

CONTENTS

S. No.	TITLE	Page No.
Defence News		1-12
Defence Strategic: National/International		1-12
1.	Indian Army Contingent Departs for India- Uzbekistan Joint Military Exercise DUSTLIK	<i>Press Information Bureau</i> 1
2.	General Manoj Pande, Chief of Army Staff Embarks on a Visit to the Republic of Uzbekistan	<i>Press Information Bureau</i> 2
3.	Hardened Shelters, Radars, Defence Systems & more — IAF Quietly Upgrades Bases Focused on China	<i>The Print</i> 2
4.	SC Allows Women Army Officers to Challenge Promotion Policy	<i>Hindustan Times</i> 4
5.	China ‘Accelerates’ Force Multipliers – AEW&C, FRA & EW Aircraft – to Fight US Military; Why India must Act now	<i>The EurAsian Times</i> 5
6.	Expect India to Play Role in Bringing Stability in West Asia: Israeli Envoy	<i>Business Standard</i> 9
7.	Why it's Hard to Hit Israel with Drones and Missiles	<i>The Times of India</i> 10
8.	Ukraine Calls for 'Bold' Air Defence Support from Allies	<i>The Times of India</i> 12
9.	Russia Touts its Air Defence Systems as "Superior" to NATO, Reveals Problems in Ukraine's Strategy	<i>News18</i> 12
Science & Technology News		13-15
10.	Will AI Help or Hinder Trust in Science?	<i>The Week</i> 13



Press Information Bureau
Government of India

Ministry of Defence

Mon, 15 Apr 2024

Indian Army Contingent Departs for India- Uzbekistan Joint Military Exercise DUSTLIK

The Indian Army contingent departed today for the 5th edition of India- Uzbekistan joint military Exercise DUSTLIK. The Exercise is scheduled to be conducted from 15th to 28th April 2024 at Termez, the Republic of Uzbekistan. Exercise DUSTLIK is a yearly event conducted alternatively in India and Uzbekistan. Last edition was conducted at Pithoragarh (India) in February 2023.

The Indian Armed Forces contingent comprising 60 personnel is being represented by 45 personnel from the Indian Army, majorly from a Battalion of the JAT Regiment, and 15 personnel from the Indian Air Force. The Uzbekistan contingent comprising approximately 100 personnel, from Uzbekistan Army and Air Force, will be represented by personnel from Southern Operational Command, part of South-West Military District.

Aim of Exercise DUSTLIK is to foster military cooperation and enhance combined capabilities to execute joint operations in mountainous as well as semi urban terrain. It would focus on high degree of physical fitness, joint planning, joint tactical drills and basics of special arms skills.

Tactical drills to be practiced during the exercise will include creation of a Joint Command Post, establishing an Intelligence & Surveillance Centre, securing of landing site, Small Team Insertion & Extraction, Special Heliborne Operations, Cordon and Search Operations, Room Intervention Drills and Demolition of illegal structures.

The complexity of this edition of Exercise DUSTLIK has been enhanced with conduct of multi domain operations as the contingent comprises of personnel from combat support arms and services besides Infantry. Two Women Officers also form part of the IA contingent, including one from the Regiment of Artillery and the second from the Army Medical Corps.

Exercise 'DUSTLIK' will enable the two sides to share their best practices in Tactics, Techniques and Procedures of conducting joint operations. The Exercise will facilitate developing interoperability, bonhomie and camaraderie between soldiers of both the countries. This will also enhance the level of defence cooperation, further fostering bilateral relations between the two friendly nations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2017945>



**Press Information Bureau
Government of India**

Ministry of Defence

Mon, 15 Apr 2024

General Manoj Pande, Chief of Army Staff Embarks on a Visit to the Republic of Uzbekistan

General Manoj Pande, the Chief of Army Staff (COAS), departed on a visit to the Republic of Uzbekistan from 15th to 18th April 2024, marking a significant step in bolstering the defence cooperation between India and Republic of Uzbekistan.

On 15th April 2024, General Manoj Pande will engage in dialogues with the top defence leadership of the Republic of Uzbekistan. The meetings are planned with Lieutenant General Bakhodir Kurbanov, the Defence Minister of Uzbekistan; Major General Khalmukhamedov Shukhrat Gayratjanovich, the First Deputy Minister of Defence and Chief of the General Staff of the Armed Forces; and Major General Burkhanov Ahmed Jamalovich, the Deputy Minister and Chief of Air and Air Defence Forces. These dialogues are pivotal in fostering stronger military cooperation. The itinerary also includes a visit to the Armed Forces Museum followed by a tour of the Hast Imam Ensemble, offering insights into the rich military history and achievements of Uzbekistan.

On 16th April 2024, the COAS will pay homage to Late Shri Lal Bahadur Shastri, the second Prime Minister of India, by laying a wreath at his monument. Thereafter, he will visit the Victory Park, commemorating Uzbekistan's contributions and sacrifices in the Second World War. The engagements on the day will encompass a visit to the Centre for Innovative Technologies LLC, where the COAS will get an insight into initiatives being undertaken by the Republic of Uzbekistan in defence technology and innovations. General Manoj Pande will thereafter visit the Uzbekistan Armed Forces Academy and inaugurate IT lab at the academy, established with India's assistance.

