समाचार पत्रों से चयित अंश
Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

A Daily Current Awareness Service

Vol. 45 No. 61 26 March 2020

रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केन्द्र
Defence Scientific Information & Documentation Centre
मैटकॉफ हाऊस, दिल्ली - 110 054
Metcalfe House, Delhi - 110 054

THE ECONOMIC TIMES

Thu, 26 March 2020

Covid-19 crisis: Defence ministry ropes in DRDO, OFB to manufacture essential medical equipments

While the Defence Research and Development Organisation (DRDO) has commenced manufacturing of sanitisers at its laboratories throughout the nation, the OFB, which makes guns, ammunition and clothing for the armed forces, has started a pilot project to produce personal protection equipment

By Manu Pubby

New Delhi**:** The defence ministry is stepping up efforts to combat the Covid-19 crisis, with its public sector units and the Ordnance Factory Board (OFB) being roped in to manufacture essential medical equipment on a war footing.

While the Defence Research and Development Organisation (DRDO) has commenced manufacturing of sanitisers at its laboratories throughout the nation, the OFB, which makes guns, ammunition and clothing for the armed forces, has started a pilot project to produce personal protection equipment.

Sources said the facilities to produce the protective clothing can be scaled up to meet requirements once the first batch meets medical standards. The organisation is also setting up isolation wards at its various hospitals in places like Jabalpur, Khadki, Avadi and Ambernath.

DRDO is also in touch with private sector manufacturers to scale up production of much needed ventilators on a war footing. A self developed formula to produce sanitisers and disinfectants on a large scale has been shared across DRDO labs. Several sensitive institutions— agencies, law enforcement and important government offices—have been supplied with the disinfectants that are being used on a daily basis.

“We have supplied almost 15,000 bottles of the sanitiser formulation for distribution to other organisations. Efforts are on to produce it on a large scale,” a DRDO official said.

Given the scale of the problem, even the army followed the lockdown protocol at the headquarter level, with office goers instructed to work from home. Officials said almost 40% of the Army HQ staff is continuing to work from home but emergency staff including medical personnel is still functional.

The quarantine centres set up by the military are however operational at capacity, with additional areas being earmarked if the need arises.

On Wednesday, India’s biggest military quarantine facility at Jodhpur received 277 evacuees from Iran, including six children.

The citizens have been screened and will stay in Jodhpur for two weeks. Significantly, while the military has quarantined about 1,200 evacuees till now, only two positive cases have been reported, with the first set of people already released. The positive tests pertained to persons who had returned from Italy and Iran.

Evacuees from Wuhan and Japan that came earlier have been sent home after the quarantine period. “More army medical facilities at Jhansi, Binnaguri and Gaya are kept at standby with an additional collective capacity of 1,600 persons,” an army spokesperson said.

https://economictimes.indiatimes.com/news/defence/covid-19-crisis-defence-ministry-ropes-in-drdo-ofb-to-manufacture-essential-medical-equipments/articleshow/74818663.cms

THE FINANCIAL EXPRESS

Thu, 26 March 2020

Fight against Coronavirus: After sanitizers and testing kits, DRDO and OFB to make masks

"We are working on N-99 masks and not on the N-95 masks which are meant just for specialized usage. The N-99 masks will not be for the general public usage yet," explained a senior officer on condition of anonymity

By Huma Siddiqui

After successfully creating formulation for sanitizers and testing and detecting kits, Defence Research and Development Establishment, (DRDE) Gwalior, is now working on N-99 masks.

"We are working on N-99 masks and not on the N-95 masks which are meant just for specialized usage. The N-99 masks will not be for the general public usage yet," explained a senior officer on condition of anonymity.

"The work is going on for making these specialized masks and the special material has been sourced from Atira, Ahmedabad," he added.

"The DRDO life science laboratories have developed many remarkable technologies for the soldiers and have spin-off benefits. And these include Chemical Agent Detectors and Protective Suit Mk-V to provide protection to soldiers," said a senior officer.

In other labs of DRDO, a universal type mask has been developed to offer protection against the accidental mine blasts where the soldiers may lose their eyes and suffer face injuries.

If the DRDO has been approached to make Hazmat Suits?

The answer is no.

"We are not making Hazmat suits, however, we are supporting other agencies with our expertise to make these special suits for those who are handling the coronavirus cases here in India. These are meant for the hospitals, the quarantine camps that have been set up by the Indian armed forces across the country," the officer explained.

These are being made according to the standardized protocols specified by the National Center of Disease Control's (NCDC).

So what is Special protective clothing?

These are for soldiers deployed in extreme cold weather and glacier regions, where temperature goes up to – 400 C has already been developed by Kanpur based Defence Materials and Stores Research & Development Establishment (DMSRDE).

According to the response given by the late defence minister Manohar Parrikar in the Parliament, DRDO lab has also created protective items for dealing with Nuclear, Biological & Chemical Warfare.

The expertise DRDO can be shared with other agencies including the Ordnance Factories to produce them when needed.

