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CONTENTS

S. No.	TITLE		Page No.
	DRDO News		1
	DRDO on Twitter		1
	Defence News		2-31
	Defence Strategic: National/International		2-31
1.	Status of Country's Defence Exports	<i>Press Information Bureau</i>	2
2.	Self Reliance in Defence Sector	<i>Press Information Bureau</i>	4
3.	Import and Export in Defence Sector	<i>Press Information Bureau</i>	6
4.	Defence, Aerospace Exports Treble to Rs 12,815 Cr in 5 Years: Govt	<i>Business Standard</i>	8
5.	Defence Ministry to Discuss Indian Army Proposal for Acquiring 354 'Zorawar' Light Tanks	<i>ANI</i>	9
6.	LAC के पास चीन के फाइटर जेट, ड्रोन तैनात	<i>नवभारत टाइम्स</i>	10
7.	नए युद्धपोत से कितनी बढ़ेगी देश की ताकत	<i>नवभारत टाइम्स</i>	11
8.	Indigenisation of Defence Forces: Connecting the Dots	<i>Financial Express</i>	13
9.	Guns and Butter: Govt Must Review its Military Spending	<i>Business Standard</i>	15
10.	Naval Milestone: Fix Deficiencies for Robust Indigenization	<i>The Tribune</i>	16
11.	Bangladesh Air Force Chief Visits Barrackpore Air Force Station in West Bengal, Interacts with Personnel	<i>The Print</i>	17
12.	Tawang Clash: Sixty Years on, Why doesn't India have a China-Specific Strategy?	<i>The Indian Express</i>	18
13.	हथियारों के पीछे इतनी पागल क्यों हुई है दुनिया	<i>नवभारत टाइम्स</i>	20
14.	\$320-Billion Military Build-up: Why Japan is Scrapping its Pacifist Defence Strategy	<i>The Indian Express</i>	21
15.	Russia Deploys Avangard Missile into Combat Duty, What's this 'invincible' Weapon by Putin	<i>Republic World.com</i>	23
16.	Mounting Pressure from West? Russia to Participate in Joint Naval Drills with China this Week	<i>Times Now</i>	24
17.	Chinese JF-17 Jets : चीन-पाकिस्तान के 'कबाड़' को अर्जेंटीना ने खरीदने से किया इनकार, JF-17 फाइटर जेट की डील हुई कैंसल	<i>नवभारत टाइम्स</i>	25
18.	JF-17 Jet Fighters, Jointly Developed by Pakistan and China, Fails to Fulfil Promises: Report	<i>News18</i>	26

19.	Chinese Shupang Class Survey Ship Spotted in Japanese Territorial Waters	<i>The Print</i>	27
20.	Germany Pauses Purchases of Puma Tanks after Operational Problems	<i>Reuters</i>	28
21.	Ukraine to Boost Belarus Border Defences as Putin Meets Lukashenko	<i>BBC News</i>	29
22.	N Korea says Latest Launches Tested First Spy Satellite	<i>The Pioneer</i>	30

Science & Technology News			31-38
--------------------------------------	--	--	--------------

23.	To Space and Beyond: Gaganyaan Mission Set for 2023	<i>Financial Express</i>	31
24.	Centrally Funded Institutions Contributed 67.54 Per Cent of Total National Research Output: Study	<i>The New Indian Express</i>	33
25.	दुनिया को कितना बदलने जा रहा है ChatGPT	<i>नवभारत टाइम्स</i>	35
26.	AI का कमाल : देश के हर जिले की बोली सुनेगा गूगल ताकि इंटरनेट बने आसान	<i>नवभारत टाइम्स</i>	37

DRDO News

DRDO on Twitter



Defence News

Defence Strategic : National/International



Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Dec 2022

Status of Country's Defence Exports

Department of Defence Production issues authorisation for export of Munitions List items covered in Category 6 of Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET). At present, the exports are being made to more than 75 countries all over the world. Names of the countries cannot be divulged due to strategic reasons. Based on the value of Export Authorization issued by DDP to Private companies and actual export/contract done by DPSUs/OFB, the export value during the last three years is as under:

	2019-20	2020-21	2021-22	2022-23 (till date)
Total Export Value (in Crores)	9,116	8,435	12,815	6,058

To foster defence manufacturing ecosystem in the country, the Government has taken several policy initiatives in the past few years and brought in reforms to encourage indigenous design, development and manufacture of defence equipment, thereby promoting self-reliance in defence manufacturing & technology in the country. These initiatives, inter-alia, include according priority to procurement of capital items falling in Buy Indian (IDDM) Category from domestic sources under Defence Acquisition Procedure (DAP)-2020; Notification of four 'Positive Indigenization Lists' of total 411 items of Services and three 'Positive Indigenization Lists' of total 3,738 items of Defence Public Sector Undertakings(DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them; Simplification of Industrial licensing process with longer validity period; Rationalised Defence Product List which required Industry License; Liberalization of Foreign Direct Investment(FDI) policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Mission DefSpace; Launch of Innovations for Defence Excellence (iDEX) scheme involving Start-ups & Micro, Small and

Medium Enterprises (MSMEs); Implementation of Public Procurement (Preference to Make in India) Order 2017; Launch of an indigenization portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers; and Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu; Earmarking of 25% defence R&D Budget for industry led R&D; and Progressive increase in allocation of Defence Budget of military modernization for procurement from domestic sources.

Government has brought in various reforms including ease of doing business to achieve the target of US \$5 billion for defence exports by 2024-25 and to boost Defence exports. Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET) Category 6 titled 'Munitions List' that was hitherto 'Reserved' has been populated and Military Stores list notified vide Notification No.115(RE-2013)/2009-2014 dated 13th March 2015 stands rescinded.

The Director General of Foreign Trade (DGFT) vide Public Notice No. 4/2015-20 dated 24th April, 2017 has delegated its authority and notified Department of Defence Production (DDP) as the Licensing Authority for export items in Category 6 of SCOMET. The export of items specified in Category 6 (Munitions List) except those covered under Notes 2 & 3 of Commodity Identification Note (CIN) of the SCOMET is now governed by the Standard Operating Procedure issued by the Department of Defence Production (DDP), Ministry of Defence.

Standard Operating Procedure (SOP) for the export of munitions list items have been simplified and placed on the website of the DDP. A completely end-to-end online portal for receiving and processing export authorisation permission has been developed. The applications submitted on this portal are digitally signed and the authorisation are also issued digitally, at faster pace. In repeat orders of same product to the same entity, consultation process has been done away with and permission is issued immediately. For the repeat order of same product to different entity, the consultation earlier done with all stakeholders is now limited only with MEA.

In Intra-Company business (which is especially relevant for outsourcing of work by defence related parent company abroad to its subsidiary in India), the earlier requirement of getting End User Certificate (EUC) from the Government of importing country has been done away with and 'Buying' Company is authorized to issue the EUC. The requirement of Government signed EUC in cases of providing engineering services (ToT related to Munitions List) to Wassenaar Arrangement (WA) Countries has been dispensed with. Legitimate export of systems/platforms for civil end use to WA Member countries is considered subject to submission of EUC or import certificate or equivalent document issued by the Government of importing country. The legitimate export of the parts and components for civil use are now being permitted to WA Countries after prior consultation with MEA. For export of items for exhibition purposes, the requirement of consultation with stakeholders has been done away with (except for select countries).

Powers have been delegated to DRDO and CMDs of DPSUs for exploring export opportunities and participation in global tenders. New simplified End User Certificate Format for Parts & Components has been provided in SOP. Validity of Export Authorization for export of parts & components has been increased from 02 years to date of completion of order/component whichever is later. A new provision for re-exporting parts and components for undertaking repair

or rework to provide replacement for a component under warranty obligation is inserted in the SOP as a sub-classification of repeat orders.

MHA vide Notification dated 1.11.2018 has delegated its powers to Department of Defence of Production to issue export license under Arms Rules 2016 in Form X-A, for parts & components of small arms. With this, the Department of Defence Production becomes the single point of contact for exporter for export of parts and components of Small Arms & Ammunitions.

The Government has notified the Open General Export License (OGEL) – one-time export license, which permits the industry to export specified items to specified destinations, enumerated in the OGEL, without seeking export authorisation during the validity of the OGEL. OGEL has been integrated with end to end online Portal. Scheme for Promotion of Defence Exports has been notified to provide an opportunity to the prospective exporters an option to get their product certified by the Government and provides access to the testing infrastructure of Ministry of Defence for initial validation of the product and its subsequent field trials. The certificate can be produced by the prospective exporter for marketing their products suitably in the global market. A separate Cell has been formed in the Department of Defence Production to co-ordinate and follow up on export related action including enquiries received from various countries, sharing the leads with private sector & public sector companies and facilitate exports.

In order to boost defence exports, regular webinars are organized with Friendly Foreign Countries (FFCs) under the aegis of DDP, MoD through Indian Mission abroad and Industry Associations with active participation from Indian Defence Industries.

A Scheme to provide financial support to Defence Attaches for taking up actions for promoting Indian defence exports of both public and private sector in the countries to which they are attached, has been notified. A High-Level Committee (HLC) has been constituted under the Chairmanship of Raksha Mantri to facilitate faster clearances to export of major indigenous defence platforms to Friendly Foreign Countries.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Sujeet Kumar in Rajya Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1884818>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Dec 2022

Self Reliance in Defence Sector

The Government has taken several policy initiatives in the past few years and brought in reforms to encourage indigenous design, development and manufacture of defence equipment, thereby promoting self-reliance in defence manufacturing & technology in the country. These initiatives, inter-alia, include according priority to procurement of capital items of Buy Indian (IDDM) category from domestic sources under Defence Acquisition Procedure (DAP)-2020; Notification

of four 'Positive Indigenisation Lists' of total 411 items of Services and three 'Positive Indigenisation Lists' of total 3,738 items of Defence Public Sector Undertakings (DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them; Simplification of Industrial licensing process with longer validity period; Liberalization of Foreign Direct Investment (FDI) policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Mission DefSpace; Launch of Innovations for Defence Excellence (iDEX) scheme by involving Start-ups & Micro, Small and Medium Enterprises (MSMEs); Implementation of Public Procurement (Preference to Make in India) Order 2017; Launch of an indigenization portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers; and Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu; Earmarking of 25% of R&D Budget for Industry led R&D; Progressive increase in allocation of Defence Budget of military modernization for procurement from domestic sources, etc.

Our defence industry is now capable of manufacturing wide variety of high-end requirements e.g. Tanks, Armoured vehicles, Fighter aircrafts, Helicopters, warships, Submarines, Missiles, Electronic equipment, Special alloys, special purpose steels, and variety of ammunition. Rapid progress has been made towards achieving complete Aatmanirbharta in the manufacturing of defence equipment required by our Armed Forces within the country. As a result of these initiatives, many State-of-the-art products including 155 mm Artillery Gun system 'Dhanush', Light Combat Aircraft 'Tejas', Surface to Air Missile system 'Akash', Main Battle Tank 'Arjun', T-90 Tank, T-72 Tank, Armoured Personnel Carrier 'BMP-II/IK', Su-30 MK1, Cheetah Helicopter, Advanced Light Helicopter, Dornier Do-228, High Mobility Trucks, INS Kalvari, INS Khanderi, INS Chennai, Anti-Submarine Warfare Corvette (ASWC), Arjun Armoured Repair and Recovery Vehicle, Bridge Laying Tank, Bi-Modular Charge System (BMCS) for 155 mm Ammunition, Medium Bullet Proof Vehicle (MBPV), Weapon Locating Radar (WLR), Integrated Air Command and Control System (IACCS), Software Defined Radios (SDR), Lakshya Parachute for Pilotless Target Aircraft, Opto Electronic Sights for Battle Tanks, Water Jet Fast Attack Craft, Inshore Patrol Vessel, Offshore Patrol Vessel, Fast Interceptor Boat, Landing Craft Utility, 25 T Tugs, etc. have been produced in the country during the last few years.

Further, for the first time, a made-in-India Advanced Towed Artillery Gun (ATAG) howitzer gun developed by our industry was part of the 21-gun salute during the Independence Day celebration at Red Fort in Delhi.

