

Committed To Defence And Security Worldwide

www.dsalert.org | info@dsalert.org

DEFENCE & SECURITY ALERT

SAARC COUNTRIES: US \$25

Rest of the World: US \$30 | INDIA ₹150

The First and Only ISO 9001:2015 Certified Defence and Security Magazine in India

The Only Magazine Available On The Intranet Of Indian Air Force

AUGUST 2024

VOLUME 15 | ISSUE 11

VITAL ROLE OF



DSA®

THE FIRST CHOICE IN THE DOMAINS OF
DEFENCE, SECURITY AND WORLD
AFFAIRS WORLDWIDE

14 YEARS OF
STRATEGIC
SAGA





MISSION

We endeavour to sound **ALERTS** and create **AWARENESS** about the myriad dimensions and manifestations of **DEFENCE** and **SECURITY** in India and around the world.



The power of a King lies in his mighty arms...

Security of the citizens at peace time is very important because State is the only saviour of the men and women who get affected only because of the negligence of the State.

- Chanakya

INDIA'S DEFENCE GIANTS



Nobody knew 70 years back that DRDO, ISRO, BARC and BRO would become so important and vital in the new Century.

Today these organisations are like the backbone of the National Security. Their active role may not be very visible to a common man but anyone who has some interest in the National Security concerns is very well aware about these organisations and their vital role too.

But one thing is very much clear that all these organisations are dedicated and committed solely to India's national security. Their primary objectives are to conduct research, development and innovations for the defence and security forces. Although all the people related to the defence and security forces are well aware about these organisations; their objectives and their contribution in the nation-building as well as in the national security. I would still like to provide a short note on these organisations for readers who are not very aware of them from my perspective.

So, let's start with DRDO which was established in 1958 by then Prime Minister and its primary objectives were to conduct the hardcore research and development of various technologies and products for the

defence forces of India. Initially, its headquarters was established in New Delhi with minimum infrastructure but gradually, it expanded with various laboratories across the country. The expansion plan was quite robust to develop and equip our defence and security forces with special clothing, vision goggles, helmets, shoes, and special energy foods to face natural challenges in the high-altitude regions at the borders. Today, DRDO has more than 50 laboratories across the country where scientists are working religiously to develop various technologies and equipment for the soldiers. It would be an injustice not to mention the MBT Arjun tank, a commendable achievement by DRDO. There are many such contributions of DRDO in the interest of the National Security of India.

The next organisation is Indian Space Research Organisation (ISRO) is the space agency of India, which is dedicated and committed for India's space research programme. It was established in the year by Dr. Vikram A Sarabhai on 15 August 1969, and superseded INCOSPAR with an expanded role to harness space technology. DOS was set up and ISRO was brought under DOS in 1972. The prime objective of ISRO / DOS is the development and application of space technology for various needs in the country. ISRO has established major space systems for communication,

television broadcasting and meteorological services; resources monitoring and management; space-based navigation services to fulfil its objectives. To place the satellites in the required orbits, ISRO has developed satellite launch vehicles, PSLV and GSLV, to place the satellites in the required orbits.

Alongside its technological advancements, ISRO contributes to science education in the country. Various dedicated research centres and autonomous institutions for remote sensing, astronomy and astrophysics, atmospheric sciences and space sciences in general function under the aegis of the Department of Space. ISRO's own lunar and interplanetary missions along with other scientific projects encourage and promote science education, apart from providing valuable data to the scientific community which in turn enriches science. Very recently, team ISRO had a major achievement by launching the Chandrayaan-3. The successful first-ever soft landing of Chandrayaan-3 on the "Moon's uncharted South Polar region". The Chandrayaan-3 was not only indigenous but also a very cost-effective mission, marking one of the biggest milestones in the field of space research and development worldwide.

The next organisation is BARC is a premier nuclear and multi-disciplinary research organisation though founded

BORDER ROADS ORGANISATION
RATHOLA 17 KM
SARATHANAG 12 KM
THERDU 14 KM
TAVCA 22 KM

primarily to serve India's nuclear program and its peaceful applications of nuclear energy does an extensive and advanced research and development covering the entire spectrum of nuclear science, chemical engineering, which is equally very important for the National Security and energy security. BARC was conceived by Dr. Homi Jehangir Bhabha with a vision for India's nuclear program. The Tata Institute of Fundamental Research (TIFR) was established by Dr Bhabha for carrying out nuclear science research in the year 1945. We cannot imagine that was the situation of energy in India some 80 years back when Dr. Bhabha envisioned the idea of generating energy for the requirements in India with a very minimal infrastructure. It was his long-term vision that has led to India being self-reliant in its energy requirements today, thanks to the peaceful applications of nuclear energy.