Travelling to Samarkand on 17th April 2024, General Pande will meet Commander of the Central Military District. The visit will culminate in Termez, on 18th April 2024, where the COAS is also scheduled to witness the Joint Exercise DUSTLIK between the armed forces of India and Uzbekistan, highlighting the interoperability and camaraderie developed between the two countries. He will also visit the Termez Museum and the historical monuments of the Surkhandarya Region, beholding a first-hand account of Uzbekistan's glorious past and cultural landscapes.

The visit by General Manoj Pande aims at strengthening military cooperation between India and Uzbekistan besides exploring new avenues of collaboration between the two nations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2017903>

ThePrint

Mon, 15 Apr 2024

Hardened Shelters, Radars, Defence Systems & more — IAF Quietly Upgrades Bases Focused on China

The Indian Air Force (IAF) in the last four years has been slowly, away from spotlight, upgrading its infrastructure facilities in at least 20 air bases focused on China-centric operations or on having a dual area of operation, ThePrint has learnt.

These upgrades include not just construction of new underground munition centres, hardened aircraft shelters and taxiways but also upgradation of navigational aids, besides setting up of new radars and base defence systems.

Sources in the defence and security establishment told ThePrint that while the plans were already in motion, the military tensions with China since 2020 has led to a more faster and focussed approach.

They explained that even as the tensions with China was just beginning in May 2020, the defence ministry had signed a Rs 1,200 crore contract with Tata Power SED (TPSED) for Modernisation of Air Field Infrastructure (MAFI) of 37 airfields for IAF, Indian Navy and Indian Coast Guard.

This was a follow-on programme to MAFI Phase 1 that included upgradation of 30 airfields of IAF. The project included installation and commissioning of modern airfield equipment like Cat-II Instrument Landing System (ILS) and Cat II Air Field Lightning System (AFLS) among others, which were directly connected to Air Traffic Control (ATC).

Asked about specifics of the other programmes that have been initiated with a focus on China, sources said there has been an increase of infrastructure projects.

“These infrastructure projects were always on cards, and work was initiated on some of these airfields prior to the stand-off with China. But yes, the work has been sped up and more initiated,” a source said.

A second source pointed out that the work involved not just repair of runways and creation of additional taxi ways to enable better tempo of operations, the stand-off has led to increased need for storage of spare parts and munitions.

“Across air bases, the focus is to have hardened underground munition centres. It is not just the IAF that is making them, but also the Army, especially in the Eastern sector,” the second source said.

Popular satellite imagery expert Damien Symon, who goes by his X handle _Detresfa, Monday put out images of the Chabua air base from March 2020 and March 2024 to show the work that has been done.

The difference being that a new large apron (area where aircraft are parked, unloaded or loaded, refueled, boarded, or maintained) has been made at the base which houses the Su-30 MKI fighter jets, besides hardened aircraft shelters and other such developments.

Talking about other upgrades, the sources explained that new radars have been set up at some bases close to the Line of Actual Control (LAC), besides increase in defensive capabilities.

The sources explained that one of the reasons for new infrastructure building is also to cater to drones operations.

“The Army has created integrated aviation Brigades which have seen a larger concentration of drones and helicopters in specific areas. They are based at IAF bases, which also cater to IAF’s own set of drones. Naturally more infrastructure is being created to cater to the increased demand,” a third source said.

Last year, ThePrint had reported that the IAF remains in “operational ready format” along the LAC, even three years after the Galwan clash.

The “operational ready format” refers to fighter aircraft being deployed close to the LAC fully loaded so that they can be airborne in five-seven minutes in case of an operational need. For the uninitiated, an aircraft is said to be fully loaded when it is fueled and live munitions are on board.

<https://theprint.in/defence/hardened-shelters-radars-defence-systems-more-iaf-quietly-upgrades-bases-focused-on-china/2041558/>

SC Allows Women Army Officers to Challenge Promotion Policy

The Supreme Court on Monday allowed women officers alleging discrimination in promotion to challenge the policy introduced last month by the Indian Army for promotion to the rank of brigadier and closed proceedings in a pending application seeking gender-neutral standards to be adopted by the selection board in considering their case for promotion vis-à-vis their male counterparts.

“Now that there is a policy in place, the challenge to it must be heard in an appropriate proceeding,” a bench headed by chief justice of India Dhananjaya Y Chandrachud said. It was due to the court’s prodding that the army introduced a policy on March 29 titled “Future Career Progression Policy for Women Officers” empaneled for promotion as brigadier by selection board - 2 (SB-2).

Disposing the application filed by nearly 30 women colonels, the bench, also comprising justices JB Pardiwala and Manoj Misra said, “If the petitioners are aggrieved by the policy dated March 29, they will have to take remedies as per law. We are not entering into merits absent any procedure as per law. The application is disposed.”