Sanitizer

The formulation created for the sanitizer is for limited production and has been sent to various government agencies including the Prime Minister's Office, armed forces, Ministry of Defence, Ordnance Factory Board (all factories) as well as others.

"This sanitizer is not going to be commercialized any time soon", explained a senior DRDO officer.

However, if required the formulation can be shared with making large quantities.

https://www.financialexpress.com/defence/fight-against-coronavirus-after-sanitizers-and-testing-kits-drdo-and-ofb-to-make-masks/1909177/

दैनिक जागरण

Thu, 26 March 2020

सशस्त्र बल युद्धस्तर पर कोविड-19 से मुकाबला करें

- सीडीएस जनरल रावत ने सैन्य अफसरों से किया आह्वान
- सेना मुख्यालय भी एक दिन के लिए बंद, आज से 15 फीसद स्टाफ रहेगा

जनरल बिपिन रावत। फाइल

नई दिल्ली, एजेंसियां: कोविड-19 के तेजी से बढ़ते संक्रमण को देखते हुए चीफ ऑफ डिफेंस स्टाफ जनरल बिपिन रावत ने कहा है कि अब समय आ गया है कि सैन्य बल हर तरह की सहायता को युद्धस्तर पर प्रभावित लोगों तक पहुंचाएं। इसमें कोरोना वायरस संबंधी क्वारंटाइन सुविधाओं के साथ ही विशेषज्ञ स्तर की देखभाल भी शामिल है। वहीं वायुसेना ने भी अपने अफसरों से लॉकडाउन के चलते अपनी कल्याणकारी योजना के लिए फंड जारी करने में असमर्थता जताई है। कोरोना वायरस की विभीषिका सैन्य बलों को प्रभावित न करे, इसके लिए दिल्ली के साउथ ब्लाक स्थित सेना मुख्यालय को भी बंद कर दिया गया है।

चीफ ऑफ डिफेंस स्टाफ (सीडीएस) जनरल बिपिन रावत ने बुधवार को कहा कि समय आ गया है कि नोवल कोरोना संक्रमण से युद्ध में सशस्त्र बल अपने निर्धारित कार्यक्षेत्र से आगे बढ़कर काम करें। रक्षा अफसरों को चुनौतियों के लिए तैयार रहना चाहिए। सीडीएस ने कहा कि सैन्य बलों से यह उम्मीद की जाती है कि वह सरकार की मदद करें और जिन लोगों को तत्काल देखभाल की जरूरत है उनके लिए आइसोलेशन और क्वारंटाइन के लिए बुनियादी व्यवस्था करें। साथ ही विशेष चिकित्सा केंद्रों की व्यवस्था करें।

जनरल रावत ने इस बात पर भी बल दिया कि सैन्य बल हर चुनौती के लिए तैयार रहते हुए सभी सरकारी एजेंसियों के साथ पूरे तालमेल से काम करें। उन्होंने कहा कि कोविड-19 भारतीयों को नुकसान पहुंचाने में तभी कामयाब होगा जब समय-समय पर दिए जा रहे दिशा-निर्देशों का पालन नहीं होगा। सेना ने सभी सैन्य अफसरों और उनके परिजनों को पहले ही यह निर्देश जारी किए हैं कि वह सभी नियमों का पालन पूरी तत्परता से करें। हाल ही में सीडीएस (जो सैन्य विभाग के सचिव भी हैं) ने विदेश से लाए गए लोगों के लिए क्वारंटाइन फैसिल्टी बनाने के लिए कैबिनेट सचिव और अन्य वरिष्ठ सरकारी अफसरों के साथ बैठकें की हैं। अब तक इटली, ईरान, चीन और दक्षिण एशिया देशों से करीब 1500 भारतीयों को वापस लाया गया है। इन्हें क्वारंटाइन में गुरुग्राम, जैसलमेर, मुंबई और हिंडन में रखा गया।

सूत्रों के अनुसार दूसरी ओर, प्रधानमंत्री नरेंद्र मोदी के संपूर्ण लॉकडाउन के आह्वान के बाद दिल्ली के रायसीना हिल्स स्थित साउथ ब्लॉक में बुधवार को सेना के मुख्यालय को भी बंद कर दिया गया है। गुरुवार से यहां 15 फीसद के न्यूनतम स्टाफ के साथ फिर से कामकाज शुरू होगा। बुधवार को सैन्य मामलों के विभाग के दफ्तर को भी बंद कर दिया गया है। इससे पहले, मुख्यालय में सैन्य स्टाफ 50 फीसद तक कम कर दिया गया था। साथ ही सेना प्रमुख ने सैन्य अफसरों से सोशल डिस्टेंसिंग के मानकों का पालन करने को कहा था। 23 मार्च को सेना प्रमुख ने सैन्य अफसरों की उपस्थिति कम करने को कहा था। सेना ने अपनी कैंटीन और स्टोर भी बंद कर दिए हैं।

DefenceNews

Thu, 26 March 2020

Armed forces to work beyond mandate to support nation in battling COVID-19, says CDS Gen Bipin Rawat

Coordinating efforts of the military in controlling COVID-19 spread, Chief of Defence Staff Gen Bipin Rawat has said that at this juncture, the uniformed force needs to extend all type of assistance ranging from creating quarantine infrastructure to providing specialist care to help the nation combat Coronavirus.

