air connectivity to inaccessible areas. In the recent past, concepts such as flexible air space have been introduced by the Air Force jointly with AAI, to facilitate efficient flow of air traffic. This would result in avoiding circuitous route flying, in turn saving time and fuel and also avoid air-traffic congestion.

There is a need therefore to ensure co-ordinated growth in aviation not looking at only the Western models, but also from countries, which have overriding requirements of air defence as in the case of India. In 2007 as part of IAF’s Platinum Jubilee celebrations, when two young pilots from the Indian Air Force flew a micro light around the world in 80 days, while over flying the eastern coast of China, this benign aircraft had to zigzag many times possibly to avoid naval installations en route.

Apart from the opportunities for indigenous development and manufacture in the Military Aviation, there are similar opportunities in Civil Aviation. While about 30% of the indigenous content is being developed for the Armed Forces, there is practically ‘nil’ production for Civil Aviation. Indigenous content will not only save sizeable foreign exchange but will also lead to establishment of manufacturing base. In turn the sector will also help in creating more job opportunities within India. The resultant scale of products and the spin-off into other sectors such as auto, medical equipment using laser, fibre optics, nano and micro technology will attract sound investment by the Private sector in a PPP or other models.

Already some of the private companies like Mahindra, Reliance, L&T and Tata are manufacturing smaller aircraft UAVs, high fidelity simulators and parts of aircraft and helicopters to name a few. More companies namely Godrej, Kirloskars and Bharat Forge have set up subsidiaries in these fields. In order to encourage these and for nurturing many Small and Medium Enterprises (SME) we will need a sound policy mechanism with adequate safeguards for security and redundancy.

With mediums of air and space becoming pivotal in various fields of transportation, navigation, surveillance, imaging, communication backed by high technology aerospace industries; there is a need for establishing an enabling eco-system for synergy in all aspects of R&D, manufacturing, human resource training etc. Undoubtedly, the Indian Air Force, Indian Space Research Organization (ISRO), Civil Aviation and Public and Private enterprises will be the major stakeholder to ensure concerted end result. As the IAF celebrates its 82nd Anniversary this year, it would be befitting to form the much-needed Aerospace Commission to deal with the challenges and opportunities in this vital sector.

Conclusion

In the past few years due to various constraints the combat potential of IAF has been eroding. To overcome this shorten IAF has been struggling to maintain deterrence on both fronts with innovative use of various platforms and inter-theatre deployments. However, further reduction in IAF’s potential will be detrimental to National Security. Therefore, adequate budgetary support and timely decision making is urgently needed. Emphasis also needs to be laid on indigenous manufacturing capability of defence systems to reduce dependence on foreign suppliers. An enabling eco-system will help in achieving this synergistically.

I am certain that with resurgent policy making and budgetary support, the Indian Air Force will overcome various challenges and grow from strength to strength in the years ahead. I am also confident that the Air Warriors with their innovative approach will turn every challenge into an opportunity, so as to reach greater heights in future to ‘Touch the Sky and Space with Glory’.

Concluded...

What Nehru said...

The Government have a duty to their employees; they have also a duty to the community at large. So indeed, have the employees of the Government, for they are not merely salary and wage-earners. They have the privilege of being engaged in the high task of building a new India. They have to look upon their work in this light, and they have to consider their own welfare in terms of the welfare of the whole country.

July 7, 1960
A Lecture on Astrobiology in Ladakh: NASA Spaceward Bound India 2016

Siddharth Pandey, Doctoral Researcher (Space Engineering), School of Engineering and Information Technology University of New South Wales- Australian Defence Force Academy, Northcott Drive, Australia delivered a Space Science Lecture on Astrobiology in Ladakh: NASA Spaceward Bound India 2016 on Saturday, 26 March 2016 at 5 pm. in the Hall of Culture, Discovery of India Building, Dr. Annie Besant Road, Worli, Mumbai 400018. We bring you the summary of the talk.

The Spaceward Bound Program is an educational program developed at NASA Ames Research Center.

The objective is for participating scientific researchers, educators and students to visit remote and extreme environments in different parts of the world and conduct astrogeological/biological experiments make observations and learn about the origin, sustenance and adaptation of living organisms within such biospheres.

Previous spaceward bound expeditions have been conducted in the Mohave Desert USA, North Dakota USA; Idaho USA, Western Australia, Namibian Desert, UAE, Antarctica; high Arctic regions, New Zealand.