An innovation ecosystem for Defence titled Innovations for Defence Excellence (iDEX) was launched in April 2018 to foster innovation and technology development in Defence and Aerospace by engaging Industries including MSMEs, Start-ups, Individual Innovators, R&D institutes and Academia. iDEX provides them grants/funding and other support to carry out innovations/R&D which has potential for future adoption for Indian defence and aerospace needs. Under iDEX, 233 problems have been opened, 310 Start-ups have been engaged, 140 contracts have been signed. 'iDEX Prime' framework under iDEX has been launched in 2022 to support Start-ups with Grant-in-Aid up to Rs 10 crore to enable the development of high-end solutions.

Till October 2022, a total of 595 Industrial Licences have been issued to 366 companies operating in Defence Sector. Government has also established two Defence Industrial Corridors,

one each in Uttar Pradesh and Tamil Nadu to attract investments in Aerospace & Defence sector and established a comprehensive defence manufacturing ecosystem in the country. Moreover, the respective State Governments have also published their Aerospace & Defence Policies to attract private players as well as foreign companies including Original Equipment Manufacturers (OEMs) in these two corridors. The two State Governments have already signed MoUs/Agreements with various industries for investment worth total value of about Rs 24,000 crore. Investments worth Rs 2,242 crore and Rs 3,847 crore have been made in Uttar Pradesh Defence Industrial Corridor (UPDIC) and Tamil Nadu Defence Industrial Corridor (TNDIC) respectively.

The Government, in the last three years i.e. from 2019-20 to 2021-22 and current year (2022-23 up to September, 2022), has accorded Acceptance of Necessity (AoN) to 163 proposals worth Rs 2,46,989.38 crores approximately, under various categories of Capital procurement which promote domestic manufacturing as per DAP-2020.

The share of domestic procurement in the total procurement has been on an uptrend. In 2018-19, the domestic procurement stood at 54% of the total procurement, this figure jumped to 59% in 2019-20 and to 64% in 2020-21. This year it has been increased to 68% for domestic procurement, of this 25% budget has been earmarked for procurement from private industry.

With focus of Government on indigenisation and procurement of defence products from the domestic resources, the expenditure on defence procurement from foreign sources has reduced from 46% to 36% in the last four years i.e. from 2018-19 to 2021-22.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Rakesh Sinha in Rajya Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1884817>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 19 Dec 2022

Import and Export in Defence Sector

Details of net Budget provided to Ministry of Defence (All four Grants) in Budget Estimates (BE), Revised Estimates (RE) from 2017-18 to 2022-23 are tabulated below:

(Rs. in crore)

Years	BE Allocations	RE Allocations
2017-18	3,59,854.12	3,74,003.85
2018-19	4,04,364.71	4,05,193.85

2019-20	4,31,010.79	4,48,820.10
2020-21	4,71,378.00	4,84,736.06
2021-22	4,78,195.62	5,02,883.54
2022-23	5,25,166.15	----

The quantum of import and export carried out in defence sector from 2017 to 2022, year-wise is tabulated below:

(Rs. in crore)

IMPORT	
Year	Foreign Procurement*
2017-18	37,030.89
2018-19	45,705.57
2019-20	47,961.47
2020-21	53,118.58
2021-22	50,061.68

*Foreign procurement includes procurements made towards purchase of Defence stores/equipments under both, Revenue and Capital segments.

(Rs. in crore)

EXPORT	
Year	Export Value of Authorisations issued
2017-18	4,682
2018-19	10,746
2019-20	9,116
2020-21	8,435
2021-22	12,815

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Ghanshyam Tiwari in Rajya Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1884814>

Defence, Aerospace Exports Treble to Rs 12,815 Cr in 5 Years: Govt

By Ajai Shukla

Painting a mixed picture of defence exports and imports, the defence ministry told Parliament on Monday that foreign procurement in defence has risen to Rs 50,061 crore in 2021-22 from Rs 37,030 crore in 2017-18. Meanwhile, defence and aerospace exports have risen to Rs 12,815 crore from Rs 4,682 crore during the same period.

Improvements in innovation

STATUS CHECK

Quantum of import and export carried out in defence sector (in ₹ cr)

■ Export authorisations issued
■ Foreign procurement*



*Includes procurements made towards purchase of defence stores/equipment under both revenue and capital segments

The ministry told Parliament on Monday that there has been good progress in the innovation ecosystem for defence, titled “Innovations for Defence Excellence” or (iDEX).

The iDEX scheme was launched in April 2018 to foster innovation and technology development in defence and aerospace by engaging industries including medium, small, and micro enterprises (MSMEs), start-ups, individual innovators, research and development (R&D) institutes, and academia. “Under iDEX, 233 problems have been opened, 310 start-ups engaged, 140 contracts signed,” stated the defence ministry. In addition, an “iDEX Prime” framework has been launched under iDEX in 2022 to support start-ups with grants-in-aid up to Rs 10 crore, to enable the development of high-end solutions, stated the defence ministry in a written reply.

“Till October 2022, a total of 595 industrial licences have been issued to 366 companies operating in the defence sector,” stated the MoD. On Friday, the MoD had stated in reply to a question on indigenisation: “The value of indigenous defence production for financial years 2020-2021 and 2021-2022 are Rs 84,643 crore and Rs 94,846 crore, respectively.” “To achieve Aatmanirbharta (self-reliance) and realise the goal of “Make in India,” the MoD cited the establishment of two Defence Industrial Corridors (DICs) – one in Uttar Pradesh and other in Tamil Nadu.

Six nodes – Agra, Aligarh, Chitrakoot, Jhansi, Kanpur, and Lucknow – have been identified for developing the Uttar Pradesh Defence Industrial Corridor (UPDIC), stated the MoD. Similarly, five nodes – Chennai, Coimbatore, Hosur, Salem, and Tiruchirappalli -- have been identified for developing the Tamil Nadu Defence Industrial Corridor (TNDIC). According to the Uttar Pradesh (UP) government, 105 Memoranda of Understanding (MoUs) have been signed with industries, worth potential investments of Rs

12,139 crore. Already, Rs 2,422 crore have been invested in UPDIC. Total 1,608 hectares of land have been acquired for development of UPDIC. Meanwhile, the Tamil Nadu government says arrangements have been made through MoUs, etc. for potential investment of Rs 11,794 crore by 53 industries. Already, Rs 3,847 crore have been invested in TNDIC. Total 910 hectares of land has been acquired for development of TNDIC.

Ordnance Factory Board

Seven new defence public sector undertakings (DPSUs) carved out of the erstwhile Ordnance Factory Board (OFB) have been incorporated as government companies (wholly owned by the central government) under the Companies Act 2013 in October 2021. The MoD stated in Parliament on Friday that the government has taken steps to handhold and support these new defence companies. For this, the OFB's outstanding indents were grandfathered and converted into deemed contracts valuing about Rs 70,776 crore for the next five years.

These deemed contracts provide annual targets for delivery of products. Every year, 60 per cent of the amount pertaining to that year's target would be paid by the Services to the new DPSUs as advance as per terms and conditions stipulated in the deemed contract.

Defence public sector undertakings

The advances provide working capital to the new DPSUs for widening their customer base, including exports to augment the volume of defence production. The DPSUs are pursuing export opportunities through interaction with Defence Attaches at Indian embassies and missions abroad.

https://www.business-standard.com/article/economy-policy/defence-aerospace-exports-treble-to-rs-12-815-cr-in-5-years-govt-122121901088_1.html



Mon, 19 Dec 2022

Defence Ministry to Discuss Indian Army Proposal for Acquiring 354 'Zorawar' Light Tanks

The Defence Ministry will take up an important Army proposal for the development of light tanks for deployment on the China border at a meeting scheduled to be held later this week. The high-level meeting of the Defence Ministry will discuss the proposal for buying 354 of these tanks under Make in India, government sources told ANI. The Indian Army has issued specifications for its future light tank which has been named 'Zorawar'. The tank has been named after the legendary general who led multiple successful victories in Tibet which is now controlled by the Chinese Army. Army officials said that to overcome the limitations faced by medium battle tanks and equip the Indian Army for all contingencies in High Altitude Area (HAA), marginal terrain and island territories besides its utilisation in the plains, semi-deserts and deserts, it is now important to induct light tanks. The Indian Army had to induct a considerable number of T-72 and T-90 tanks in operational areas, gaining tactical surprise over the adversary and thereby forcing the adversary on a back foot. "However, the tanks were primarily designed for operations in plains and desert terrain having their own limitations when

employed in high altitude Areas. They face a similar handicap when employed in marginal terrain of Rann of Kutch," an official said.

<https://www.aninews.in/news/national/general-news/defence-ministry-to-discuss-indian-army-proposal-for-acquiring-354-zorawar-light-tanks20221219211701/>

नवभारत टाइम्स

Tue, 20 Dec 2022

LAC के पास चीन के फाइटर जेट, ड्रोन तैनात सैटलाइट तस्वीरों में दिखाई दिए जंगी जहाज

■ एनबीटी न्यूज डेस्क

चीन ने अरुणाचल के तवांग में झड़प से ठीक पहले भारतीय सीमा के नजदीक बड़े पैमाने पर युद्धक तैयारी कर ली थी। रिपोर्टों के मुताबिक, ताजा सैटलाइट तस्वीरों से पता लगा है कि तवांग से कुछ ही सौ किलोमीटर की दूरी पर स्थित तिब्बत के कई एयरबेस पर चीन ने बड़े पैमाने पर फाइटर जेट और ड्रोन विमान तैनात किए हैं। चीन के इन हथियारों के निशाने पर सीधे तौर पर भारत का पूर्वोत्तर का इलाका है। यह खुलासा ऐसे समय पर हुआ है, जब तवांग में झड़प के बाद चीन ने अपनी हवाई हरकत को बढ़ा दिया है। यही वजह है कि भारतीय वायुसेना को भी दो बार अपने सुखोई लड़ाकू विमानों को भेजना पड़ा है।

रिपोर्टों के मुताबिक, भारत ने चीनी विमानों को भारतीय सीमा के पास देखा था। तवांग से मात्र 150 किमी की दूरी पर स्थित बांगडा एयरबेस पर चीन ने अपने अत्याधुनिक WZ-7 'सौरिंग ड्रैगन' ड्रोन को तैनात किया है। इस ड्रोन



का आधिकारिक रूप से साल 2021 में अनावरण किया गया था। यह ड्रोन विमान कम से कम 10 घंटे तक उड़ान भर सकता है। यह ड्रोन विमान खुफिया जासूसी और निगरानी करने में माहिर माना जाता है। यही नहीं यह ड्रोन विमान जमीन पर हमला करने के लिए क्रूज मिसाइलों को डेटा ट्रांसमिट कर सकता है। इसकी मदद से चीनी सेना दूसरे ड्रोन या फाइटर जेट और मिसाइल की मदद से निशाना लगा सकेगी। 14 दिसंबर की बांगडा एयरबेस की तस्वीरें

बताती हैं कि दो फाइटर जेट एयरबेस पर मौजूद हैं। ये विमान ठीक उसी तरह के हैं जैसे भारत ने रूस से सुखोई-30 एमकेआई को खरीदा है।

बता दें कि राहुल गांधी ने पिछले सप्ताह जयपुर में संवाददाताओं से बातचीत में आरोप लगाया था कि चीन झड़पों तक नहीं रुकने वाला। उसने युद्ध की तैयारी कर ली है। उन्होंने आरोप लगाया था कि चीन ने भारत के 2,000 वर्ग किलोमीटर क्षेत्र पर कब्जा कर लिया है।

नवभारत टाइम्स

Tue, 20 Dec 2022

चीन की बढ़ती आक्रामकता के मद्देनजर नौसेना की ताकत में इजाफा करना भारत की जरूरत है

नए युद्धपोत से कितनी बढ़ेगी देश की ताकत



रंजीत कुमार

पिछले सप्ताह 18 दिसंबर को भारतीय नौसेना के वेड़े में शामिल नवीनतम युद्धपोत गाइडेड मिसाइल डिस्ट्रॉयर आईएनएस मोरमुगाव भारत की तेजी से बढ़ती नौसैनिक ताकत का प्रतीक है। हिंद महासागर से लेकर प्रशांत

सागर तक यह युद्धपोत जब विचरण करेगा तो दुश्मन का कोई भी युद्धपोत इसके तीन सौ किलोमीटर के दायरे में फटकने की हिम्मत नहीं करेगा। अपने हित के समुद्री इलाके पर प्रभुत्व स्थापित कर यह युद्धपोत भारत की समुद्री संप्रभुता और हितों को सुरक्षित रखने में अहम भूमिका निभाएगा। पिछले दो सितंबर को नौसेना को मिलने वाले विमानवाहक पोत आईएनएस विक्रान्त के बाद एक और गाइडेड मिसाइल डिस्ट्रॉयर के नौसेना में शामिल होने से भारत की नौसैनिक हमलावर क्षमता में इजाफा हुआ है।