Attorney general R Venkataramani appearing for the Centre along with senior advocate R Balasubramanian appearing for the army shared a copy of the new policy and said future promotions by SB-2 will be governed by this policy. “Large number of relaxations have been granted to the women officers and large number of them have been promoted,” Venkataramani said. “You cannot keep asking for relaxations.”

He further stated that so far, the army only had a policy of November 2021 governing promotions from lieutenant colonel to colonel (SB-3). In December, the court gave time till March 31 for the army to come out with a policy governing SB-2.

The women officers, who have benefitted from the two Supreme Court rulings in the past in the Babita Puniya case (2020) and Nitisha case (2021), have come a long way through fighting for their due rights in the army, which has faced criticism from the top court for its patriarchal mindset.

Senior advocate Archana Pathak Dave, appearing for the women officers, told the court that the new policy suffered from the same flaws as seen in the Nitisha judgment. Explaining the objections to the March 29 policy, a response affidavit prepared by the officers said the policy required them to undergo a mandatory higher course for two years. These courses, according to them, were usually taken in the 6th or 12th year of service and most of the officers have undergone almost 19 years of service.

Dave told the court that the officers will prefer to file a writ petition challenging the policy. Colonel Sarika Pandalwar, assisting Venkataramani in the matter, submitted to the bench that out of the army’s total strength of about 49,000 officers, 150 colonel vacancies have been provided to women officers out of the total of 5,995 posts. The affidavit of the women officers claimed the policy left no scope for their future career progression from brigadier to major general, thus making the policy regressive in its approach.

The army had argued in the past that an officer must meet the “essential eligibility criteria” of minimum two confidential reports (CR) in colonel select rank as any deviation from this

fundamental eligibility criteria will amount to compromising with the operational requirement of the army. Further, for promotion to brigadier, an officer must have operational command of a unit or battalion for 18 to 24 months.

Venkataramani had told the court that while the problem raised by the women officers pertained to the pre-2005 batch, making an exception for the present set of petitioners could have long-term repercussions.

<https://www.hindustantimes.com/india-news/sc-allows-women-army-officers-to-challenge-promotion-policy-101713207979407.html>



Mon, 15 Apr 2024

China ‘Accelerates’ Force Multipliers – AEW&C, FRA & EW Aircraft – to Fight US Military; Why India must Act now

By Air Marshal Anil Chopra (Retd.)

China’s People’s Liberation Army Air Force (PLAAF) and PLA Navy (PLAN) are developing newer variants of airborne ‘Force Multipliers’ such as Flight Refuelling Aircraft (FRA), Airborne Early Warning and Control (AEW&C), and Electronic Warfare (EW) aircraft.

China’s special mission aircraft can also take on signals intelligence/electronic intelligence (SIGINT/ELINT) or electronic attack (EA, jamming) missions. They are also racing ahead in space-based assets and unscrewed airborne platforms.

The airborne force multipliers greatly enhance operational capabilities and boost win-ability chances. Diverse airborne surveillance, command and control, and communications platforms combined with FRA enhance PLA’s battle-space awareness and engagements.

China has a long way to catch up with its competitor, the USA, on this count and, therefore, is displaying urgency. India is significantly behind China on this count. While the government and the Indian Air Force (IAF) have initiated actions, the same needs to be hastened to reduce the capability gap.

PLAAF’s KJ-2000 AEW&C

The KJ-2000 is a Chinese second-generation AEW&C aircraft developed by the Shaanxi Aircraft Corporation and was the first AEW&C system in service in the PLAAF. It is built upon a modified Russian Ilyushin Il-76 airframe using domestically designed avionics and a fixed radome featuring three active electronically scanned array (AESA) radars each covering a 120-degree sector.

China attempted to develop an indigenous AEW&C in the late 1970s, designated KJ-1. However, the project was canceled due to funding constraints. After witnessing the successful use of AEW&C in the Gulf War, these platforms became a priority for China.

The KJ-2000 development program started after the July 2000 cancellation of the A-50I deal with Russia and Israel due to strong American pressure against the export of the Israeli EL/M-2075 Phalcon radar.

Denied import options, China then went on to develop a domestic AEW&C, and the first aircraft made its maiden flight in 2003. The Russia-Israel variant finally went to India.

The Nanjing Research Institute of Electronics Technology (NRIET), a subsidiary of the China Electronics Technology Group Corporation (CETC), developed the multi-function, three-dimensional pulse-Doppler radar.

It is designed to detect and track airborne and surface targets. Operating in the frequency range of 1200–1400 MHz, it has a maximum aerial detection range of 470 km. Its flight characteristics are similar to those of the Indian A-50I AEW&C, which has a range of 5,500 km and 12 hours of endurance.

Only five Shaanxi KJ-2000 AEW&C aircraft could be built. The first flight was in 2003. Additional IL-76 airframes were not available, and Russians had jacked up the prize. The same constraint was faced by India. China's attempt to build Il-76 variants domestically was also given up because of complex supply chain dynamics.

KJ-200 AEW&C

Shaanxi KJ-200 was a backup AEW&C to the KJ-2000. They installed a simplified system on board the smaller Shaanxi Y-8 airframe, the Chinese domestic variant of the Antonov An-12 tactical airlifter.