Traditionally, after the scientific theme of the expedition has been defined, (for example, hot acidic lakes, cold-dry desert, hot-dry desert, etc.), a team consisting of scientists, educators and students visits the site, each with their own objectives to accomplish.

The scientists collect samples, conduct preliminary on-site sampling, make observations, and the work usually results in publish worthy data. The educators act as science communicators and help bridge the scientists with the students and enable the participating students to observe and record important features and outcrops along the course of the expedition. The students absorb everything and engage in discussions with the scientists, sometimes also helping them conduct their experiments.

As a start, it was decided to select the Ladakh region for this program. No comparative study between the sites was conducted and it is the intention to eventually revisit India and conduct astrobio/geological research at the other sites as well. Some of the factors that played a role for the selection of Ladakh region were:

• Availability of several astrobio/geologically interesting features within same region and coverable distances, such as: cold high altitude desert soils, hot springs, permafrost, glaciers, saline and palaeo-lakes.
• Low human habitation/intervention which has resulted in pristine eco-systems, very appropriate for terrestrial analogue studies.
• High altitude environment for conducting human dexterity and performance based tests.
• Remoteness and difficult to access regions simulating the challenges of transportation, resource utilization and communication of Off Earth human missions.
• High altitude clear night skies for astronomy and astrophotography.
• Utilize the appeal and ‘out of this world’ landscape to complement the science education promotion goals of this pilot project.

The expedition shall be held from August 09-19 2016 in Ladakh region of India. There shall be two transects followed, one from Leh to Nubra Valley, other from Leh to Tso Moriri. The team shall be interacting with school children from various schools in the region. A one-day Space Forum event is planned in New Delhi as a culmination of the meeting on August 21 2016.
We do not expect to have good many clear windows for observing during the monsoon months. But the atmosphere, washed clean by the rains does provide some spectacular observing opportunities. Also after the summer solstice last month the day hours will now be getting shorter and night time longer.

Let us take a quick look at what we have in store this July 2016.

On 2nd July crescent Moon will be less than a degree from Aldebaran (Rohini), just before the sunrise. Then later on 29th it will be even closer to the star when it passes less than half a degree from it.

The new moon is on July 4th and then thin lunar crescent becomes visible above the western horizon. The evening sky has three planets – Jupiter, Mars and Saturn as well has three bright stars close to the ecliptic. On successive days the moon can be seen close to these celestial bodies.

Crescent Moon can be seen just about half a degree south of Regulus (Magha) on 7th.

On 9th it passes within one and a half degrees from Jupiter.

On 12th July it will be about three and half degrees from Spica and two evenings later it is close to Mars (on 14th). And then on 16th it is passes close to Saturn.

The Full Moon occurs on 20th July at 04:27 IST. This full moon of Hindu month Ashadha is celebrated as Guru Pournima. For early Native American tribes it was the Full Buck Moon because the male buck deer would begin to grow their new antlers at this time of year. This moon has also been known as the Full Thunder Moon and the Full Hay Moon.

The map shows slightly more sky than that will be visible from a given location. Thus the map can be used elsewhere in India at 21:00 hrs Indian Time. Hold the chart vertically before your eye sand turn it until the geographical direction you are facing shows at the bottom of the chart.

### Phases of the Moon (timings in IST hh:mm)

<table>
<thead>
<tr>
<th>New Moon (Amavasya)</th>
<th>First Quarter (Shukla Paksha Ashtami)</th>
<th>Full Moon (Poornima)</th>
<th>Last Quarter (Krishna Paksha Ashtami)</th>
</tr>
</thead>
</table>

(Disclaimer: The Indian names of the stars and planet, given in parenthesis for the purpose to remind the reader that India has a rich astronomical tradition. We do not subscribe to astrology.)
It is a thematic programme based on dance, drama and music.

Participating artistes are:

**Shri Sanjiv Chimmalgi** - Vocal
Accompanied by others

**Smt. Bhakti Deshpande-Deshmukh**
will present Kathak Dance

**Smt. Sujatha Nair**
will present Bharat Natyam

Musical score by
**Shri Narayan Mani**

Thursday, 14th July 2016
6.30 pm
Nehru Centre Auditorium

**Review:** “पाऊस असा रूणज्ञणता”

The programme organized on 3rd June 2016 was based on the poetry and literature in Marathi language, on the Monsoon season.

Shri Tushar Dalvi, Smt. Pratiksha Lonkar and Shri Sunil Barve recited poetries on Monsoon and also narrated some of the excerpts from various literatures on Monsoon.