क्या है खासियत

- तीन सौ किलोमीटर दूरी तक मार करने वाली ब्रह्मोस क्रूज मिसाइलों से लैस यह युद्धपोत समुद्री और तटीय ठिकानों और बंदरगाहों की रक्षा में हर तरह से समर्थ साबित होगा।
- यह पोत सतह से आसमान में मार करने वाली इस्त्राइली बराक-8 मिसाइलों से भी लैस होगा, जो दुश्मन के लड़ाकू और टोही विमान, ड्रोन, पोतनाशक मिसाइल जैसे खतरों से 70 किलोमीटर दूरी पर आसमान में ही निपट लेगा।
- पोत पर तैनात दो हेलिकॉप्टर दुश्मन की पनडुब्बियों का पता लगाकर उन्हें डुबोने की क्षमता से लैस होंगे।
- इस पोत की एक विशेषता यह है कि दुश्मन के रडार इसे देख नहीं सकेंगे।

जाहिर है, हिंद महासागर से लेकर दक्षिण चीन सागर तक समुद्री हितों की रक्षा में देश में बने मोरमुगाव जैसे युद्धपोतों की अहम भूमिका होगी। चूंकि देशों के बीच सामरिक होड़ अब समुद्र की ओर मुड़ रही है, भारतीय नौसेना की ताकत में लगातार इजाफा करते रहने की जरूरत है।

गोवा से कनेक्शन

भारतीय नौसेना के प्रॉजेक्ट 15-बी के तहत बनाया गया यह दूसरा पोत है। यह महज संयोग नहीं कि गोवा के बंदरगाह मोरमुगाव के नाम से यह पोत ठीक 18 दिसंबर को नौसेना में कमिशन किया गया, जब 61 साल पहले गोवा को पुर्तगाल की दासता से मुक्त कराया गया था। मोरमुगाव पोत दुनिया के मौजूदा सभी विध्वंसक पोतों की तुलना में तकनीकी तौर पर अधिक उन्नत है और इसकी हमलावर क्षमता कहीं अधिक है।

- प्रॉजेक्ट-बी के तहत पहला युद्धपोत आईएनएस विशाखापट्टनम पिछले साल दिसंबर में नौसेना को सौंपा गया था।
 - इस वर्ग (15-बी) के तहत दो और पोतों- इंफाल और सूरत- का निर्माण स्वदेशी प्रयासों से मुंबई स्थित मझगांव गोदी में किया जा रहा है।
 - इसके पहले प्रॉजेक्ट 15-ए के तहत तीन युद्धपोत -आईएनएस कोलकाता, कोच्चि और चेन्नै- नौसेना को सौंपे जा चुके हैं।
 - प्रॉजेक्ट 15 के तहत आईएनएस दिल्ली, मैसूर और मुंबई का निर्माण किया गया था। प्रॉजेक्ट 15, 15-ए और 15- बी के तहत बने विध्वंसक पोतों (डिस्ट्रॉयर) की डिजाइन नौसेना के अपने ही वॉरशिप डिजाइन ब्यूरो द्वारा बनाई गई है।
- वर्तमान में नौसेना के ऑर्डर पर बनने वाले 44 युद्धपोतों और पनडुब्बियों में 42 का निर्माण भारतीय शिपयार्डों में किया जा रहा है। भविष्य में नौसेना

Contd...

भारत का 90 प्रतिशत से अधिक व्यापार समुद्र के जरिए ही होता है। व्यापारिक जहाजों की सुरक्षित आवाजाही सुनिश्चित करने की जिम्मेदारी नौसेना की ही है

के लिए 55 और युद्धपोतों के प्रस्ताव को हरी झंडी दिखाई गई है। इनका निर्माण भी भारतीय शिपयार्डों में ही किया जाएगा। इस तरह देखा जाए तो रक्षा प्रणालियों और मंचों के स्वदेशी उत्पादन में भारत ने महत्वपूर्ण प्रगति की है।

तीनों सेनाओं में नौसेना ने ही शुरू से स्वदेशी क्षमता से बने पोतों को हासिल करने की नीति अपनाई है।

इसलिए नौसेना के अधिकांश पोत, मिसाइलों और इलेक्ट्रॉनिक युद्ध के सिस्टम्स का निर्माण देश में ही होता रहा है। इस कड़ी में देश में ही गाइडेड मिसाइल डिस्ट्रॉयर का निर्माण आधुनिकतम युद्धपोतों के वर्ग में एक बड़ी बात कही जा सकती है। नौसेना प्रमुख एडमिरल हरिकुमार ने कुछ दिनों पहले ही नौसेना दिवस के मौके पर कहा था: 2047 तक नौसेना पूरी तरह से देश में ही बने युद्धपोतों और युद्धप्रणालियों पर निर्भर करेगी।

प्रॉजेक्ट 15-बी के तहत चार युद्धपोतों के निर्माण के ऑर्डर जनवरी, 2011 में दिए गए थे। मोरमुगाव पोत का निर्माण कार्य जून, 2015 में शुरू हुआ था। रेकॉर्ड सात सालों में 7400 टन विस्थापन क्षमता वाले इस पोत का निर्माण कर मझगांव गोदी ने बेहतर कार्य दक्षता दिखाई है। पोत का 70 प्रतिशत हिस्सा

देश में ही बना है, लेकिन इसका इंजन बनाने में भारत अब तक महारत हासिल नहीं कर सका है। ऐसे युद्धपोतों में लगने वाला गैस टरबाइन का भी भारत को आयात करना पड़ता है। लेकिन इन बड़े युद्धपोतों में लगने वाली विशेष किस्म की जंगरहित स्टील का उत्पादन भारत में ही होने लगा है। इस तथ्य ने इन युद्धपोतों के स्वदेशी निर्माण को प्रोत्साहित किया।

समुद्र में होड़

ऐसे वक्त जब सागरीय इलाकों में बड़ी नौसैनिक ताकतों के बीच होड़ बढ़ती जा रही है, भारत को अपने समुद्री हितों की रक्षा के लिए नौसेना की ताकत को लगातार बढ़ाते रहना होगा।

- भारत का 90 प्रतिशत से अधिक व्यापार समुद्र के जरिए ही होता है। भारतीय व्यापारिक जहाजों की सुरक्षित आवाजाही सुनिश्चित करने की जिम्मेदारी भारतीय नौसेना को ही निभानी है।
- अफ्रीका के तटीय इलाके में समुद्री डाकुओं की हरकतों पर काबू पाकर नौसेना ने अपनी अहमियत साबित की है।
- अब चीन जैसे देशों की तेजी से विकसित होती नौसैनिक क्षमता के मद्देनजर भारत को भी उसी तरह की ताकत से लैस होना होगा।
- दक्षिण चीन सागर के रास्ते होने वाले भारत के समुद्री व्यापार को बाधित करने की क्षमता चीन रखता है। ऐसे में उसकी इस क्षमता को बेअसर करने के लिए भारत की नौसेना को हमेशा चौकस रहना होगा।

इसके लिए नौसेना को जरूरी शस्त्र प्रणालियों से लैस करते रहने की महत्वाकांक्षी योजना भी है ताकि वह न केवल हिंद महासागर पर अपना प्रभुत्व स्थापित कर सके बल्कि सुदूर प्रशांत सागर तक और इसके तहत दक्षिण चीन सागर में भी चीन की चुनौतियों से निवट सके।

Indigenisation of Defence Forces: Connecting the Dots

By Maj Gen Ashok Kumar, VSM (Retd)

When the Chinese incursions were reported at multiple locations in Eastern Ladakh in April 2020, it was an obvious deduction that the China problem is going to stay with reasonably higher chances of escalation. It is obvious that Chinese disregarded all bilateral agreements which resulted in Galwan clash wherein unarmed Indian soldiers were attacked by large size Chinese troops who were armed with a fatal attack just short of firing the bullet. The Galwan clash happened on 05 May 2010 and is a watershed moment in our bilateral relations.

While India had started 'Make in India' as early as in Sep 2014, 'AatmnirbharBharat' got formally launched on 13 May 2020 just within a week of the Galwan clash. Though the country has been working on self-reliance in multiple domains since independence, the real focus has emerged now especially in the indigenisation of the equipment to be used by the defence forces, be it Army, Air force or Navy. Even if the formulation of 'AatmnirbharBharat' was in the making for some time, its formal declaration immediately after the Galwan clash does indicate the serious necessity of indigenization effort for the defence forces. In addition to China breathing down on LAC in Eastern Ladakh as well as other places including its manifestation in Yangtse in Arunachal Pradesh on 9 December 2022, Russia-Ukraine conflict has exposed the chinks in Russian armour. At a time when our adversary, China is becoming increasingly belligerent, the Indian nation cannot afford to have its major equipment ex import even if the same is from friendly and trustworthy countries.

Multiple actions have been initiated by the Government to fast-track the indigenous production of the defence equipment be it for final products, their assemblies or sub components. Issues of four negative/positive lists have clearly indicated the details of items placed under import ban besides setting the timelines in which these have to be substituted by indigenous products. There are wide ranging initiatives in the form of iDEX, Technology Development fund, R&D related fund allocation, fund support for prototyping of the product needed by the defence forces as part of Make1 category and the list can be endless. There is increased transparency for vendor registration as well as requirement of buyers being stated to a reasonable extent. Despite all this, some major and important connecting dots appear to be missing.

These include

Need of Defence Industrial Corridors in Gujarat and Maharashtra

Government has announced two defence industrial corridors, one in UP and the other in Tamil Nadu. While such efforts are key to growth of concerned states including additional opportunities for employment, the country has to compress the timeframe for indigenisation. To make it happen, it has to focus on those regions which have larger and advanced industrial footprints. Industries in Gujarat as well as in Maharashtra are reasonably advanced. It can be understood from the fact that Rajkot in Gujarat alone is capable of producing almost all metallic products for our defence forces. While the country can continue developing Defence Industrial Corridors in UP and Tamil Nadu as announced earlier, there is an urgent need to announce two more defence industrial corridors, one each in Gujarat and Maharashtra in the coming budget as the country has to collapse the anticipated production times in view of rising China challenges. There is no luxury of time on our part.

Single Window Vendor Registration

Though vendor registration has been made 'online' in a large Number of cases , an Indian company needs to register as vendors with various organisations separately. This needs to be avoided. The better approach should be utilisation of GEM portal which must be mandatorily usable by all the defence buyers. Alternatively, a separate portal of the Department of Defence Production (DDP) could be offered for the purpose. This registration should be usable by all PSUs / DPSUs or other buyers. To make it successful and compliant, vendor registration practice with individual organisations should be done away with.

Translation cell

There are various cells which have been created in the MOD to fast-track the indigenous defence production but there are large gaps at the manufacturers end to understand the actual need. A translation cell needs to be suitably composed which can explain the details of products in negative/positive lists to the potential manufactures who can see the items physically which need to be indigenized including making the product available for producing in a time bound manner. This translation cell also needs to state the details of technology needed by acting as a layer between the concept and the execution.

Lack of Awareness

Despite proactivity of the Government and automation, there is a large gap between the manufacturers and the defence buyers, be it DRDO entities, DPSUs or the users themselves. The country has the capacity to indigenous close to 50 percent in a year itself provided this gap is breached. The DDP portal could not only list items to be indigenised but also give the photographs along with the contact Number of potential buyer where the quantum of items needed can be also stated upfront. We should be able to predict our needs for a decade at least not only in terms of new equipment but also the MRO/ sustenance needs of legacy as well as current equipment.

Need of Burying Whitehall System

While Britishers left India, Lord Whitehall had started a formal filing system which has kept our majority progress hostage to the ‘process’ and relegated the ‘product’ to secondary stage. It is a norm to follow the correct process even if it results in poor and delayed product but not the other way round. The current system has to be changed and better alternatives need to be adopted. The Collegium system could be one such model.

And there are many more such actions which need to be taken by the Government of the day. The time gap between China Conflict cannot be taken as ‘substantial’ for our Capacity building. Even with above steps being adopted, there will be substantial changes in the indigenisation domain of the equipment of the defence forces. Once technology is explained, the new India will be borne not only taking care of its own defence forces but also that of friendly foreign countries.