Speaking to ANI, the Chief of Defence Staff said the time has come when the armed forces will have to operate beyond their mandate in this battle against the novel coronavirus and the defence personnel should be ready for the challenge.

"Uniformed forces are expected to support the government and provide every type of assistance from developing infrastructure for isolation and quarantine to preparing speciality medical care centres for those who need immediate care," the CDS said.

Prompting the defence forces to prepare for the challenge, he added, "At this juncture, it is time for the uniformed services to operate beyond their mandate." Gen Rawat stressed that the overall coordinated effort by all the government agencies to contain COVID-19 would succeed only if the people follow the instructions that are being sent out from time to time.

"The Armed Forces have already issued instructions to all the ranks and families to strictly follow those instructions," he said. The CDS, who is also the Secretary, Department of Military Affairs, has been attending the meetings with the Cabinet Secretary and other top government functionaries, has been coordinating with the three defence forces for quarantine of people being evacuated from abroad.

Around 1500 people brought back from Italy, Iran, China and Southeast Asian countries have been quarantined by the forces at places such as Gurugram, Jaisalmer, Mumbai, and Hindan. Over 15 facilities have also been created where the evacuees are being made to spend their quarantine time.

https://www.defencenews.in/article/Armed-forces-to-work-beyond-mandate-to-support-nation-in-battling-COVID-19,-says-CDS-Gen-Bipin-Rawat-809890

THE TIMES OF INDIA

Thu, 26 March 2020

Indian Army HQ closed amid coronavirus scare

New Delhi: Indian Army headquarter at iconic South Block at Raisina Hill remained closed on Wednesday after Prime Minister Narendra Modi gave a clarion call for complete lockdown to fight COVID-19.

The Army headquarter will function with bare minimum staff of around 15 per cent from Thursday onwards, sources said.

The office of Department of Military Affairs was also closed on Wednesday. Talking about COVID-19, the Chief of Defence Staff General Bipin Rawat said the country is at a juncture where the armed forces will have to operate beyond their mandate and help the country in the fight against coronavirus.

Earlier, the force had reduced 50 per cent staff at headquarter and had issued guidelines for their personnel pertaining to social distancing.

Indian Army Chief had directed to reduce attendance in offices with effect from March 23, 2020, excluding personnel engaged in essential and emergency services directly involved in taking measures to control spread of COVID-19.

It shall be ensured that personnel are available on telephone and electronic means at all times for exigencies of work.

In order to avoid crowding at entry and exit points, personnel attending office to adhere to staggered timings -- 9 a.m. to 5.30 p.m. and 9.45 a.m. to 6.15 p.m.

Indian Army on Monday closed its canteen stores and decided to provide home delivery of grocery and essential items. The force has asked his men to maintain social distancing while performing all tasks.

"All tasks related to response to COVID-19 should continue without hindrance," the advisory stated.

Army has also imposed restricted movements in Cantonments and military stations.

The force had permitted personnel engaged in essential services like medical establishments, fire, electricity/ water supply, communication, post offices and sanitation services will continue to work.

"Additional districts/ extension of lockdown time frame by state governments will be adhered to as when promulgated," it stated.

https://timesofindia.indiatimes.com/india/indian-army-hq-closed-amid-coronavirus-scare/articleshow/74810555.cms

news INTERVENTION

Thu, 26 March 2020

India's Armed Forces at the forefront in fight against COVID-19

By Nilesh Kunwar

Even as Pakistan Army chief Gen Qamar Javed Bajwa was holding a "special" commanders conference in Rawalpindi on the single-point agenda on how to deal with the COVID-19 pandemic, 770 miles away, the Indian Army had completed the construction of yet another quarantine centre in Jaisalmer. With this, the Indian Army has created facilities that can accommodate nearly 5000 people in different parts of the country. In contrast, the state of Coronavirus quarantine camps in Pakistan isn't very encouraging as is evident from reports trickling out of one such facility in Balochistan's Taftan area.

Predictably, the Pakistan Army has turned the issue of assisting in combatting the COVID-19 into a public relations exercise by making political statements like "Nothing can defeat a responsible and determined nation" and repeating the obvious by saying, "Pakistan Army, being part of national effort, shall serve and protect the nation as a sacred duty." In sharp contrast, even though the Indian Army didn't make a big show of its concern on outbreak of the COVID-19 pandemic through the charade of high-level conferences or nationalist sloganeering, it has nevertheless been silently and efficiently working overtime in order to ensure availability of hygienic and comfortable facilities to those quarantined.