The programme was researched and coordinated by Smt. Uttara Mone.

The programme was well attended and appreciated by the audience.
Programmes for July 2016

“PURSUIT OF LIGHT”
by SUJATA KELKAR

Sujata is an architect by profession. She has completed G.D.Arch. from Rachana Sansad’s Academy of Architecture, Mumbai and M.E. in Town & Country Planning from Pune. Pursuit of Light is a pictorial narration of her emotions and realizations during her deep personal loss. Her paintings are on various subjects in oils and acrylics on canvas.

Monday 4th July to Sunday 10th July 2016
( AC Gallery )

NIMISHA SHAH .
HARISHITA CHASIA .
SOUMYA MJUJMIDAR

Nimisha has learnt painting in Mumbai. She has had some exhibitions. Her paintings are compositions in acrylic on canvas.

Harshita is a self taught artist. Her paintings are compositions in acrylic colours.

Soumya is also a self taught artist. Her abstract paintings are in oils and acrylics.

Tuesday 12th July 2016 to Monday 18th July 2016
AC & Circular Gallery

Painting by Sujata Kelkar

Painting by Mahavir Patil

Painting by Kuldip Sharma

Painting by Nilesh Patil

Painting by Meenakshi Wadhwa

Sculpture by Kishore Purekar

Painting by Promila Kaul

Painting by Nimisha Shah

Nehru Centre Newsletter - July 2016
PHOTOGRAPHY EXHIBITION

Bharati Vidyapeeth’s School of Photography, Pune will showcase the works of students in their Annual Show. This school of photography creates a platform to converge the newest infrastructure with the finest faculty, helping students to thrive in the ever evolving world of media.

Tuesday 19th July to Monday 25th July 2016
( AC & Circular Gallery )

NAGESH SIRSAL

Nagesh obtained degree in Applied Art from Abhinav Kala Mahavidyalaya, Pune. He worked with several leading media houses in Mumbai.

Besides graphic design, he does caricatures also. His paintings are of geometric forms.

Tuesday 26th July to Monday 1st August 2016
( AC Gallery )

ASHWINEE NANAL

Ashwini completed graduation in Applied Art from Pune. The theme of her paintings is ‘Mother Nature’. Her paintings are in acrylic on canvas.

Tuesday 26th July to Monday 1st August 2016
( AC Gallery )

Library

KAHANI KARNIVAL - CHILDREN’S LITERATURE FESTIVAL

A review

On May 16, 2016, Nehru Centre Library organized the first Children’s Literature Festival for children aged 2-12 years old. The festival was curated by Kahani Karnival. The event was a full-day event from 10.30 am to 5.00 pm. It was conducted at three venues simultaneously - the Library, Who Are We Hall and Hall of Harmony.

In the Warli Hall, a book pavilion was set up by Kahani Tree, in which a variety of books were displayed for children. Books written by the resource persons for the event as well as other childrens books by various India and foreign authors were available. It was a great experience to showcase Indian books by small independent Indian publishers to a wide and varied audience, that had travelled from far and wide to come for this event. It was good to be able to talk to them about books in Indian languages and the benefits and importance of reading aloud to young children, in order to raise readers.

Children enjoyed browsing through the colourful displays in the book pavilion.

Sananda Mukhopadhyaya showed children how to make a book.

Natasha Sharma introduced her new book Princess Easy Pleasy to the children.

Museologist Alisha Sadikot took the children down history in the DOI exposition.

Parents enjoyed browsing through the colourful displays in the book pavilion.
New Arrivals: Books

Sr. No. Title Author/s
1. Dreaming big: My journey to connect India Sam Pitroda with David Chanoff
2. On my terms: From the grassroots to the corridors of power Sharad Pawar
3. 30 women in power: Their voices, their stories Naina Kidwai Ed.
4. JS and the times of my life: A worm’s eye-view of Indian journalism Jug Suraiya
5. Editor unplugged: Media, magnates, netas and me Vinod Mehta
6. Iqbal: The life of a poet, philosopher and politician Zafar Anjum
7. The dramatic decade: The Indira Gandhi years Pranab Mukherjee
8. The man who bombed Karachi: A memoir S. M. Nanda
9. G. A. Natesan and national awakening Prabha Ravi Shankar
10. Healing the body, touching the heart: The life and times of Dr. L. M. Sanghvi Nita Mukherjee