<https://www.financialexpress.com/defence/indigenisation-of-defence-forces-connecting-the-dots/2919271>

Business Standard

Mon, 19 Dec 2022

Guns and Butter: Govt Must Review its Military Spending

Editorial

It has been 10 days since the People’s Liberation Army clashed with Indian Army jawans in the Tawang sector of the Line of Actual Control (LAC), and the political furore as a consequence of the confrontation has not yet died down. Parliament has been repeatedly paralysed about the government’s response to the clashes, which the Opposition criticises as being too weak. Yet the fact is that the government is caught in something of a dilemma. It cannot at this point in time afford a high-profile clash with China along the LAC that would lead to an actual military test. The Indian military has been the subject of under-investment for so long that the outcomes of such a test are very hard to predict.

The fact is that the government has seen the troubled India-China relationship as forcing it to make a choice between development and security — between, as the old economics 101 textbooks had it, guns and butter. New Delhi has, in the past decade or so, decisively chosen “butter” over “guns”. Budgetary resources have been set aside for infrastructure and welfare spending, while the defence budget — even after paramilitaries and internal security are included — is at best 2.5 per cent of gross domestic product. Even within that, the vast majority is spent on personnel costs, especially on pensions after the introduction of the One Rank One Pension arrangement for political reasons. Very little is left over for capital spending, and even that capital outlay is generally already tied up in paying for existing or pre-decided purchases. Modernisation of the armed forces is therefore a distant dream. Under such circumstances, the government no doubt wishes heartily that the India-China relationship can be managed without any further open confrontation.

Yet that hope is clearly doomed to founder, given two facts. One is that the domestic political alignment of the government has clearly led the electorate to expect a certain muscularity in its statements and positions. Thus, for example, External Affairs Minister S Jaishankar insisted on Monday the government “would not allow” any “unilateral” changes to the LAC by the Chinese side and spoke of the “largest ever deployment” of Indian soldiers on the border. This is not the kind of rhetoric likely to appease hawks in Beijing. Nor is the tone of the government-friendly electronic news media, which has been running old videos of border clashes non-stop.

The second issue is that whatever New Delhi’s preferences as to guns over butter, Beijing also has a vote in the India-China relationship — and it has clearly chosen confrontation. Twice now the current Indian leadership has tried to reset relations with China, and each time that supposed reset has wound up being rendered moot by clashes at the border. In this context, rather than persisting with its current contradictory and self-deceiving path, the government will have to start re-investing in security starting with the next Union Budget. India has only one-fifth the per capita income of China, and so matching its northern neighbour militarily may be a tough ask. But effective deterrence of a larger neighbour needs smart strategy and spending choices, not matching budgets.

https://www.business-standard.com/article/opinion/guns-and-butter-122121901232_1.html

The Tribune

Tue, 20 Dec 2022

Naval Milestone: Fix Deficiencies for Robust Indigenization

Editorial

The Indian Navy pioneered indigenisation decades ago. There has been a renewed focus in recent years on ramping up development of equipment and systems. The commissioning of INS Mormugao is a reassuring step forward in the self-reliance programme, providing a boost to the country’s maritime capability. The Navy says nearly 40 ships and submarines are being built in Indian shipyards. Named after the historic Goan port, INS Mormugao undertook her first sea sortie on December 19 last year when Goa celebrated 60 years of liberation from Portuguese rule. Designed by the in-house Warship Design Bureau and constructed by Mazagon Dock Shipbuilders, over 75 per cent of its components are indigenous. Second of the four Visakhapatnam-class warships, the stealth-guided missile destroyer is packed with sensors, radar and weapon systems. It’s an occasion to savour.

There is recognition at the highest levels of policy formulation that next-generation locally-designed-and-built vessels hold the key to success in any future war. While there are signs of a maturing military-industrial complex in India, the slow turnaround by the naval shipyards is a matter of concern. All the more when the strategic focus is on the Chinese navy, which is increasing its power and reach at a rapid pace. Despite considerable efforts, warship construction endeavours continue to suffer from systemic deficits. A programme mired in delays and cost overruns needs a critical audit. The project to construct six next-generation conventional submarines has now been further delayed.

Shipbuilding has to be treated as a strategic enterprise, with budget requirements being taken care of on priority. To achieve greater participation from the private sector, the Navy has made available its facilities for testing, trials and tuning of equipment during the development stage. Established in 2020, the Naval Innovation and Indigenisation Organisation provides an interface for the academia and industry to interact with the Navy's capability development apparatus. Efforts are afoot to address the problem areas, but the challenges are formidable.

<https://www.tribuneindia.com/news/editorials/naval-milestone-462597>

ThePrint

Mon, 19 Dec 2022

Bangladesh Air Force Chief Visits Barrackpore Air Force Station in West Bengal, Interacts with Personnel

Bangladesh Air Force Chief, Air Chief Marshal Shaikh Abdul Hannan on Monday visited the Barrackpore Air Force Station in West Bengal and interacted with personnel, the Indian Air Force said. Hannan also visited the station's technical training school and helicopter unit, the Indian Air Force said. Hannan on Saturday reviewed the Combined Graduation Parade (CGP) at the Air Force Academy (AFA) in Hyderabad.

During the ceremony, 168 Flight Cadets were commissioned into the IAF. Wings were awarded to six officers of the Indian Navy, nine officers of the Indian Coast Guard and one officer from Vietnam. "The President's Plaque and CAS Sword of Honour were awarded to Flying Officer Ashutosh N Paliwal from the 210 Course," according to a tweet by the Indian Air Force.

"The President's Plaque was also awarded to Flying Officer Mayuresh Shelar and Flying Officer Akansha Kharb from the Navigation and Ground Duty Officers Course respectively," the tweet further read. Air Chief Marshall Hannan during his address, congratulated the graduating Officers for successfully completing their training. He also underlined the contribution of their parents and instructors in ensuring their success. Hannan said that IAF is keeping pace with changing environment and has an improvised curriculum to train resilient, dynamic and field-ready officers.

Hannan recalled the contribution of India and the Indian Air Force during the 1971 war. He stated that Bangladesh Air Force was born on the "soil of this beautiful country, at Dimapur on September 28, 1971." He stressed that both countries have an understanding of mutual trust and respect. Furthermore, Air Chief Marshal Shaikh Abdul Hannan said that India and Bangladesh have a significant role to play in ensuring the security of the region and the defence forces of both nations conduct regular joint exercises to ensure that they have synergy in the effort, according to the press release issued by Defence PRO. The Bangladesh Air Force Chief in his address highlighted that India and Bangladesh have an umbilical connection. This connection has

been more profound since the Bangladesh Liberation war in 1971,” according to the press release issued by Defence PRO.

<https://theprint.in/world/bangladesh-air-force-chief-visits-barrackpore-air-force-station-in-west-bengal-interacts-with-personnel/1271972/>



Mon, 19 Dec 2022

Tawang Clash: Sixty Years on, Why doesn't India have a China-Specific Strategy?

By Arun Prakash, Ashok Hukku

John F Kennedy's aphorism — “Victory has a thousand fathers, but defeat is an orphan” — was proved right (again) on the 60th anniversary of the 1962 India-China War this year when no official homage was paid by the Ministry of Defence (MoD) or any politician to the fallen of 1962 at New Delhi's National War Memorial. Indian casualties in the 1962 China-India war, according to MoD figures, were 4,126 soldiers dead, wounded and missing in action, and 3,968 taken prisoner by the Chinese People's Liberation Army (PLA). While some Indian army units may have commemorated, with pride, the sanguinary battles of Rezang La and Walong, for the rest of the country, 65 per cent of whose citizens were born after 1962, this seems to be a forgotten war.

The December 9 clash between Indian troops and PLA soldiers in the vicinity of Tawang should serve as a harsh reminder of the close call that Arunachal Pradesh (then known as the North-Eastern Frontier Agency or NEFA) had in 1962. So, let us recall a bit of this history, lest it repeats itself.

Starting on October 20, 1962, the Chinese PLA advanced along two axes 500 miles apart — Tawang and Walong — and overcoming fierce but sporadic Indian resistance, overran NEFA in three weeks. On November 21, China declared a ceasefire and PLA troops withdrew 20 km behind the McMahon Line. The Indian Army had fought with courage and tenacity, often, to the last man and last bullet, but they were let down by a fatal combination of political complacency, faulty intelligence and military incompetence and pusillanimity.

According to Australian journalist, Neville Maxwell, Nehru's foolhardy “forward policy” was based on flawed inputs from his confidant and Intelligence Bureau chief, B N Mullik, who assured him that whatever the Indians did, “there need be no fear of a violent Chinese reaction”. Since the PM placed such faith in Mullik, none of the army generals could muster the courage to challenge his flawed advice.

Sixty years later, we can take reassurance from the fact that India and its armed forces have come a long way and there will be no replay of the 1962 debacle. We must, however, bear in mind that China in this interregnum has seen phenomenal economic, technological and military growth and vies with the USA for the global “pole-position”. Today, the Chinese threat hangs like a sword of Damocles over our heads, and without actually going to war, they have imposed a huge

economic burden on us by forcing the “counter-mobilisation” of 50,000-60,000 extra Indian troops, stretching an already lean defence budget.

Analysis indicates that the country’s post-Covid financial situation and depressed GDP growth rates will not permit any significant hike in defence expenditure. Such are the liabilities under the “pay and pension” heads that undertaking essential modernisation and re-equipment of the armed forces is not possible, even if the defence budget is hiked from the current 2.1 per cent to 2.5 per cent of the GDP, an unlikely prospect. Ill-conceived and ill-timed schemes like Agnipath and bans on import of military hardware are neither going to save money nor engender instant self-reliance. But at this critical juncture, they can erode combat-effectiveness.

Resumption of robust economic growth is the only panacea for the “guns vs butter” dilemma that India faces. However, given the gravity of threats confronting us, it is incumbent upon the government to fund defence expenditure that is vital for ensuring the nation’s security. There exists more than adequate scope for effecting savings — by cutting down on wasteful/non-essential government expenditure, by reducing vote-garnering subsidies, or by disinvestment/monetisation of idle assets. National defence is important enough to even warrant borrowing from the market.

There are some disturbing questions that lurk unanswered in every citizen’s mind. Does our ruling elite know what is driving China’s diplomatic and military bellicosity? How much longer will this 60-year-old Himalayan drama play out? Why are military commanders negotiating and where are our diplomats? What is our counter-strategy to deter China? Why is Parliament in the dark?

The answers to all these questions lie with our elaborate national security apparatus at whose apex sits the four-member Cabinet Committee on Security chaired by the PM. This committee, provided it meets when required, is meant to be the final arbiter on all matters of national security. Also in place are bodies like the high-powered National Security Council, the Strategic Policy Group, and the National Security Advisory Board, tasked with strategic analysis and evolution of policy options.

Given this elaborate set-up, it is perplexing that not only does India lack a China-specific strategy, but has yet to formulate a national security strategy (NSS). Preceded by a “reality check” in the form of a comprehensive defence review, the NSS would spell out national aims and objectives, outline the nation’s security goals and provide policy-guidance for the defence, foreign affairs and intelligence establishments.

Diplomats and commentators, attribute the dismal state of Sino-Indian relations to “misperceptions” and “trust deficit”. While this may be true of the border situation, we must acquire absolute clarity about China’s larger objectives.

In Xi Jinping’s hegemonic grand-strategy, he sees India, especially if it acquires allies, as a regional hindrance that needs to be curbed. His compulsion in Siachen is to prevent the Indian Army from dominating Highway 219, and insulating the cherished China-Pakistan Economic Corridor from interference. Skirmishing and territorial creep in Ladakh and Arunachal are meant to keep India distracted and off-balance.