Here it would be appropriate to clarify that what has been stated above is not intended to belittle the Pakistan Army, or to eulogise the Indian Army- it's only to highlight that unlike its boisterous counterpart across the Radcliff Line, the Indian Army firmly believes in diligently doing its duty without resorting to theatrics. In fact, there are times when its traditional aversion to undue publicity makes many take the Indian armed forces for granted, but this doesn't upset our soldiers, sailors or airmen because for them it's not adulation but the mental satisfaction of having been able to have contributed towards ameliorating the sufferings of their own people is what really matters.

So, let's leave Rawalpindi to its own devices and instead, focus on the sterling role being played by the Indian armed forces in the nation's concerted fight against COVID-19.

Besides proving its unmatched prowess in thwarting external aggression, the Indian armed forces have simultaneously displayed their phenomenal ability to successfully overcome fearful odds by ensuring safety, providing medical attention and succour to our countrymen during natural calamities, man-made disasters, unrest and other tragedies. In fact, it's the tradition of selfless service, deep sense of responsibility and genuine concern for the well being of the people that endears the soldiers, sailors and air men of the Indian armed forces to every Indian.

It's not that the army's job will end once they complete construction of quarantine hubs. *Au contraire* that's the time when their actual role will start, because the overall responsibility of such centres will be that of the men in uniform. Since there are bound to be confirmed cases of COVID-19 amongst those under quarantine, these facilities will have to be kept under a frequent disinfection and extremely stringent quarantine regime. In addition, since the army will be also providing requisite administrative support to facilitate efficient functioning of these centres, it may be appreciated that soldiers employed here would be working in a potentially hazardous environment!

The Indian Army has already established quarantine centres at Jodhpur, Jaisalmer, Kolkata, Chennai, and Manesar, while Indian Air Force (IAF) has done likewise in Dundigal (Hyderabad), Bengaluru, Hindon, Kanpur, Gorakhpur, Jorhat and Jaisalmer. The Indian Navy has established quarantine centres at Kochi, Visakhapatnam and Mumbai and Defence Minister Rajnath Singh has assured the nation that the Indian armed forces will set up more such hubs as per the requirement. The fact that soldiers of the army in Jaisalmer have even vacated their accommodation to make the same available to those being quarantined speaks volumes!

While administering quarantine centres is an onerous responsibility, in J&K and Ladakh, challenges being faced by the army on this account are further accentuated due to remoteness of the area, widely dispersed habitation centres and harsh climatic conditions. For example, while ensuring social distancing as a mandatory norm during quarantine, to be able to provide adequate space as well as effective heating arrangements necessitated by the cold climate in the upper reaches isn't cost-effective and hence an impractical proposition. Similarly, though establishing quarantine centres near habitation centres would amount to frittering resources, but at the same time those living in isolated areas cannot be left unattended.

Accordingly, quarantine centres for people of J&K and Ladakh would perforce have to be located in areas that have temperate climatic conditions as well as easy accessibility. The Northern Command Headquarters has already established a COVID -19 monitoring hub which is functioning under Command Hospital Udhampur and has four isolation wards a dedicated team of specialist doctors. This centre has all the requisite medical equipment and is geared for round the clock functioning to screen and manage COVID-19 patients.

The army and IAF are working in tandem to ensure that the civil administration is fully geared to combat COVID-19. Based on the requirement projected by Srinagar Municipal Corporation, IAF airlifted 1,200 kilograms of critical sterilization chemicals from Delhi to Srinagar in two Dornier aircrafts while the army organised its delivery at the required sites. COVID-19 screening facility setup by the civil administration at Srinagar airport have been enhanced by providing additional medical teams of the army. Srinagar-based 15 Corps has also established a quarantine hub near the airport and an isolation facility at 92 Base Hospital in Badami Bagh. In addition, personnel of Army Medical Corps are also undergoing combined training programmes being organised under the aegis of WHO.

Plans are also in place to establish more screening centres and quarantine hubs in J&K and Ladakh when civil administration requests for the same and resources have also been earmarked to ensure that no time is wasted in setting up these facilities. At the grass root levels, the army has undertaken an extensive programme to educate locals on the precautionary measures against COVID-19 and the importance of those noticing symptoms to immediately seek medical attention. By laying additional emphasis on removing public apprehension regarding quarantine and advising

people to remain calm, refrain from believing in rumours or spreading them and not falling prey to quacks or faith healers, the scope of mass panic erupting has been minimised.

With the armed forces taking all necessary precautions to ensure that quarantine hubs function efficiently and are kept free from the contagion, there's no cause for undue worry. All we have to do is to act responsibly, fully cooperate with the authorities by strictly adhering to the stipulated 'do's and don'ts' and ensuring that the environment is conducive for doctors and the medical staff to attend to the patients.