Last but not the least is the organisation which has been providing an excellent support to our defence apparatus by building strong roads in all the border areas which consists of all the roads leading to our international borders and that is, dear reader, our Border Roads Organisation (BRO). The Border Roads Organisation (BRO) is a road construction executive force in India that provides support to Indian Armed Forces. BRO develops and maintains road networks in India's border areas and friendly neighbouring countries. This includes infrastructure operations in 19 states and three union territories (including Andaman and Nicobar Islands) and neighbouring countries such as Afghanistan, Bhutan, Myanmar, Tajikistan and Sri Lanka. As of 2021, BRO had constructed over 60,000 kilometres (37,282 miles) of roads, over 450 permanent bridges with a total length of over 60,000 metres (37 miles) length and 19 airfields in strategic locations. BRO is also tasked with maintaining this infrastructure including operations such as snow clearance. BRO is instrumental in significantly upgrading and building new India-China Border Roads.

The support of BRO is great in making Indian borders very much safe and secured by providing world class roads for easy transportation and logistics during the peace as well as war times. Without the support of BRO, it would have been tough and troublesome for the defence and security forces to be deployed in the far-flung areas. But BRO has made it possible and easier for any kind of movement.

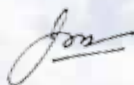
So, we can say that India is getting more safer and more secured with the excellent support of these organisations dedicated to the nation established some decades before but empowering currently.

This edition is dedicated to our premier organisations with excellent researched-based inputs by our expert contributors and you will get more insights on these organisations.

I am sure you will appreciate this edition of DSA too.

In the end, I would like to congratulate every Indian on a "Very Happy Independence Day".

JAI HIND!



Pawan Agrawal
Chief Executive Officer



An ISO 9001:2015 Certified Magazine

Volume 15 | Issue 11 | August 2024

Founder Late Sh. Shyam Sunder
Publisher and CEO Pawan Agrawal
President Urvashi J Agrawal
Director Prabhat Agrawal
Director Piyush Agrawal
Director Shishir Bhushan

Editor-in-Chief Manvendra Singh

Officer on Special Duty (OSD)
Natasha

Research Associate
Chander Shekhar

Art & Creative
Dolly Jain

Correspondent (North East)
Monalisa Gogoi

Correspondent (J&K)
Salil Sharma

Correspondent (Europe)
Dominika Cosic

Production
Rishabh Agarwal

IT Operations
Amber Sharma

Administration
Sourabh Chauhan

Legal Advisors
Deepak Gupta / Nitin Jain

E-mail: (first name)@dsalert.org
info: info@dsalert.org
articles: articles@dsalert.org
subscription: subscription@dsalert.org
online edition: online@dsalert.org
advertisement: advt@dsalert.org

Editorial and Corporate Office
Prabhat Prakashan Tower
4/19, Asaf Ali Road
New Delhi-110002 (India)
+91-011-23243999, 23287999, 9958382999
info@dsalert.org | www.dsalert.org

Disclaimer

All rights reserved. Reproduction and translation in any language in whole or in part by any means without permission from Defence and Security Alert is prohibited. Opinions expressed are those of the individual writers and do not necessarily reflect those of the publisher and/or editors. All disputes are subject to jurisdiction of Delhi Courts.

Defence and Security Alert is printed, published and owned by Pawan Agrawal and printed at SRG Traders Pvt. Ltd., B-41, Sector-67, Noida (U.P) and published at 4/19, Asaf Ali Road, New Delhi (India). Editor: Manvendra Singh



ISRO, BARC, DRDO, BRO AND NATIONAL SECURITY

LT GEN PRAKASH KATOCH
PVSM, UYSM, AVSM, SC (RETD)

GUARDIANS OF THE SKIES: ISRO'S ESCALATION IN SPACE-BASED SECURITY

DR JYOTSANA MISHRA

NATIONAL SECURITY ARCHITECTURE

COL DILIP PRASAD
SM (RETD)

NATIONAL SECURITY AND NATIONAL ORGANISATIONS

ARPITA SHARMA

04

UNDERSTANDING THE CHAKRAVYUHA THAT IS, "THE NATIONAL SECURITY"

KRITI SINGH

30

12

NATIONAL SECURITY THROUGH DEFENCE INSTITUTES

ASHUTOSH KUMAR

34

20

BRO OVER THE YEARS: PURSUITS AND CHALLENGES

AMRITHA V. MENON

38

26

ENHANCING DEMOCRATIC ENGAGEMENT: AN ANALYSIS OF ELECTORAL TURNOUT IN INDIA'S 2024 GENERAL ELECTION

ANKIT SAHU

42

GREEN OPTIONS IN AIRCRAFT PROPULSION SYSTEMS

SUMAN SHARMA

48