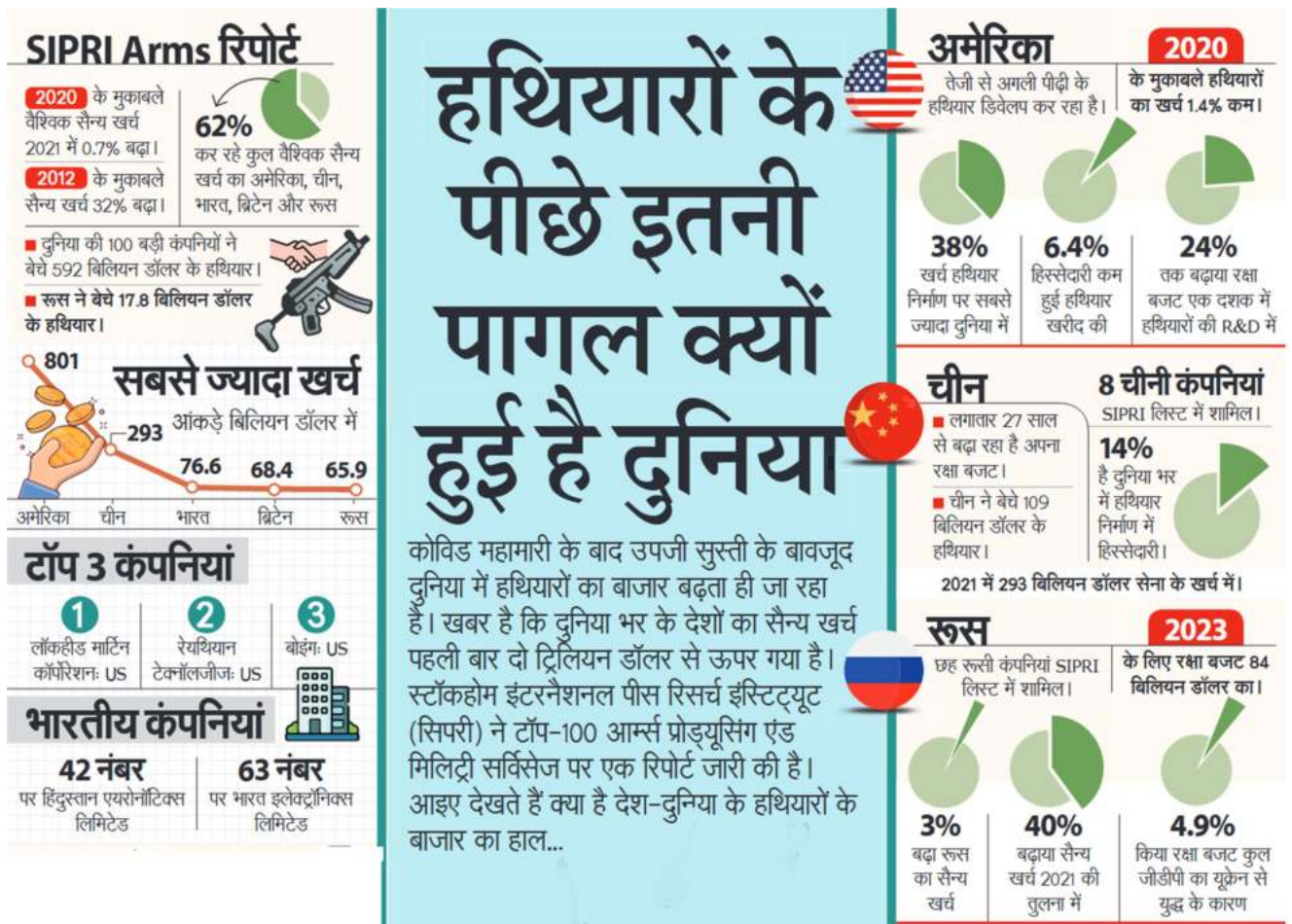
While the military must be allowed to seek tactical advantage, it is also time for India to shift diplomatic gears from “reactive” to “proactive”, starting with a calibrated brake on burgeoning Sino-Indian trade, whose deficit has zoomed past \$70 billion. It is also time to break our silence

and canvass international opinion via the UN, G20 and other international forums to pressurise China to come to the negotiating table. The Sino-Indian Border Peace and Tranquility Agreement is now 30 years old and MEA needs to resume some old-fashioned diplomacy.

<https://indianexpress.com/article/opinion/columns/tawang-clash-india-china-strategy-8332572/>

नवभारत टाइम्स

Tue, 20 Dec 2022



Contd...

हाल मार्केट का

अब जरा इंटरनेशनल आर्म्स मार्केट का भी जायजा ले लें-

- इस बाजार में भारत की हिस्सेदारी महज 0.2% ही है।
- दुनिया में हथियार बेचने वाले प्रमुख 25 देशों में भारत 23वें स्थान पर।

77% हिस्सेदारी अमेरिका, रूस, चीन, फ्रांस और जर्मनी की

11% हिस्सेदारी है भारत की हथियार खरीदने में इंटरनेशनल मार्केट से

- यूरोप की एयरोस्पेस सेल्स गिरी। शिप बनाने का धंधा उठा।
- मिडल ईस्ट बेस्ड कंपनियों की बिक्री 6.5% बढ़ी।

दुनिया में अंतरराष्ट्रीय सुरक्षा को लेकर बड़ा खतरा मंडरा रहा है। सारे देशों की राष्ट्रीय सुरक्षा को लेकर चिंताएं बढ़ रही हैं। सुस्ती के बावजूद हथियारों का मार्केट का बढ़ना दिखाता है कि असुरक्षा कितनी गहरी हो चुकी है। -**हर्य वी. पंत, डिफेंस एक्सपर्ट**

ब्रिटेन

- लगातार चौथे वर्ष बढ़ाया अपना रक्षा बजट।
- रक्षा बजट का बड़ा हिस्सा R&D में खर्च।

2.2% रक्षा बजट जीडीपी का

3% बढ़ा ब्रिटेन का खर्च भी

टॉप-100 में यूरोप की 27 कंपनियां

SIPRI नोट्स

- जापान की 4 कंपनियां लिस्ट में, पर उनकी बिक्री में 1.4% की गिरावट आई।
- पहली बार लिस्ट में एक ताइवानी कंपनी भी है। मिलिट्री इलेक्ट्रॉनिक्स की है सप्लायर।

भारत

2 भारतीय कंपनियां

SIPRI लिस्ट में शामिल।

खर्च में किया 0.9 प्रतिशत का इजाफा।

64% स्वदेशी हथियारों की खरीद के लिए रक्षा बजट का

33% तक घटाया भारत ने विदेशों से खरीद को

कैटेगरी : अरुणेश पठानिया
ग्राफिक्स : अर्जुन सिंह

यूक्रेन युद्ध में बढ़ी हथियारों की खपत, कौन हो रहा मालामाल? इस पर लेख पढ़ने के लिए यहां स्केन करें और navbharatgold.com पर जाएं

\$320-Billion Military Build-up: Why Japan is Scrapping its Pacifist Defence Strategy

In a significant shift from its long-time post-war pacifist approach, on Friday, Japan announced a \$320 billion plan for a military build-up, the biggest since the Second World War. Based on current budgets, this five-year plan will make the country the world's third-biggest military spender after the United States and China, a Reuters report said. On December 16, Prime Minister Kishida Fumio's cabinet approved Japan's three key security documents.

"Each and every one of us must have the awareness that we are protecting our country. This is very important, as we have learned from Ukraine," Prime Minister Kishida said in a news conference. "We are now at a turning point of our national security policy," a Washington Post report quoted him saying.

Why is Japan undertaking a build-up of its military?

Analysts believe that Tokyo may be concerned about potential regional threats. A catalyst for this stance may be Russia's invasion of Ukraine that occurred in 2021, and China's aggression, which indicated that the world may be looking at the possibility of China's takeover of Taiwan in the future.

Then there are other concerns that Tokyo may be grappling with, including the possibility of China attempting to wrestle for control of the uninhabited Senkaku Islands, regarding which it is engaged in a territorial dispute with Japan.

What does this mean for the region?

There are several reasons why Japan's new defence strategy is important. Under the country's post-war constitution, Japan is not allowed to have offensive military forces and Article 9 of the constitution says "the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes".

But the situation is a bit more complex: After the end of the Cold War, Japan has been consistently amending its security policy to increase its capabilities to defend itself outside its own territories, and has been developing itself to be equipped to send its forces overseas when required.

According to a 2012 report by the International Institute for Strategic Studies, Japan has the world's sixth-best funded defence forces. But Japan's new strategy documents unveiled last week show that the country believes that its current defence capabilities are insufficient given the rapidly changing global scenario.

According to a Washington Post report, "Japan aims to improve its long-range strike capability with both Japan-made long-range weapons and imported foreign ones, such as U.S.-built Tomahawk cruise missiles. Japan's defence policy will remain defence-oriented, and counterstrikes will only be used under certain limited conditions, according to the documents. The new strategy does not allow for preemptive strikes."

A Reuters report pointed to a separate national security strategy document referencing China, Russia and North Korea as countries that pose security concerns for Japan, which indicated plans for close cooperation with the United States and other like-minded nations, particularly those in the Indo-Pacific, "to deter threats to the established international order."

The criticism

While Japan's allies, specifically the US, have welcomed this development, some of Japan's neighbours are not happy. "The Prime Minister is making a clear, unambiguous strategic statement about Japan's role as a security provider in the Indo-Pacific," US Ambassador to Japan Rahm Emanuel said in a statement. "He has put a capital "D" next to Japan's deterrence," he added, according to a Reuters report.

According to a Guardian report, this week, China's foreign ministry spokesperson Wang Wenbin urged Japan to "act upon the political consensus that the two countries are cooperative partners and do not pose a threat to each other". There is also some indication that domestically, in Japan, the country's citizens have differing views. "While Japanese voters have traditionally been sceptical about direct revision of the constitution, public support for a more robust military has grown since the Ukraine war and amid fears that a Chinese invasion of Taiwan could pose a threat to Japan's security," a Guardian report said.

<https://indianexpress.com/article/explained/explained-global/japan-defence-strategy-build-up-explained-8332311/>

Russia Deploys Avangard Missile into Combat Duty, What's this 'invincible' Weapon by Putin

Russia has deployed a regiment armed with the dangerous Avangard missiles into service. The Russian Defence Ministry said that the regiment had entered combat duty at the Yasnenskoye missile formation in the Orenburg Region in southern Urals, reported TASS news agency.

"Today, yet another regiment armed with the Avangard missile system was put on combat duty at the Yasnenskoye missile formation, becoming a true present for the Day of the Strategic Missile Force," the ministry said. The Russian Defense Ministry said the missile system with the hypersonic glide vehicle will increase combat capabilities of the Russian Strategic Missile Force.

The complex process of installing an intercontinental ballistic missile (ICBM) took a few hours and was carried out with the help of a special transporter-loader. The Avangard hypersonic glide vehicle is capable of flying through the dense layers of the atmosphere at hypersonic speeds of up to Mach 27 (about 32,000 kilometres per hour), performing direction and altitude manoeuvres and overcoming any missile defences. Russian President Vladimir Putin first mentioned the Avangard system in March 2018.

What is Russia's Avangard missile system?

In his 2018 speech presenting the Avangard, Putin described the system as "invincible" and likened it to a "meteorite" and "fireball." He said it was capable of making sharp manoeuvres on its way to a target, meaning it is "absolutely invulnerable to any air defence and missile defence weapons." "The Avangard is invulnerable to intercept by any existing and prospective missile defence means of the potential adversary," the Russian leader said, adding that it would guarantee Russia's security for the foreseeable future.

Avangard is a boost-glide vehicle that is attached to a ballistic missile, according to the Centre for Strategic and International Studies. The boost-glide vehicle separates from the missile at an altitude of approximately 100 km and then manoeuvres towards its target at speeds reaching Mach 20. This speed is not different from existing capabilities, as Avangard, and hypersonic glide vehicles in general, are slower than intercontinental ballistic missiles (ICBMs).

What is new is Avangard's ability to manoeuvre, which makes its trajectory unpredictable. Furthermore, Avangard's altitude of its trajectory also makes it more difficult for ground-based radar to detect and more difficult for missile defence systems to counter. Currently, Avangard is boosted by the SS-19 Stiletto ICBM and will be deployed on the SS-28 Sarmat as it enters service to replace the Stiletto.

On December 27, 2019, the Russian Minister of Defense Sergei Shoigu announced that the Russian military had successfully deployed the Avangard hypersonic glide vehicle (HGV).

The Avangard is one of two systems Russia has developed that are "capable of flying trajectories over the south pole to approach the continental US from the south," the National Air and Space

Intelligence Center said in a 2020 report. The Avangard "is designed to penetrate the US missile defence system and strike at critical targets with a nuclear warhead."