(The Writer is a retired Indian Army Officer who has served in terrorism-infested areas of Jammu & Kashmir, Assam, Nagaland and Manipur. He is a 'Kashmir-Watcher' who keeps a close tab on the state's developments.)

https://www.newsintervention.com/indias-armed-forces-at-the-forefront-in-fight-against-covid-19/

THE FINANCIAL EXPRESS

Thu, 26 March 2020

Keeping watch on Dragon: Indian Navy's robust surveillance mechanism to track Chinese UUVs in Indian Ocean

The Unmanned Underwater Vehicles (UUVs) used for underwater work like ship's hull inspection etc. remains underwater for a limited duration

By Huma Siddiqui

Presence of Chinese research vessels deep in the Indian Ocean Region (IOR) has been a known fact. Oceans being Global commons, there is very little which any country or Navy could do to stop these activities by the Chinese Navy opines a former Indian Navy officer. Sharing his views with the Financial Express Online, former spokesperson of the Indian Navy Capt DK Sharma says, "The Indian Navy has a robust surveillance mechanism spread all over in its 'Area of Operations' with its assets suitably deployed to maintain a clear picture of activities being undertaken by extra-regional navies as well as to monitor white shipping (Merchant vessels traffic) operating in Sea lanes of Communications (SLOCs)."

"India has been wary of the dubious designs of PLA (Navy) in our Area of Operations since 2008 wherein they started sending warships for Anti Piracy Operations in/ off the Gulf Of Aden. This Anti-Piracy Escort Force (APEF) comprised two-three warships with a support ship in tow. Presence of submarines both conventional and nuclear, as a part of APEF, surprised the world and was taken note of. The increase in the size of APEF and also the presence of Oceanographic Research and similar ships in IOR has been common knowledge," Sharma explains.

However, "they (Chinese Navy) have a serious objection to any Navy operating in the South China Sea and claim it to be their sovereign territory," he adds.

Recently, Forbes carried a report titled `China Deployed 12 Underwater Drones In Indian Ocean' by H I Sutton. The report quoting sources talks about the deployment by the Chinese of Uncrewed Underwater Vehicles (UUV) since last December which had completed 3,400 observations until last month.

Does the Indian Navy have these UUVs? The answer according to a senior naval officer is "The Indian Navy has other gadgets that do the same work but not of the level like the Chinese."

"The operations of glider UUVs in Indian Ocean Region by the Chinese side is to prepare the arena for successful submarine operations in this region" said a senior officer.

What are Unmanned Underwater Gliders

The Unmanned Underwater Vehicles (UUVs) used for underwater work like ship's hull inspection etc. remains underwater for a limited duration. "However, these UUVs used by Chinese

side were special unmanned underwater drones called ‘underwater gliders’ which can remain in the ocean for long-duration like two weeks to months. These gliders do not have an engine or a propeller and moves in water using the buoyancy principle. When lowered in water from a ship, and on receipt of an activation command from the ship or a satellite, the glider’s onboard navigation system is cut into action and weight (like battery weight) is shifted forward and the glider takes a dive into the ocean water,” explains C4I expert Milind Kulshreshtha.

According to him, “The Port and Starboard wing configuration along with the tail fin helps glider move through the water and after levelling out by bouncy, it commences the ascent phase. While in the journey, the glider is capable of picking up data using onboard sensors for Temperature variation with depth, water salinity etc. With this buoyancy movement, the glider can travel about a kilometre horizontal distance and with an ability to stay in water for a longer duration is capable of covering up to 24 km in a day. This arrangement provides a high spatial resolution ocean water data, which is continuously stored in the onboard hard disk and, time to time, transmitted back to the mother ship or a satellite using a tail-mounted radio antenna.”

Role of Glider UUVs

The underwater profiling of ocean — parameters like temperature gradient variation of the depth change or salinity variations are important information when it comes to submarine operations. “The underwater ranges at which submarine sonar (Sound Navigation and Ranging) equipment can detect enemy warship is highly dependent on such parameters. These go a long way to plan warfare tactics. On the other hand, the warship’s onboard fixed hull-mounted sonar or towed array sonar’s ranges too are highly dependent on these ocean parameters and assist in Threat perspicacity computations,” explains the C4I expert.

At any given time, our own ships and the enemy submarine, both are always keen to be aware of weather-related profiling of ocean waters.

The measurements made by the Chinese UUVs should be the primary focus for Indian Navy too, in order to maintain the sonar range advantage. Detection of signal in the presence of background noise and within multi-layer ocean waters are the key to winning for each side.

https://www.financialexpress.com/defence/keeping-watch-on-dragon-indian-navys-robust-surveillance-mechanism-to-track-chinese-uuvs-in-indian-ocean/1909143/

DEFENCE AVIATION POST

Your Connect To The World Of Defence And Aviation

Thu, 26 March 2020

Why AH-64E Apache and MH-60 Romeo helicopters are important for Indian armed forces

India and the US on Tuesday finalised defence deals worth USD 3 billion under which India will procure 30 military helicopters–six AH-64 Apache and 24 MH-60 Romeo Helicopters– from two US defence majors for Indian armed forces. The announcement on the deals was made by US President Donald Trump after his wide-ranging talks with Prime Minister Narendra Modi.

Let us also find out why these helicopters are of importance to the Indian armed forces. The MH-60 Romeo is considered one of the world’s finest Multirole Helicopters and the Indian Navy has been waiting for such a helicopter for more than a decade.