A “balance beam” lateral-scanning array similar to the Saab Erieye was installed. The platform of this aircraft is based on the Shaanxi Y-8F-600, and it has been reported that Pratt & Whitney Canada PW150B turboprops and Honeywell avionics have been incorporated. 11 were built for use by PLAAF and PLAN.

Shaanxi KJ-500 AEW&C

China also went on to develop the Shaanxi Y-9, an enlarged upgrade of the Y-8 that later served as the basis of the third-generation KJ-500 AEW&C aircraft, and the Xian Y-20, a large strategic airlifter being developed for AEW&C modification.

KJ-500 is a third-generation AEW&C aircraft used by both PLAAF and PLAN. Aircraft development began in the late 2000s with four major technical targets: networking, multi-functionality, high-integration, and lightweight. The aircraft carries a fixed dorsal radome containing three AESA radar arrays for 360-degree coverage and is said to be more efficient than the two-planar ‘balance beam’ array design used on the earlier KJ-200.

The KJ-500A variant debuted in 2022 and incorporates an aerial refueling probe. Twenty aircraft are with PLAAF, 14 with PLAN, and more are being produced. The aircraft reportedly has a range of 5700 km and an endurance of 12 hours. It can detect fighter-sized targets at a distance of 470 km.

KJ-3000 AEW&C

The KJ-3000 is conceptualized around the Xi'an Y-20 large military transport aircraft and is targeted for its capability to detect stealth fighters.

Chinese media announced that Y-20 will soon have an AEW&C and FRA variants. The Y-20 tanker has already been under testing.

According to public papers published in China, the next generation AEW&C would have four capabilities: high detection capability, high anti-interference capability, high identification capability, and high battlefield management capability. The high detection capability of the fifth-generation stealth fighter aircraft is required to be over 360 km.

Other Chinese AEW&C

The Xi'an KJ-600 is a Chinese twin-propeller, quad-tail, high-wing military aircraft designed for cargo and AEW&C. It is intended to be deployed on Type 003 aircraft carriers of the PLAN from late 2024. It made its first flight in August 2020. Around four have been built.

China is also working on the contemporary development of conformal antenna technology, which greatly reduces major airframe changes and their aerodynamic complexities.

It also helps to make full use of the body space to arrange larger radar antennas, reducing the radar cross-section. It could later be applied to the Stealth bomber H-20 design and converted into an AEW&C.

China's Flight Refuelling Aircraft (FRA)

China has a relatively small FRA fleet, considering its continental size and threat perception. This includes just three Russian IL-78, 10 Xian H-6U (18.6-ton fuel), and eight newly inducted Xian YY-20A.

The YY-20A, similar to the Il-78, can carry about 90 tons of fuel. The tanker variant, previously known as Y-20U, features redesigned landing gear. The YY-20 will enhance the PLAAF's "long-range maneuver capability" while retaining its airlifting capability.

Large numbers of indigenous YY-20 are planned to be inducted in the coming years. The aircraft are meant to play a significant role in establishing domination in the South China Sea. They will be crucial for the Taiwan invasion and have already demonstrated aerial refueling of most PLAAF and PLAN fighters.

Reconnaissance & Electronic Warfare Aircraft

PLAAF still has around five old Bombardier Challenger 850 for SIGINT and a solitary Shaanxi Y-8 for surveillance. The bulk of their surveillance is handled using space-based assets and home-built uncrewed platforms. They also have four Tupolev Tu-154s for SIGINT / ELINT roles.

PLAAF is relatively stronger on Electronic Warfare, albeit the platforms are relatively old. These include 14 Shaanxi Y-8, 5 Shaanxi Y-9, and 3 Ukrainian Antonov An-30. They follow the Russian philosophy of brute power jamming and give lesser importance to sophisticated jamming techniques. PLAN also has 13 Chinese Y-8/Y-9-based ELINT aircraft.

Comparisons With The US

China is way behind the US and its partners in force multipliers. The US built 68 Boeing E-3 Sentry AWACS, most of which are still flying with the USAF or friendly foreign air forces.

They have seen operational deployments in all major wars, including by NATO in Ukraine. Japan has 4 Boeing E-767-based AWACS. Over 300 Northrop Grumman E-2 Hawkeye AEW&C were built. They can operate from large aircraft carriers and are operated by many American allies/friends. They have also seen active operations for many decades. Sweden's Saab and Brazil's Embraer have also built AEW&C aircraft.

Similarly, the US armed forces are way ahead in FRA. Having built over 60 KC-10A Extenders, 78 KC-46A Pegasus, and over 800 Boeing 707-based KC-135R and KC-135T Stratotankers, American tankers have seen global operations for decades. Large numbers are held by NATO and other partners.

The US also has a much larger fleet of dedicated Electronic Warfare aircraft. The EC-130H is used for electronic warfare and jamming, and the EC-130J for psychological operations and communications.