<https://www.republicworld.com/world-news/russia-ukraine-crisis/russia-deploys-avangard-missile-into-combat-duty-whats-this-invincible-weapon-by-putin-articleshow.html>



Mon, 19 Dec 2022

Mounting Pressure from West? Russia to Participate in Joint Naval Drills with China this Week

Russia announced participation in joint naval exercises with China on Monday. Moscow noted in a statement that several of its warships were participating in naval exercises with Beijing's navy starting this week, in a bid by both countries to deepen ties amid pressure from the West.

As per a statement by the Russian defence ministry, the drills would take place between December 21 and 27 in the East China Sea, with the aim of 'strengthening naval cooperation' between Moscow and Beijing. The drills would include the live firing of missiles, and artillery and exercises to counter submarines, the statement added.

'Goal is to maintain peace and stability...'

'The main goal of the exercises is to strengthen naval cooperation between the Russian Federation and the People's Republic of China, and maintain peace and stability in the Asia-Pacific region. Aircraft and helicopters of the navy's aviation forces of the Pacific Fleet and the People's Liberation Navy will be involved in the exercise'.

The ministry also noted that China would incorporate two destroyers, patrol ships, a supply ship and a submarine, as per AFP. Notably, last month, South Korea claimed that two Chinese and six Russian warplanes entered its air defence zone. Two Chinese H-6 bombers, four Russian TU-95 bombers and two SU-35 fighters were detected in the Korea Air Defence Identification Zone (KADIZ). South Korean military had deployed air force fighter jets in response to the same.

An air defence zone is an area where foreign aircraft are required to identify themselves. While Moscow does not recognise Korea's air defence zone, Beijing noted the zone is not territorial airspace.

<https://www.timesnownews.com/world/russia-to-participate-in-joint-naval-drills-with-china-this-week-know-more-article-96347050>

नवभारत टाइम्स

Mon, 19 Dec 2022

Chinese JF-17 Jets : चीन-पाकिस्तान के 'कबाड़' को अर्जेंटीना ने खरीदने से किया इनकार, JF-17 फाइटर जेट की डील हुई कैंसल

दक्षिणी अमेरिकी देश को अपने सैन्य हार्डवेयर बेचने की चीन की योजना को तगड़ा लगा है। अर्जेंटीना ने चीन से फाइटर जेट खरीदने का इरादा अब बदल दिया है। पिछले हफ्ते अर्जेंटीना के राष्ट्रपति अल्बर्टो फर्नांडीज ने घोषणा की थी कि अर्जेंटीना तत्काल कोई सैन्य विमान नहीं खरीदेगा। इससे अपने जेएफ-17 फाइटर जेट को लैटिन अमेरिका तक पहुंचाने की चीनी उम्मीदों पर पानी फिर गया है। चीन ने Chengdu FC-1/JF-17 'थंडर' फाइटर जेट को पाकिस्तान के साथ मिलकर बनाया है।

पिछले हफ्ते चीनी युद्धक विमानों को खरीदने की संभावना के बारे में पूछे जाने पर फर्नांडीज ने फाइनेंशियल टाइम्स को बताया, 'अर्जेंटीना को अपने संसाधनों को सैन्य विमानों की खरीद से ज्यादा जरूरी चीजों पर खर्च करना है।' उन्होंने कहा कि दक्षिण अमेरिका महाद्वीप पर युद्ध की कोई समस्या नहीं है और क्षेत्रीय देशों के बीच एकता है। चार दशक की सर्विस के बाद 2015 में डसॉल्ट मिराज III फाइटर जेट रिटायर होने के बाद से अर्जेंटीना ने कोई भी लड़ाकू विमान नहीं खरीदा है।

विमान के इंजन में कई बार देखी गई खराबी

पिछले साल अर्जेंटीना सरकार ने 2022 के बजट में मल्टीफंक्शनल फाइटर जेट्स की खरीद के लिए 664 मिलियन अमेरिकी डॉलर का बजट तय किया था। जेएफ-17 चौथी पीढ़ी का हल्के वजन वाला सिंगल-इंजन मल्टीरोल जेट है जिसकी अधिकतम गति मैक 1.6 और कॉम्बैट रेडियस 1400 किमी तक है। लेकिन पाकिस्तान के साथ मिलकर बनाए गए फाइटर जेट के रूसी RD-93 इंजन में कई गड़बड़ियों की सूचना दी जा चुकी है। इसके बावजूद चीन छोटे देशों को इन्हें बेच रहा है।

पाकिस्तान बनाएगा 72 लड़ाकू विमानों की फ्लीट

गड़बड़ी की खबर सामने आने के बाद भी अज़रबैजान हो या श्रीलंका, बांग्लादेश, मलेशिया हो या उत्तर कोरिया कई देशों ने जेएफ-17 फाइटर जेट खरीदने में अपनी दिलचस्पी दिखाई है। पाकिस्तान ने 22 जेट खरीदे हैं और 50 और खरीदने की योजना बना रहा है। चीनी नानजिंग रिसर्च इंस्टीट्यूट ऑफ इलेक्ट्रॉनिक्स टेक्नोलॉजी की तमाम कोशिशों के बाद भी रूसी आरडी-93

इंजन के साथ समस्या जारी है। वर्तमान में यह जेट पाकिस्तान, म्यांमार और नाइजीरिया में सर्विस में हैं।

<https://navbharattimes.indiatimes.com/world/china/argentine-to-not-buy-jf-17-fighter-jets-from-china-made-with-pakistan-know-all-about-jf-17-jets/articleshow/96351025.cms>



Mon, 19 Dec 2022

JF-17 Jet Fighters, Jointly Developed by Pakistan and China, Fails to Fulfil Promises: Report

China continues to export its JF-17 jet fighters to small countries despite numerous malfunctions being reported in the Russian RD-93 engines. The jet fighters are being jointly developed with Pakistan. Several nations like Azerbaijan, Sri Lanka, Bangladesh, Malaysia and North Korea have shown their interest in buying the JF-17 fighter jet despite malfunctions being reported. Pakistan has bought 22 JF-17 jets and plans to buy 50 more, making it a 72-strong fleet but reports suggest that malfunctions to the jets engines could dent both nations' ambitions to dethrone American and European fighter jet making companies like Lockheed Martin and Dassault Rafale.

China and Pakistan over the past two years have worked together to market their jointly developed fourth-generation fighter jet to international customers. The JF-17 jets cost \$15 million and \$25 million per aircraft. These jet fighters are currently in service in Pakistan, Myanmar, and Nigeria and 145 of these jets are currently in service. A report by Business Insider said that the JF-17 fighter jets will most likely become most widely operated Chinese combat aircraft globally as several smaller nations want to buy jets that are comparatively cheaper than those made by European and American private aviation companies. The problem with the Russian RD-93 engines continues despite efforts undertaken by the Chinese Nanjing Research Institute of Electronics Technology to fix the issue.

Pakistan is facing problems because Pakistan wants to directly deal with Russia regarding the repair and replacement of the Russian RD-93 engines but the deal signed between Beijing and Islamabad during the agreement says that Pakistan can only obtain engines and spare parts from Russia only through the mediation of China. Russia wants to help out Pakistan by sending spare parts and repair tools for the RD-93 engines but international sanctions against Russia's defence export agency, the Rosoboronexport, have hindered progress. The JF-17 fighter jets were pegged to be the equivalent of Russian Su-30MKI or the French Mirage 2000, promising to be a low-cost, lightweight and all-weather multi-role fighter but the jets have failed to live up to their expectations. Earlier this year, the Myanmar junta grounded most of the recently acquired JF-17 Thunder fighters as they faced technical issues.

<https://www.news18.com/news/world/jf-17-jet-fighters-jointly-developed-by-pakistan-and-china-fails-to-fulfil-promises-report-6646771.html>

Chinese Shupang Class Survey Ship Spotted in Japanese Territorial Waters

Japan's Defense Ministry reported that a Chinese Navy Shupang-class survey ship sailed through Japan's territorial waters near Yakushima Island. According to the Japan Ministry of Defense/Self-Defense Forces, on December 19, it was confirmed that a Chinese Navy Shupang-class survey ship sailed through Japan's territorial waters near Yakushima Island. "This is the 9th time, the first since November this year, that we announce Chinese Naval vessel's entry into Japan's territorial waters," tweeted Japan Ministry of Defense/Self-Defense Forces.

The Ministry further added, "These Chinese naval activities are of national security concern. #JMOD/#JSDF resolutely protect Japan's territory, territorial waters, and airspace." This show of force by the PLAN coincided with the release of a new National Security Strategy (NSS) by Japan on December 15, 2022. According to this new doctrine, Japan intends to acquire counter-attack capabilities. "We live in the world of a historical inflection point and in the face of the most severe and complex security environment since the end of WWII," the new NSS outlines, referring to increased activities of North Korea, China and Russia in Japan's Area of Security.

"A key to deterring invasion against Japan is counterstrike capabilities that leverage stand-off defense capability and other capabilities," it added. Japan is finding itself in the midst of the most severe and complex security environment since the end of WWII with mounting threats from China and North Korea. Japan has responded with what they call a "major shift" in defence policy. The new strategy does away with decades of precedent to acquire counter-strike capabilities, with a special focus on a free and open Indo-Pacific (FOIP).

Japan will build a multilayered network among its allies and like-minded countries, expand it, and strengthen deterrence. Thus, while utilizing frameworks such as the Japan-US-ROK, and Japan-US-Australia, Japan will enhance security cooperation with Australia, India, the ROK, European countries, ASEAN countries, Canada, NATO, EU, and others, read the National Security Strategy of Japan statement.

Specifically, Japan will promote enhanced engagement with like-minded countries and others in the Indo-Pacific region through bilateral and multilateral dialogues, bilateral training and exercises, conclusions of information protection agreements, Acquisition and Cross-Servicing Agreement (ACSA), Reciprocal Access Agreement (RAA), joint development of defence equipment, transfer of defence equipment and technology, capacity building support, strategic communication, and Flexible Deterrent Options (FDO). China has set clear goals to achieve "the great rejuvenation of the Chinese nation," the full completion of "building China into a great modern socialist country" by the middle of this century, and the prompt buildup of the People's Liberation Army to be elevated to "world-class standards," added the statement. Under these national goals, China has been increasing its defence expenditures at a continuously high level and extensively and rapidly enhancing its military power, including its nuclear and missile capabilities, without sufficient transparency.

In addition, China has intensified its attempts to unilaterally change the status quo by force in the maritime and air domains including in the East and South China Seas, such as its intrusions into the territorial waters and airspace around the Senkaku Islands, and has expanded and intensified its military activities that affect Japan's national security in the Sea of Japan, the Pacific Ocean, and other areas as well, added the statement. Moreover, while maintaining its policy of peaceful reunification of Taiwan, China has not denied the possibility of using military force. In addition, China has been intensifying its military activities in the sea and airspace surrounding Taiwan, including the launch of ballistic missiles into the waters around Japan.

Regarding peace and stability across the Taiwan Strait, concerns are mounting rapidly, not only in the Indo-Pacific region including Japan, but also in the entire international community, added the statement. Also, Japanese Government officials approved on Friday three documents laying out the new policies. Prime Minister Fumio Kishida said current capabilities governing Japan's Self Defence Forces are "insufficient," reported NHK World. Kishida said, "Missile technology is rapidly improving. There is also the possibility of attacks where many missiles are launched at the same time. Given all this, counterstrike capabilities that would work as a deterrence are absolutely necessary." Kishida said the government will increase defence spending to about 2 per cent of GDP by fiscal year 2027. That would bring the total to 43 trillion yen, or about 315 billion dollars. He said the money will come from tax increases to be imposed in 2024 or later.

US National Security Advisor Jake Sullivan said in a statement that the shift represents a "bold and historic step" from one of his country's closest allies. He said it will help the Indo-Pacific region achieve "lasting peace, stability and prosperity." The new policy documents describe China as Japan's "biggest strategic challenge." That drew an angry reaction from Beijing on Friday. Chinese officials said the policy "ignores" reality. They accused Japanese leaders of hyping an imaginary "China threat" as an excuse for a military buildup. They say the effort is doomed to fail, reported NHK World.