It is capable of launching an accurate attack by locating enemy submarines and warships in the sea. Radar, missile and rocket systems can be installed on it and this helicopter also has the capability of night vision.

This helicopter can also help in search and rescue operations in the sea. These can also be deployed on India’s aircraft carriers and destroyers. With the help of the MH-60 Helicopter, India will have the power to compete with China’s submarines in the Indian Ocean.

According to the defence deal, the Indian Army will also get Apache combat helicopters. An Apache missile on the battlefield also destroys enemy tanks weighing 70 tons. This attack helicopter can also target the launch pad of terrorists across the Line of Control. And with the help of Apache, India's airstrikes will be more deadly than before.

With these weapons, India and the US have pledged to strengthen their QUAD alliance against China. After the Doklam dispute in 2017, India resumed the QUAD alliance.

https://www.defenceaviationpost.com/2020/03/why-ah-64e-apache-and-mh-60-romeo-helicopters-are-important-for-indian-armed-forces/

DEFENCE AVIATION POST
Your Connect To The World Of Defence And Aviation

Thu, 26 March 2020

Thyssenkrupp marine systems and MDL win service contract for overhaul of Indian Navy submarine

Thyssenkrupp Marine Systems was awarded a high two-digit million euros Medium Refit and Life Certification (MRLC) contract by Mazagon Dock Shipbuilders (MDL) for the overhaul and modernization of the Indian Navy submarine INS Shishumar

It includes the delivery of new equipment, the maintenance of systems and components, as well as on-site technical support and logistical services in form of documentation, training and spare parts. In addition, it entails a life certification that warrants the operability of the INS Shishumar's pressure hull for the next decade.

Dr. Rolf Wirtz, CEO of Thyssenkrupp Marine Systems: "We are looking forward to working with MDL to perform the deep modernization work to ensure that INS Shishumar remains a very capable combat submarine for the Indian Navy over the years to come. Our experience with the Shishumar class and the outstanding skills of MDL's employees are the basis for the return of the submarine back to the Indian Navy in great shape."

Matthias Bergande, MRLC Campaign Manager of Thyssenkrupp Marine Systems: "We are happy to partner with MDL, the renowned Indian shipyard, which has proven already in the 1980ies to be capable of building new submarines. This contract once again reiterates our long-standing commitment to the country and represents another cornerstone in maintaining the operational capabilities of the Indian submarine force."

The refit of the INS Shishumar, which takes place at MDL's dockyard in Mumbai, is expected to be completed by 2021.

Already in 2016, Thyssenkrupp Marine Systems had been awarded a contract to modernize the Harpoon missile system of two other submarines of the same class: the INS Shalki and the INS Shalkul. The modernization of these boats is currently underway. Additionally, ATLAS ELEKTRONIK, which is an Operating Unit of Thyssenkrupp Marine Systems since 2017, is currently modernizing the combat and sensor systems of these submarines.

The three aforementioned submarines belong to a batch of four assets that were commissioned between 1986 and 1994. The construction of the first two submarines (INS Shishumar and INS Shankush) took place at the HDW shipyard (now Thyssenkrupp Marine Systems) in Kiel, Germany, including an intensive training of MDL employees enabling the construction of the INS Shalki and the INS Shalkul at the MDL dockyard in Mumbai.

These were the first submarines ever to be built in India. The Shishumar class is based on the renowned HDW Class 209, however, it includes a series of specialties including a larger diameter of the pressure hull.

https://www.defenceaviationpost.com/2020/03/thyssenkrupp-marine-systems-and-mdl-win-service-contract-for-overhaul-of-indian-navy-submarine/

THE NATIONAL INTEREST

Thu, 26 March 2020

Meet India's T-90M Bhishma tank: Russian tech, Indian made

A good combo?

By Caleb Larson

India's foray into more advanced Russian tank design focuses on tailoring a Russian design to Indian requirements and a simple, domestically manufactured parts-acquisition process. Improvement in armor and targeting give the Bhishma an edge.

From Russia…

Back in the early 2000s, India bought several hundred T-90 tanks from Russia and has since grown a formidable collection of actually quite capable armor.

The Russian T-90s, while quite capable on their own, (actually just plain tough) were a strategic decision for India. India fields a fairly extensive fleet of domestically build T-72s. These T-72s shares a number of components in common with the T-90 platform (possibly as high as 60%), which would, in theory, simplify logistics and repairs.

India's T-90M Bhishma — named after a character in Mahabharata epic— sports French-built thermal sights, and Russian Kotakt-5 explosive reactive armor (ERA). Its turret also has domestically developed composite armor, a mixture of ceramic and other laminates, which may offer better protection than the stock T-90S, the Russian export model.

Although India fields a domestically designed and manufactured tank, the Arjun, the platform has been set back by production delays, which spurred purchases of the T-90.

…With Love

There are advantages to the T-90 platform, domestically produced or not.