They also have specialized aircraft for global special operations missions. The MC-130J aircraft conduct infiltration, exfiltration, resupply, and refueling for SOF teams from improvised or

otherwise short runways. The Boeing EA-18G Growler is an American carrier-based electronic warfare aircraft. Nearly 170 of these were built.

Time For India To Act

China will pull ahead as more Y-20-based AEW&C and FRA enter service. They are also improving the quality of electronics & radars, and jamming equipment. These aircraft can operate from many island airfields created in the South China Sea (SCS).

However, Chinese forces have near zero operational exposure. They have been tested during training with small air forces like Pakistan, but Chinese force multipliers have not been seen at any airshows outside China.

At best, they have been seen by Japanese aircraft in the East China Sea and by the Americans in SCS. The KJ-600 may require another two years to be operational on an aircraft carrier.

China also produces CH-series HALE/MALE UCAVs, which are Predator-type drones. China is working on the flying wing design GJ-11, which is very similar to the US Navy X-47B UCAV. They have a significant lead over India in unscrewed platforms and drones, although India is trying to catch up on drones.

The IAF currently operates three indigenous DRDO Netra Embraer ERJ 145I AEW&C aircraft, and three EL/W-2090 Phalcon AEW&C incorporated into a Beriev A-50 platform.

IAF has sought six additional ERJ 145I Netra. India is also investing in a DRDO project to develop six new AEW&C aircraft on pre-owned airline aircraft as an upgrade to the Netra systems. These additional aircraft may be available by around 2028.

The IAF currently operates six Ilyushin Il-78MKIs as FRA. Attempts to acquire additional FRAs in the last nearly two decades were unsuccessful due to technical and procedural reasons.

It has now been decided that India will convert six pre-used A-320 class aircraft into FRAs through local or OEM-supported modifications.

India long had dedicated EW aircraft, but the last of these were phased out nearly two decades ago. The Mirage 2000 fleet brought in a modern EW suite, including ELINT pods and escort jammers.

DRDO Netra in flight, deploying flares

All IAF fighters and transport aircraft have some elements of a protective EW suit. The Rafale has a state-of-the-art EW suite.

India, too, is a continental-sized country. It is among the most threatened nations in the world, with two nuclear-powered neighbors with whom it has serious territorial disputes and has had wars.

The two could collude during hostilities. India will require assets covering both its borders. Therefore, the existing force multipliers are highly inadequate. Even Pakistan has more AEW&C than India as of date.

The writing has been on the wall for long. The requirements have been well-flagged by the security establishment. Decision-making was earlier slow. India has a long way to get the desired force multipliers in numbers and capability.

The political executive has now become conscious and is pushing for more assets and indigenous capabilities. It is time to hasten, lest we get left further behind.

<https://www.eurasiantimes.com/china-accelerates-force-multipliers-aew-why-india/>

Business Standard

Mon, 15 Apr 2024

Expect India to Play Role in Bringing Stability in West Asia: Israeli Envoy

Israel is "strong and resilient" and, if needed, it will "confront Iran" after the recent attack, the Israeli envoy here asserted on Monday and said India should play a role in bringing stability in the West Asia region.

In an interview to PTI at the Israeli Embassy here, the country's ambassador to India Naor Gilon said that Israeli defence forces with the support of the US and "other friends in the region" were able to "intercept 99 per cent" of the UAVs and missiles fired by Iranians.

However, there was "minor damage" suffered at Nevatim air base in the attack late Saturday, he said.

With Iran's attack on Israel triggering the spectre of a wider conflict in West Asia, India on Sunday said it is seriously concerned over the escalating hostilities between the two sides and called for an immediate halt to violence and return to the path of diplomacy.

External Affairs Minister S Jaishankar held separate telephonic conversations with his Iranian and Israeli counterparts and underlined the importance of avoiding escalation and exercising restraint.

Iran carried out the attack on Israel in response to a suspected Israeli strike on its consulate in Damascus on April 1 that killed seven Iranian Islamic Revolutionary Guards including a senior general.

Ambassador Gilon, in the interview, said India as a "very respected player in the international arena should put its influence and weight" in bringing things back to normal.

He was asked what role he expected from India in the present situation, given the telephonic conversations of Jaishankar with his counterparts in Israel and Iran.

"I think that we expect from India, as a friend, to be very strong in international community in making sure that Iran stops its destabilisation of West Asia.

"I think West Asia as a region is also very important for India because there are millions of Indians working in that region. Many business connections, strong ones with the UAE, Saudi Arabia, Qatar. And, I think, this is very important that India will be active as a part of the international community, in stopping Iran," he said.

Gilon said the Iranians had shot about "350 different UAVs to cruise missiles to surface to surface missiles, all in all about 60 tonnes of explosives", trying to overcome the Israeli defence system by shooting simultaneously.

"Thanks to the US and other friends in the region, and the huge capacity of our air defence and air force, we were able to intercept 99 per cent of these missiles and UAVs and luckily, no casualty. There was one young, seven-year-old girl, a Bedouin Muslim girl from the south of Israel, who was severely wounded, I hope she comes out of it," the Israeli envoy said.

Gilon alleged that the attack was a "clear continuation of the behaviour of Iran" for a very long time, bringing instability in West Asia.