<https://theprint.in/world/chinese-shupang-class-survey-ship-spotted-in-japanese-territorial-waters/1272256/>



Mon, 19 Dec 2022

Germany Pauses Purchases of Puma Tanks after Operational Problems

Germany will not purchase any more Puma infantry tanks until they have proven themselves to be reliable, Defence Minister Christine Lambrecht said on Monday after several of the vehicles were put out of service during a recent military drill. "The recent failures of the Puma infantry fighting vehicle are a major setback," Lambrecht said in a statement, adding that she had requested a report on the matter by the end of next week. Shares in Rheinmetall (RHMG.DE), which manufactures the tanks together with Krauss-Maffei Wegmann (KMW), were down 7% after the minister's announcement. "Our troops must be able to rely on weapon systems being robust and stable even in combat," Lambrecht said, while assuring NATO allies that they could

continue to rely on Berlin to fulfill its readiness obligations as part of a joint task force (VJTF) from 2023. A statement from the German defence ministry said the goal was to make the Puma tanks operational as soon as possible. Meanwhile, the German Bundeswehr military would use Marder tanks, the predecessor model to the Puma, from Jan. 1, in what a ministry spokesperson called a "fall-back solution". Neither Rheinmetall nor KMW would comment on the issues with the Puma model.

The Spiegel magazine reported over the weekend that 18 Puma tanks intended for NATO's very high readiness joint task force next year were not operational after problems arose during a firing exercise. Germany has vowed to boost defence spending and modernise its military in the wake of the Ukraine war, with Chancellor Olaf Scholz's government making 100 billion euros (\$106.10 billion) available for defence investments in this year's budget.

<https://www.reuters.com/world/europe/puma-tank-failure-is-heavy-setback-germany-defence-ministry-2022-12-19/>



Mon, 19 Dec 2022

Ukraine to Boost Belarus Border Defences as Putin Meets Lukashenko

Ukraine is tightening up the defence of its border with Belarus over fears that Russia may be preparing a fresh attack, a government official has said. Deputy Interior Minister Yevhen Yenin told the BBC Ukraine would be bolstering the Belarusian border with armed forces and ammunition. The news came as Vladimir Putin travelled to Minsk to meet Belarusian President Alexander Lukashenko. Belarus shares a border with Russia as well as Ukraine.

The Russian president later ordered the strengthening of Russia's borders and of social control within Russia. He said the security services should quickly thwart any attempt to violate Russia's borders, combat risks coming from abroad, and identify traitors and saboteurs. He also said the special services should ensure the safety of people living in the parts of Ukraine that Moscow claims as its own. In some of these areas, most notably Kherson, Russia recently suffered significant military reverses. Russia's defence ministry announced that its troops stationed in Belarus would conduct joint military exercises with Belarus. Reacting to this and the visit Mr Yenin confirmed: "We are building up our defence lines all across the border with Russia and with Belarus."

While Belarus has not become involved in the war directly, it did allow Russian troops to use its territory to launch the invasion in February. Minsk is coming under increasing pressure from Moscow to step up its support in the "special military operation". But Kremlin spokesman Dmitry Peskov dismissed the reports "as totally stupid, groundless fabrications". President Putin flew to Minsk for talks with President Lukashenko - the first time in three-and-a-half years the pair have met in Belarus. The meeting has been described as a "working visit" and lasted for more than two hours. Speaking at a joint press conference President Putin said Russia did not want to "absorb" anyone. He also said that unspecified "enemies" wanted to stop Russia's

integration with Belarus. Speaking later on Monday, US state department spokesperson Ned Price said Putin's statement was the "height of irony" given he was currently seeking to absorb Ukraine. Something rare happened today: Vladimir Putin got on a plane and flew to Minsk. Now, President Putin and President Alexander Lukashenko meet a lot - but in Russia.

For the first time in three-and-a-half years, here was President Putin in Belarus. So why did he go... and why now? There were few clues at the joint press conference as the two leaders spoke a lot about economic relations, trade, but also security. President Putin indicated that some Belarusian military aircraft have been re-equipped to potentially carry nuclear missiles and that Russia is helping to train their crews. In return, President Lukashenko thanked him for providing Belarus with an S-400 air defence system and Iskander ballistic missile system.

The word "Ukraine" was hardly mentioned - in public. But the visit has fuelled speculation that the Kremlin leader may be trying to pressure the leader of Belarus into joining a possible new ground offensive in Ukraine. This may indeed be just a rumour. Or a ploy by Moscow to make Ukraine expect a Belarusian offensive and so tie up Ukrainian soldiers in the north. But, there are reportedly several thousand Russian soldiers already in Belarus and there have been joint exercises. Until now Alexander Lukashenko has been reluctant to commit his own troops to fighting in Ukraine. All eyes are on Minsk to see if that remains the case.

<https://www.bbc.com/news/world-europe-64030975.amp>



Tue, 20 Dec 2022

N Korea says Latest Launches Tested First Spy Satellite

North Korea said Monday it fired a test satellite in an important final-stage test for the development of its first spy satellite, a key military capability coveted by its leader Kim Jong Un along with other high-tech weapons systems. The North's official Korean Central News Agency also released low-resolution, black-and-white photos showing a space view of the South Korean capital and Incheon, a city just west of Seoul, in an apparent attempt to show the North is pushing to acquire a surveillance tool to monitor its rival. The rocket carrying the test satellite was launched Sunday to assess the satellite's photography and data transmission systems, KCNA said.

The country's National Aerospace Development Administration called the test results "an important success which has gone through the final gateway process of the launch of reconnaissance satellite." It said it would complete the preparations for its first military reconnaissance satellite by April next year, according to KCNA. "From the images released, the resolution does not appear to be so impressive for military reconnaissance," Soo Kim, a security analyst at the California-based RAND Corporation, said. "I'd note, however, that this is probably an ongoing development, so we may see more improvements to North Korea's military reconnaissance capabilities over time."

South Korea, Japan and US authorities said Sunday they had detected a pair of ballistic missile launches by North Korea from its northwestern Tongchang-ri area, where the North's satellite

launch pad is located. They said the two missiles flew about 500 kilometers (310 miles) at a maximum altitude of 550 kilometers (340 miles) before landing in the waters between the Korean Peninsula and Japan. This meant North Korea likely fired two missiles with different types of cameras — one for black-and-white imagery and video and the other for color, given the North's state media said that Sunday's test involved both types of cameras, said Lee Choon Geun, an honorary research fellow at South Korea's Science and Technology Policy Institute. An analysis of a photo of the launch also showed the missiles were likely a new type of a liquid-fueled weapon that can be used for a military purpose as well as sending a satellite into orbit, Lee said. Geon Ha Gyu, a spokesperson for South Korea's Defense Ministry, told reporters Monday that the South Korean and U.S. Assessments that North Korea fired the two medium-range ballistic missiles remain unchanged. He said South Korean and US intelligence authorities were analyzing further details of the launches but declined to elaborate.

A spy satellite was on a wish list of sophisticated military assets Kim announced during a ruling party meeting early last year, together with multi-warhead missiles, solid-fuelled long-range missiles, underwater-launched nuclear missiles and nuclear-powered submarines. Kim has called for such modern weapons systems and an expanded nuclear arsenal to pressure the United States to abandon its hostile policies on North Korea, an apparent reference to U.S.-led sanctions and the US-South Korean military drills that North Korea views as an invasion rehearsal.

<https://www.dailypioneer.com/2022/world/n-korea-says-latest-launches-tested-first-spy-satellite.html>

Science & Technology News



Mon, 19 Dec 2022

To Space and Beyond: Gaganyaan Mission Set for 2023

The Indian Space Research Organisation (ISRO) has been facing delays with its highly-anticipated Gaganyaan mission, which aims to send Indian astronauts to space for the first time. Initially scheduled for launch in 2022, the mission has now been pushed back to 2023. The mission aims to send three Indian astronauts to low Earth orbit for seven days aboard a spacecraft called the Gaganyaan.

A national dream: First Indian crewed mission in Space

The Gaganyaan mission was announced by Prime Minister Narendra Modi, in his Independence Day speech in 2018, and the original plan was to launch the mission in 2022. However, due to various challenges and delays, the launch date has been pushed back to 2023. The ISRO has been developing the necessary technologies and infrastructure for the Gaganyaan mission, including the spacecraft, the launch vehicle, and the ground support systems. The agency has also trained a

team of Indian astronauts for the mission. The Gaganyaan mission is a significant milestone for the ISRO and India, as it will be the first time that Indian astronauts will be sent to space. It is also a testament to the capabilities of the ISRO and ability to undertake complex and ambitious space missions.

The astronauts for the Gaganyaan mission were selected through a rigorous process that included physical and mental aptitude tests and training in survival and emergency procedures. The astronauts have undergone extensive training in preparation for the mission, including training in Russia and the United States.

Financial Express Online has reported earlier that four cosmonauts were shortlisted for Gaganyaan mission and in 2021 they completed their training in Russia. The Rs 10,000-crore ambitious project was earlier expected to be launched in 2022 coinciding with the 75th anniversary of India's independence. However, this has now been pushed to 2023.

“The Gaganyaan spacecraft will be launched aboard the GSLV Mk III rocket, a three-stage heavy lift launch vehicle developed by the ISRO. The GSLV Mk III can launch payloads weighing up to 4,000 kilograms into low Earth orbit. The launch of the GSLV Mk III will take place from the Satish Dhawan Space Centre in Sriharikota, located on the coast of the Bay of Bengal in the Indian state of Andhra Pradesh. The spacecraft will be inserted into low Earth orbit by the GSLV Mk III, after which it will perform various manoeuvres to reach its final orbit,” explains Girish Linganna, Defence and Aerospace Analyst. Three Indian astronauts will go to space for a period of seven days.

Downer: ISRO's Woes and Shifting Timelines

There are several reasons behind the delays that the ISRO has faced with Gaganyaan. One of the main reasons is the COVID-19 pandemic, which has disrupted the work schedules of many space agencies worldwide. In addition, the ISRO has also faced challenges with developing the necessary technologies and infrastructure for the mission. The ISRO has also faced delays due to issues with the supply chain, as many of the components required for the mission are sourced from overseas. The pandemic has disrupted the global supply chain, further contributing to the delays.

Another factor contributing to the delays is the fact that the Gaganyaan mission is a complex and ambitious project requiring the development of new technologies and the integration of multiple systems. This has resulted in technical challenges that have slowed down the progress of the mission. Despite these challenges, the ISRO is working hard to overcome the delays and is committed to launching the Gaganyaan mission as soon as possible. In the meantime, the agency is focusing on other critical missions, including the launch of a solar mission in 2023.

It is important to note that delays are not uncommon in the field of space exploration, and the ISRO has a track record of successfully completing its missions despite facing challenges. Overall, the Gaganyaan mission is a complex and ambitious project that requires the development of new technologies and the integration of multiple systems. The ISRO is working hard to overcome the challenges and is committed to launching the mission as soon as possible.

<https://www.financialexpress.com/defence/to-space-and-beyond-gaganyaan-mission-set-for-2023/2919538>

Centrally Funded Institutions Contributed 67.54 Per Cent of Total National Research Output: Study

Centrally funded institution systems contributed 67.54 per cent of India's total national research output during 2001-2020, a study has found. The study by the Department of Computer Science, Banaras Hindu University, analysed the contribution of major centrally funded institution systems to India's total scientific research output. The findings have been published in 'Current Science'.

The Indian Institute of Technology (IIT) system was the largest contributor in terms of research papers with 152,276 during 2001-2020. The IITs were followed by the Council of Scientific and Industrial Research (CSIR) with 99,430 papers, central universities with 97,524, the Department of Atomic Energy (DAE) with 77,819, National Institutes of Technology (NITs) with 46,034 and the Indian Council of Agricultural Research (ICAR) with 44,733. The contribution of major centrally funded institution systems to India's total research output over the previous two decades increased from 62.46 per cent in 2001-2006 to 72.7 per cent in 2016-2020.

The top six, including the IITs, CSIR, central universities, DAE, NITs and the ICAR contributed over 50 per cent of the total national output, the study said. The individual research output of the group of institutions also increased over the period under review. IITs, NITs, Indian Institutes of Science Education and Research (IISERs) and Indian Institute of Management (IIMs) showed rapid growth in research output with a two-fold increase in the number of publications between 2011-2015 and 2016-2020. The research observed that the proportionate share of IITs in the overall national output increased from 12.56 per cent in 2001-2005 to 18.72 per cent in 2016-2020.