One of the T-90 variants, the T-90MS is reportedly ideal for the cold, harsh conditions of Ladakh, Sikkim, and Arunachal Pradesh in far north and eastern regions. In contrast, the native Arjun thrives on India's plains, which can be extremely hot, and was reportedly a challenge for the T-90s, presumably due to overheating.

The Indian-built T-90s are also reportedly less reliable than their Russian-produced counterparts, perhaps one of the factors that contributed to their problematic record on India's plains.

Domestic Priorities…

Most recently, the Indian Ministry of Defense awarded a contract worth 2.8 billion U.S. dollars to a domestic manufacturer to build 464 license-built T90S tanks for the Indian Army.

Domestic production of a signature goal of India's defense industry, which despite importing much foreign tech, strives for at least domestic assembly, if not complete home-grown manufacturing.

…With a Russian Twist

Still, Russian-derived technology is heavily integrated into India's armored corps. An expert with The Diplomat reported that "Russia delivered the first T-90S MBTs to India in January 2004. There are currently around 1,000-1,100 T-90 MBTs of both the MS and Bhishma S variants in service, although the operational readiness rate of the tanks remains unclear. According to one estimate, 850-900 are of the T-90S Bhishma variant. Of the two, the T-90MS MBT is the more advanced design."

There was even speculation in Russian state-owned media channels that India has shown an interest in Russia's newest tank design, the T-14 Armata, either as an import, a domestically-built licensed copy or simply as a model on which to base yet another home-grown tank platform.

If this is more than just a rumor remains to be seen — what is sure is that Russian armor in India's inventories likely won't disappear anytime soon.

https://nationalinterest.org/blog/buzz/meet-indias-t-90m-bhishma-tank-russian-tech-indian-made-136987

DefenceNews

Thu, 26 March 2020

Indian MH-60R helos to be Saudi-standard, plus national mods

The Sikorsky MH-60R Seahawk maritime helicopters ordered by India will be built to the latest Saudi Arabian configuration, with some additional national-specific modifications.

The new initial Indian baseline standard was disclosed on the US government's beta.sam.gov website on 24 March, in which it was noted that the 24 helicopters recently ordered by the Indian government will be built to the same configuration as the 10 helicopters received by the Royal Saudi Naval Forces (RSNF), with some "unique modifications" also included.

The RSNF MH-60Rs that were delivered from September 2018 are of a similar anti-surface vessel warfare (ASuW) and anti-submarine warfare (ASW) standard to the latest helicopters flying with the US Navy (USN), including AN/AAS-44C(V) multi-spectral targeting systems, AN/AVS-9 night-vision goggles, AN/SSQ-36/53/62 sonobuoys, Raytheon MK 54 torpedoes, and crew-served weapons.

The RNSF standard that will form the baseline configuration for the Indian Navy (IN) adds the Lockheed Martin AGM-114R Hellfire II air-to-surface missile and BAE Systems Advanced Precision Kill Weapon System (APKWS) which, while integrated by the USN, are not typically carried.

While the sole-source contract notification did not provide details of the Indian national-specific modifications, Jane's previously reported that the IN is to fit its MH-60R helicopters with the Kongsberg Naval Strike Missile (becoming the first country to fit any helicopter with the anti-ship missile). Other national modifications will likely comprise communications and other such equipment.

https://www.defencenews.in/article/Indian-MH-60R-helos-to-be-Saudi-standard,-plus-national-mods-809895

DEFENCE AVIATION POST
Your Connect To The World Of Defence And Aviation

Thu, 26 March 2020

F-15EX vs. Su-35: Why India would choose the Russian Flanker over the new American Eagle for its MMRCA contract

Following an order by the United States Air Force for the first F-15EX heavyweight '4+ generation' fighters, while are slated to replace the ageing F-15C Eagles in frontline service and partly compensate for the very limited availability of fifth generation F-22 Raptors designed for a similar role, the Boeing company which developed the aircraft has sought to market them to India under the MMRCA tender.

The aircraft will compete with the medium weight F-18E Block III Super Hornet, the lightweight F-21 derived from the F-16E Fighting Falcon and a range of foreign jets including three European designs and the Russian medium weight MiG-35 and heavyweight Su-35 '4++ generation' fighters.

While the MMRCA initially stipulated that fighters should be of a light-medium weight, and at first restricted the competition exclusively to single engine aircraft, the Su-35 and F-15X stand out as the only two high end heavyweight aircraft in the competition. The aircraft both represent extensive modernisations of Cold War era designs – the Soviet Su-27 and American F-15C respectively which were both countries' prime air superiority fighters during the conflict.

With the competition bringing both jets head to head, an assessment of how the two designs compare against one another has considerable implications for the future of both fighter programs as well as that of the Indian Air Force.

Both the F-15EX and the Su-35 are twin engine designs capable of operating at high altitudes, and both have the long ranges needed to penetrate enemy airspace and deliver a wide range of standoff munitions for both air to air and air to ground missions.