Two days ago, they "changed mould and attacked Israel directly from the territory of Iran" and other territories and also proxies, he said.

"Iran cannot continue this behaviour, if we need we will confront Iran. It is not a choice of ours. We are merely the receiving side here, and we will probably find the right time and moment to retaliate or send back a message to Iran that this is unacceptable.

"We should send the retaliating message that this is unacceptable," the envoy said.

The Israel Defense Forces (IDF) in a post on X on Sunday night had said that the close cooperation between the US military and the IDF has led to the "formation of a strong coalition that proved itself last night in the face of Iran's aerial attack".

Asked what steps are being taken to foster a sense of security among citizens in Israel, Gilon said, "They got a boost of security feeling, from the huge success of the interception of Iranian attack".

Israel does not see "any difference" between an Israeli or a Thai or an Indian resident, "for us, all are the same", he said adding, "We are trying to protect all of them in the same way. There is no difference in Israeli and foreign citizens (in Israel), we treat them the same way".

At present, around 18,500 Indians are residing in Israel, according to official estimates.

The envoy also said, "If Iran goes forward with its nuclear programme, if it will be nuclear ... it will be devastating for the world, not only for Israel".

"So, one has to look at it from this viewpoint too. I think the international community should unite to put pressure on Iran," he added.

On the Iranian military seizing a cargo ship with Israeli links near the Strait of Hormuz on Saturday, he alleged that it was an act of "piracy" by Iran in stopping the ship in international waters.

In his phone conversation with Iranian counterpart Hossein Amir-Abdollahian, Jaishankar had also called for the release of 17 Indians onboard the Portuguese-flagged cargo vessel MSC Aries.

Asked if technology will decide the direction of conflicts in future, Gilon said, "We should say it's Israeli-developed technology, our very good pilots" who went out to counter the cruise missiles, adding, "Technology in future combats is going to be a big factor, a major factor".

https://www.business-standard.com/external-affairs-defence-security/news/expect-india-to-play-role-in-bringing-stability-in-west-asia-israeli-envoy-124041500757_1.html

THE TIMES OF INDIA

Tue, 16 Apr 2024

Why it's Hard to Hit Israel with Drones and Missiles

3-LEVEL SHIELD

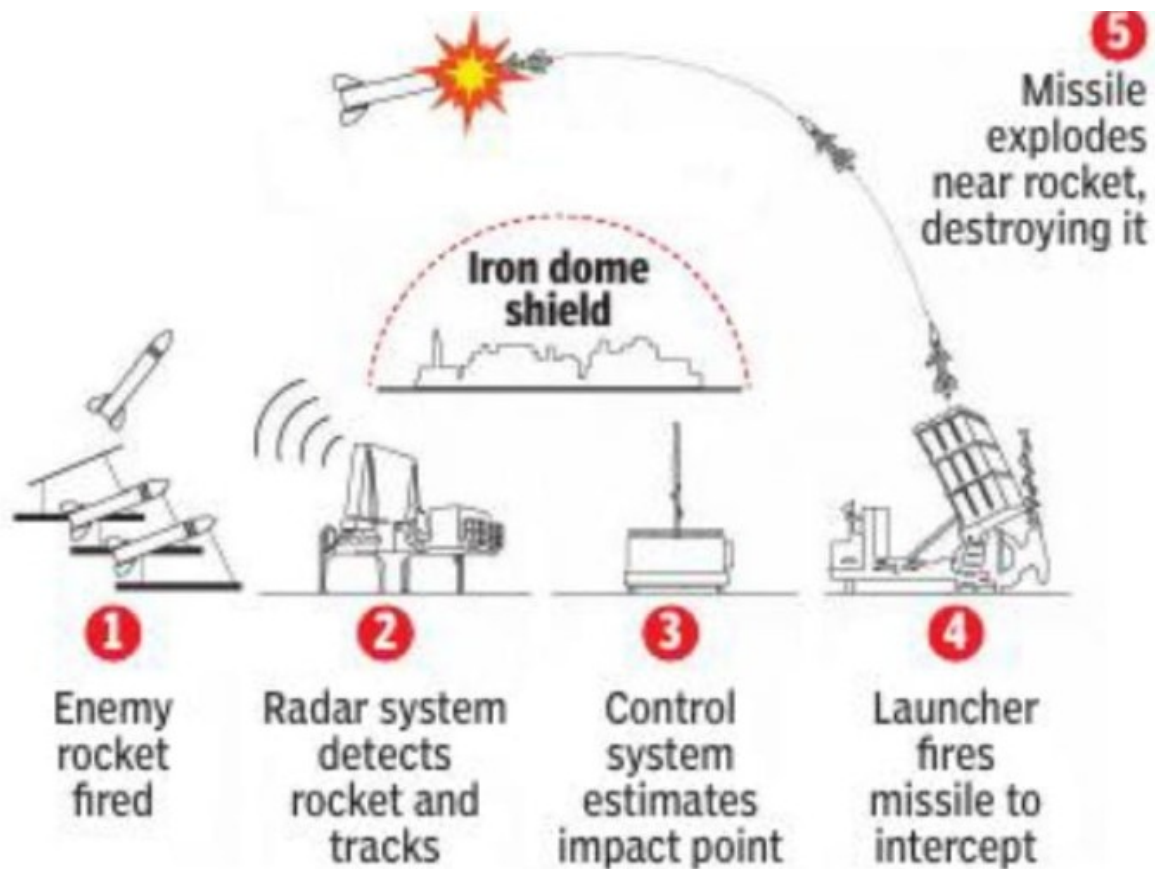
Israel uses three broad types of missile interceptors to counter the threat from Iran's ballistic missiles, and rockets and mortars fired by Hamas, Hezbollah and other Iranian proxies