On the other hand, the proportionate contribution of the CSIR system fell to 9.14 per cent in 2016-2020 from 12.43 per cent in 2001-2005. The Indian centrally funded institutional systems comprise a diverse set of institutions and institution systems. The study grouped them into three categories: ministries, departments and autonomous organisations under them; higher education institutes funded by the Centre; and councils and agencies maintaining different institutions. The scientists computed the standard indicators of total research output, proportionate share in the overall national output and compounded annual growth rate (CAGR) for all the institution groups. The various results were computed for the 16 major identified institution systems, the proportionate contribution of each institution system to India's total research output identified and the data divided into four different blocks of five years each, the study said.

The Indian research and development (R&D) system consists of various organisations such as universities, government research laboratories, autonomous institutions, private research laboratories and centres, etc. There were 1,043 universities and about 40,000 affiliated colleges in India as of June 2021, according to the University Grants Commission (UGC). Currently, this system consists of 54 central, 429 state, 125 deemed and 380 private universities and more than 150 institutes of national importance. These cater to activities related to various disciplines such

as arts, languages, sciences, social sciences and humanities and receive financial support from different sources.

In addition, there are well-established institutional systems with significant contributions to the national R&D output. These include the laboratories/centres under the Council for Scientific and Industrial Research (CSIR), Defence Research and Development Organisation (DRDO), ICAR and DAE. There are various sources of R&D funding as well as various models followed by these organisations. The major portion of R&D funding, however, is provided by the central and state governments. Their contributions account for 51.8 per cent of the total annual gross expenditure of the country's R&D while the private sector accounts for about 37 per cent.

The study claimed to give an analytical account of the research output from India's major centrally funded institutions and institution systems. The research claimed to have limitations such as it only considered research papers and ignored other R&D outputs such as patents, and technologies developed, among others. A more detailed analysis of the research contribution of the institutions would, therefore, need data about patents and technologies developed, it said.

The study also did not ascertain the proportionate contribution of the centrally funded and privately funded institutions and institution systems in the total research output. In light of this information, in India, the role of stakeholders such as the government and funding agencies is important in ensuring higher productivity from centrally funded institutions as well as increasing the contribution of state- and private-funded institutions in research, the study concluded.

<https://www.newindianexpress.com/nation/2022/dec/19/centrally-funded-institutions-contributed-6754-per-centof-total-national-research-output-study-2529728.html>

दुनिया को कितना बदलने जा रहा है ChatGPT

ChatGPT रोजगार की प्रकृति बदलकर एक अलग जॉब कैटेगरी जोड़ देगा। नई कैटेगरी मतलब ऐसे लोग जो सीखने और बेहतर होने में मशीनों की मदद करते हैं



सुरेश प्रभु



शोभित माथुर

पिछले हफ्ते आर्टिफिशल इंटेलिजेंस के बने एक बात करने वाले चैटबॉट ChatGPT ने इंटरनेट की दुनिया में तहलका मचा दिया। यह बॉट सामान्य भाषा समझता है, उसी में सटीक और क्रिएटिव जवाब भी देता है। इसकी जो भी सीमाएं हों, मगर एक ही वक्त में यह रोमांच पैदा करने के साथ डराता भी है। एक ओर इंसानों की नकल करने वाली मशीन का यह सबसे अच्छा प्रदर्शन है, तो दूसरी ओर यह दिखाता है कि मशीनें हम इंसानों से बेहतर भी हो रही हैं।

असरदार तकनीक : हालांकि ChatGPT की अपनी सीमाएं हैं, फिर भी यह तेजी से सीखेगा। यह मशीन लर्निंग की अपनी प्रकृति है कि यह समय के

साथ बेहतर होती जाती है, क्योंकि इंसानों से इसकी बातचीत बढ़ती है।

- इस तकनीक के चलते कई इंडस्ट्रीज भी बंद हो सकती हैं, लेकिन सबसे पहले और सबसे साफ असर एजुकेशन पर दिखेगा।
- होमवर्क में मिलने वाले निबंध और कोडिंग असेसमेंट जैसी चीजें अब अप्रासंगिक हैं। ChatGPT और इसकी अगली पीढ़ी के बॉट्स किसी भी सब्जेक्ट पर एकदम पर्सनलाइज्ड निबंध लिखेंगे।
- कंप्यूटर लैंग्वेज में बने होने के चलते यह चैटबॉट शानदार कोड जेनरेटर, एक्सप्लेनर्स और डिबगर्स हैं। बेसिक कोडिंग का बड़ा हिस्सा अब AI की मदद से बड़े आराम से बनाया जा सकता है।
- शिक्षकों को खुद को बदलना होगा। अब तक गूगल जैसा सर्च इंजन ही उन्हें चुनौती देता था। टीचर क्लासरूम में कुछ उलटफेर करके, कॉपी पकड़ने वाले टूल्स उपयोग करके और मूल सोच की ओर बढ़ाने वाले ओपन-एंडेड असेसमेंट से सर्च इंजनों को हरा देते थे।
- AI बेस्ड नैचरल लैंग्वेज से लैस चैटबॉट्स बहुत उन्नत हैं। वे हमारे पर्सनल टीचर बन जाएंगे और हमेशा मौजूद भी होंगे। जितनी भी सूचनाएं मौजूद हैं, चैटबॉट उन सबको देखकर निष्कर्ष निकाल सकता है।

Contd...



कॉमन रूम

- फिर शिक्षक क्या करेंगे? टीचर को उसे सिखाना होगा कि सीखने का उद्देश्य क्या है, सीखने के लायक क्या है और सीखना कैसे है। इसके लिए उन्हें प्रशिक्षित करना होगा।

रोजगार की प्रकृति : इससे नौकरियों की प्रकृति भी बदलेगी- मशीनों को प्रशिक्षित कर उन्हें बेहतर बनाने में मदद करनी होगी। कंपनियों के बीच चलने वाले कॉम्पिटिशन में आगे कौन निकलेगा, यह भी इसी पर टिका होगा। इसका मतलब मशीनों को इनपुट देना और उन्हें बेहतर बनाने के लिए उसके आउटपुट पर फीडबैक देना है। यह रोजगार की प्रकृति बदल देगा और एक अलग जॉब कैटेगरी जोड़ देगा। नई कैटेगरी मतलब ऐसे लोग जो

प्रतिस्पर्धी मशीनों की तुलना में सीखने और बेहतर होने में अपनी मशीनों की मदद करते हैं।

नया समाज : जैसा कि हर तकनीक के आने पर होता है, पहले इनकार, फिर शक और अंत में मंजूरी। जो जल्दी इसे सीखेंगे, वही लीड करेंगे। इससे कितनी नई नौकरियां पैदा होंगी, कितनी कम हो जाएंगी, यह कहना मुश्किल है। लेकिन मशीन की मदद से निश्चित रूप से हर नौकरी बेहतर बनेगी। AI और मशीन लर्निंग अब केवल कंप्यूटर साइंस और इंजीनियरिंग के ही कोर्स नहीं हो सकते हैं। हर स्टूडेंट को साइंस के इस क्षेत्र को सीखने की जरूरत है, क्योंकि हर प्रफेशन इसे एकीकृत करेगा और समाज इससे आकार लेगा।

ChatGPT सहित कोई भी नया एप्लिकेशन कुछ समय के लिए रोमांचक लग सकता है और फिर फीका भी पड़ सकता है। लेकिन हम एप्लिकेशन के पीछे काम करती तकनीक- एआई से इनकार नहीं कर सकते। हमें मूलभूत सिद्धांतों पर वापस जाने की आवश्यकता है- क्या चीज हमें इंसान बनाती है, हम क्यों सीखते हैं? बेहतर होगा हम अपनी मानसिकता बदलकर इन तकनीकी बदलावों को आत्मसात करें और इससे अकेले खुद को ताकतवर बनाने की जगह सबके अच्छे के लिए इसका प्रयोग करें।

(सुरेश प्रभु पूर्व केंद्रीय मंत्री हैं। शोभित माथुर ऋषिहुड यूनिवर्सिटी के वीसी हैं)

AI का कमाल: देश के हर जिले की बोली सुनेगा गूगल ताकि इंटरनेट बने आसान

2025 तक एक अरब भारतीय ऑनलाइन हो जाएंगे। अभी यह आंकड़ा 70 करोड़ है। अपनी सालाना इवेंट गूगल फॉर इंडिया में गूगल ने यह जानकारी दी। कंपनी के सीईओ सुंदर पिचाई ने इस मौके पर कहा कि आर्टिफिशियल इंटेलिजेंस यानी AI की मदद से हम ऐसा मॉडल बना रहे हैं जो हजार भाषाओं में एक साथ जानकारी ला सके। उन्होंने भारत के UPI सिस्टम की तारीफ करते हुए कहा कि हमने इसके आधार पर Google Pay को तैयार किया और उसे दुनियाभर में ले जा रहे हैं।

गूगल सीईओ सुंदर पिचाई ने कहा स्टार्टअप के लिए यह है बेहतरीन वक्त

देश के सभी 773 जिलों से लोगों के बोलने के लहजे

गूगल इंडिया के कंट्री हेड और वाइस प्रेजिडेंट संजय गुप्ता ने इंडियन इंस्टीट्यूट ऑफ साइंस, बेंगलुरु के साथ मिलकर प्रोजेक्ट वाणी की भी जानकारी दी। इसमें

के नमूने लिए जाएंगे और उसके हिसाब से गूगल को भारतीय लोगों की आवाज समझने और उसके हिसाब से काम करने के ज्यादा कबिल बनाया जाएगा। गुप्ता के मुताबिक AI की मदद से इंटरनेट के बेहतर इस्तेमाल को ज्यादा लोगों तक ले जाया सकेगा। उन्होंने कहा कि गूगल फॉर इंडिया डिजिटल इजेशन फंड से शुरूआती और महिलाओं के स्टार्टअप की मदद जारी रखेंगे।

गूगल सर्च की वाइस प्रेजिडेंट लिज रीड ने कहा कि विजुअल और आवाज से सर्च में भारत दुनिया में सबसे आगे है। AI की मदद से लोगों की जरूरत के हिसाब से गूगल को तैयार किया जा रहा है। गूगल ने डिजिलॉकर के साथ भी साझेदारी की बात कही, डिजिटल इंडिया कॉरपोरेशन के एमडी और सीईओ अभिषेक सिंह ने कहा कि आने वाले दिनों में डिजिलॉकर और गूगल एड्रॉयड का इंटीग्रेशन हो सकेगा।

Contd...

गूगल के कुछ महत्वपूर्ण फैसले

- गूगल एक सिंगल और यूनिफाइड मॉडल बना रही है जो 100 से ज्यादा भारतीय भाषाओं के स्पीच और टेक्स्ट इस्तेमाल को अपना सके।
- डॉक्टर की मुश्किल हैंडराइटिंग को पढ़ना होगा आसान। AI और मशीन लर्निंग से डॉक्टर के हाथ से लिखे पर्चे को डिकोड किया जा सकगा, यह मददगार टेक्नॉलजी की तरह ही होगा, फार्मासिस्ट बेहतर ढंग से समझ सकें।
- IIT मद्रास के साथ 10 लाख डॉलर की ग्रांट से रिस्पॉन्सिवल AI सेंटर बनाया जाएगा, जिससे भारतीय संदर्भ में AI का सही इस्तेमाल विकसित हो।
- मल्टीसर्च यानी विजुअल सर्च को और समझदार बनाया जाएगा। अगर फोटो से कुछ सर्च करते हैं तो उसमें कुछ कीवर्ड भी लिखकर सर्च को ज्यादा फोकस कर सकते हैं। अंग्रेजी में यह फीचर आ गया है और हिंदी में अगले साल आ जाएगा।
- हिंग्लिश में वॉयस सर्च – गूगल के मुताबिक भारत में लोग आवाज से कमांड देकर सर्च करते हैं तो वे या तो सिर्फ हिन्दी या अंग्रेजी के बजाय मिलीजुली भाषा जैसे हिंग्लिश बोलते हैं। न्यूरल नेटवर्क की तर्ज पर गूगल अलग अलग लहजों को समझते हुए और उनके संदर्भ के हिसाब से रिजल्ट बेहतर कर रही है।
- प्रोजेक्ट रिलेट के जरिए गूगल उन लोगों की मदद करेगी जो सामान्य तरीके से बोल नहीं पाते हैं। रिलेट एप उनकी आवाज समझकर सामान्य आवाज में वह बात दोहराएगा।