A Iron Dome B David's Sling C Arrow 2 and 3

IRON DOME

Implemented in 2011, the Dome has saved hundreds of lives in Israel by destroying rockets launched not directly from Iran but the surrounding territories of Gaza, southern Lebanon and Syria. The system uses radar to detect incoming rockets, shells, planes, choppers, etc, but is intelligent enough to disregard attacks that don't pose a threat to life and property. Each

interception attempt costs roughly \$40,000. There are 10 Iron Dome batteries around the country with a long-term success rate of at least 90% against short-range missiles.



Source: Rafael Advanced Defence Systems

DAVID'S SLING

Like the Dome, this medium-range interception system was developed by Israeli firm Rafael (not to be confused with Rafale jets made by French firm Dassault) and made operational in 2017. It can intercept heavy missiles like Zelzal-2, Fateh-110 and M-600. In 2023, it neutralised a rocket fired from the Gaza Strip.

ARROW 2: This system is relatively old, developed over a decade after Iraq fired 42 Scud missiles at Tel Aviv and Haifa in the Gulf war of 1991. Arrow 2 was operationalised in 2000 and aims to destroy long-range ballistic missiles, such as Scud and Iran's Shahab, before they re-enter the atmosphere on their downward path. It can destroy a missile while it's about 200km away from Israeli airspace, but is expensive, with each interceptor missile costing \$3 million. Israel used Arrow 2 to destroy a surface-to-surface ballistic missile fired by Iran-backed Houthis from Yemen last Oct.

ARROW 3: Like Arrow 2, the Arrow 3 defence system targets long-range ballistic missiles while they are still flying through space. However, it uses faster 'hypersonic' missiles to hit targets. It was implemented in 2017, and demonstrated its efficacy last Nov when it downed a missile fired by the Houthis.

<https://timesofindia.indiatimes.com/world/middle-east/why-its-hard-to-hit-israel-with-drones-and-missiles/articleshow/109329522.cms>

Ukraine Calls for 'Bold' Air Defence Support from Allies

Ukraine appealed again to allies on Monday for "extraordinary and bold steps" to supply air defences to help defend against waves of Russian air strikes that have targeted the energy system in recent weeks.

Russian missile and drone attacks have pounded Ukrainian energy infrastructure since mid-March, prompting Kyiv to issue increasingly desperate calls for air defence help.

"We urgently require additional Patriot and other modern air defence systems, weapons and ammunition," Foreign Minister Dmytro Kuleba told a Black Sea security conference via video link. "I take this opportunity to once again urge all of our partners to take extraordinary and bold steps."

"Ukrainian air defence is now protecting not only Ukrainian skies from Russian air terror, it also shields neighbouring Moldova, Romania and Poland from the immediate threat of missiles and drones entering their air space," he added.

The minister said on Sunday negotiations were ongoing for more Patriot systems for Ukraine, but decried their slow pace.

<https://timesofindia.indiatimes.com/world/europe/ukraine-calls-for-bold-air-defence-support-from-allies/articleshow/109309757.cms>



Russia Touts its Air Defence Systems as "Superior" to NATO, Reveals Problems in Ukraine's Strategy

As Russia marked the annual holiday of Air Defence Force Day on April 14, a top Russian commander stressed on the told the country's air force has played in Ukraine conflict. Air and Missile Defense Forces commander Lt. Gen. Andrey Semyonov stressed on how aerial troops have been part of the military strategy since the Ukraine war began. Semyonov said that Russia's Air Defence Troops are "working closely" with the defense sector to make Russian systems superior to their Western counterparts.

<https://www.news18.com/videos/world/russia-touts-its-air-defence-systems-as-superior-to-nato-reveals-problems-in-ukraine-s-strategy-8852605.html>

Will AI Help or Hinder Trust in Science?

In the past year, generative artificial intelligence tools such as ChatGPT, Gemini, and OpenAI's video generation tool Sora have captured the public's imagination. All that is needed to start experimenting with AI is an internet connection and a web browser.

You can interact with AI like you would with a human assistant: by talking to it, writing to it, showing it images or videos, or all of the above.

While this capability marks entirely new terrain for the general public, scientists have used AI as a tool for many years. But with greater public knowledge of AI will come greater public scrutiny of how it's being used by scientists.

AI is already revolutionising science six per cent of all scientific work leverages AI, not just in computer science, but in chemistry, physics, psychology and environmental science.

Nature, one of the world's most prestigious scientific journals, included ChatGPT on its 2023 Nature's 10 list of the world's most influential and, until then, exclusively human scientists.

The use of AI in science is twofold.

At one level, AI can make scientists more productive.

When Google DeepMind released an AI-generated dataset of more than 380,000 novel material compounds, Lawrence Berkeley Lab used AI to run compound synthesis experiments at a scale orders of magnitude larger than what could be accomplished by humans.

But AI has even greater potential: to enable scientists to make discoveries that otherwise would not be possible at all.

It was an AI algorithm that for the first time found signal patterns in brain-activity data that pointed to the onset of epileptic seizures, a feat that not even the most experienced human neurologist can repeat.

Early success stories of the use of AI in science have led some to imagine a future in which scientists will collaborate with AI scientific assistants as part of their daily work.

That future is already here. CSIRO researchers are experimenting with AI science agents and have developed robots that can follow spoken language instructions to carry out scientific tasks during fieldwork.

While modern AI systems are impressively powerful especially so-called artificial general intelligence tools such as ChatGPT and Gemini they also have drawbacks.

Generative AI systems are susceptible to "hallucinations" where they make up facts.

Or they can be biased. Google's Gemini depicting America's Founding Fathers as a diverse group is an interesting case of over-correcting for bias.

There is a very real danger of AI fabricating results and this has already happened. It's relatively easy to get a generative AI tool to cite publications that don't exist.

Furthermore, many AI systems cannot explain why they produce the output they produce.

This is not always a problem. If AI generates a new hypothesis that is then tested by the usual scientific methods, there is no harm done.

However, for some applications a lack of explanation can be a problem.

Replication of results is a basic tenet in science, but if the steps that AI took to reach a conclusion remain opaque, replication and validation become difficult, if not impossible. And that could harm people's trust in the science produced. A distinction should be made here between general and narrow AI.

Narrow AI is AI trained to carry out a specific task. Narrow AI has already made great strides. Google DeepMind's AlphaFold model has revolutionised how scientists predict protein structures.

But there are many other, less well publicised, successes too such as AI being used at CSIRO to discover new galaxies in the night sky, IBM Research developing AI that rediscovered Kepler's third law of planetary motion, or Samsung AI building AI that was able to reproduce Nobel prize winning scientific breakthroughs.

When it comes to narrow AI applied to science, trust remains high.

AI systems especially those based on machine learning methods rarely achieve 100 per cent accuracy on a given task. (In fact, machine learning systems outperform humans on some tasks, and humans outperform AI systems on many tasks. Humans using AI systems generally outperform humans working alone and they also outperform AI working alone. There is a large scientific evidence base for this fact, including this study.)

AI working alongside an expert scientist, who confirms and interprets the results, is a perfectly legitimate way of working, and is widely seen as yielding better performance than human scientists or AI systems working alone.

On the other hand, general AI systems are trained to carry out a wide range of tasks, not specific to any domain or use case.

ChatGPT, for example, can create a Shakespearian sonnet, suggest a recipe for dinner, summarise a body of academic literature, or generate a scientific hypothesis.

When it comes to general AI, the problems of hallucinations and bias are most acute and widespread. That doesn't mean general AI isn't useful for scientists but it needs to be used with care.

This means scientists must understand and assess the risks of using AI in a specific scenario and weigh them against the risks of not doing so.

Scientists are now routinely using general AI systems to help write papers, assist review of academic literature, and even prepare experimental plans.

One danger when it comes to these scientific assistants could arise if the human scientist takes the outputs for granted.

Well-trained, diligent scientists will not do this, of course. But many scientists out there are just trying to survive in a tough industry of publish-or-perish. Scientific fraud is already increasing, even without AI.

AI could lead to new levels of scientific misconduct either through deliberate misuse of the technology, or through sheer ignorance as scientists don't realise that AI is making things up.

Both narrow and general AI have great potential to advance scientific discovery.

A typical scientific workflow conceptually consists of three phases: understanding what problem to focus on, carrying out experiments related to that problem and exploiting the results as impact in the real world. AI can help in all three of these phases.

There is a big caveat, however. Current AI tools are not suitable to be used naively out-of-the-box for serious scientific work.

Only if researchers responsibly design, build, and use the next generation of AI tools in support of the scientific method will the public's trust in both AI and science be gained and maintained.

Getting this right is worth it: the possibilities of using AI to transform science are endless.

Google DeepMind's iconic founder Demis Hassabis famously said: "Building ever more capable and general AI, safely and responsibly, demands that we solve some of the hardest scientific and engineering challenges of our time."

The reverse conclusion is true as well: solving the hardest scientific challenges of our time demands building ever more capable, safe and responsible general AI. Australian scientists are working on it.

<https://www.theweek.in/news/sci-tech/2024/04/15/will-ai-help-or-hinder-trust-in-science--.html>

© The news items are selected by Defence Science Library, DESIDOC from Print Newspapers and Authentic Online News Resources (mainly on DRDO, Defence and S&T)