The F-15 does have the advantage of a higher speed however, able to reach Mach 2.5 where the Su-35 is restricted to speeds of around Mach 2.25.

https://www.defenceaviationpost.com/2020/03/f-15ex-vs-su-35-why-india-would-choose-the-russian-flanker-over-the-new-american-eagle-for-its-mmrca-contract/

eurasiareview news & analysis

Thu, 26 March 2020

US sale of iadws to India at the cost of regional peace – OpEd

By Hananah Zarrar

It is undeniable that South Asia cannot afford another weaponry race among nations in the wake of recent frictional events between India and Pakistan under continued aggression of present Indian regime. After S-400 deal, India is moving towards the acquisition of multi-layered missile defence system. Pakistan's Foreign Office has rightly expressed concerns over United States' recent approval of Integrated Air Defence Weapon System IADWS sale to India. Surely such a deal would fuel the offensive posturing of India and is likely to disturb the strategic balance in South Asia, precisely putting Pakistan into another security dilemma. Additionally, the regional dynamics

do not allow any offensive state to continue with acquisition of latest weaponry and bringing an asymmetry to already volatile region.

The proposed Integrated Air Defence Weapon System IADWS with an estimated cost of US $1.87 billion, is currently deployed around the Washington DC. It comprises of launchers, targeting and guidance systems, advanced medium-range air-to-air missile (AMRAAM) and Stinger missiles (shoulder-fired Man-Portable Air Defense System, which is relatively effective, lightweight, reusable launcher), 3D Sentinel radars, fire-distribution centers and command-and-control units. IADWS is the advanced form of National Advanced Surface to Air Missile System (NASAMS-II).

According to Delhi's Air Defence Plan, the national capital is set to get a multi layered missile defence system similar to that of Washington. The NASAMS will form the innermost layer of the protection of Delhi, as per the proposed overall air defence plan of the national capital. The layer over the NASAMS will be formed by indigenous Aakash defence missile system with a 25-km range. The Russian S-400 systems, scheduled for delivery in the October 2020-April 2023 timeframe, will provide the second layer of protection. These are the highly automated and mobile S-400 systems, which will have missiles with interception ranges of 120, 200, 250 and 380 kms, backed by their associated battle-management system. It is followed by Barak-8 medium range surface-to-air missile systems, jointly developed by Israeli Aerospace Industries and Defence Research Development Organization (DRDO). The indigenous two-tier ballistic missile defence (BMD), comprising of advance air defence (AAD) and Prithvi air defence (PAD) interceptor missiles, system being developed by DRDO will be the outermost layer of Delhi's missile shield.

Sale of such sophisticated weapon system to India carries serious implications for Pakistan and will bring repercussions for the whole region. Beside cross border conventional and sub-conventional attacks lately, Indian political and military leadership has repeatedly threatened Pakistan with an intent to be more aggressive in the strategic and cyber domains. Acquisition of IADWS signals the future intensity of airspace violation by India as was done in the recent past (Balakot airstrikes). Pakistan's foreign office also expressed its concern and warned the international community of possible false flag operation by India to divert attention from its real-time state-sponsored terrorism.

Rather than ensuring peace and stability, the air defence weapon system sale to India shows US' unwillingness to keep the regional equilibrium intact. In complete disregard to this concern, both the US and India obstinately proclaim that the latter one intends using such defense articles and services to modernize its armed forces, and to expand its existing air defense architecture to counter threats posed by air attack. Nonetheless, it will strengthen the US-India strategic partnership. In other words, despite Indian government's blatant aggression and adventurism, the US stands unconvinced of India's potential to drag the region into a confrontational future. Furthermore, the major powers' continued defense support to India indicates deliberate neglect of regional peace. With enhanced air defense capability, firstly India puts Pakistan under pressure of acquiring equitable technology. Secondly, with such advancement India is likely to become more belligerent towards its rival states which would increase the chances of warfighting that could eventually cross the threshold.

To prevent further destabilization of the region, Pakistan proposed a discussion on a strategic restraint regime for South Asia which includes the proposal to avoid the induction of weapons contributing towards lowering of nuclear threshold. With normalizing strategy and prompt resolve, Pakistan has responsibly prevented an escalation in the region despite Indian provocations. It is now international community's responsibility to carry out an in-depth analysis of regional dynamics and trace frictional events between the two nuclear weapon states. Furthermore, major powers with their rational and responsible approach must ensure regional stability via unbiased and stabilizing initiatives which would encourage both parties to avoid escalation.

(*The author is a Research Associate at the Strategic Vision Institute (SVI), a non-partisan think tank based out of Islamabad, Pakistan)*

https://www.eurasiareview.com/25032020-us-sale-of-iadws-to-india-at-the-cost-of-regional-peace-oped/

KashmirWatch

Thu, 26 March 2020

The way to survive

By Ali Sukhanver

The Indian Air Force has recently commissioned the '222 Tiger Sharks Squad' of Sukhoi Su-30 MKI fighter jets in Thanjavur, Tamil Nadu: say various media reports. The Sukhoi Su-30MKI is a twin-jet multi-role air superiority fighter, developed by Russia and built under license by Hindustan Aeronautics Limited (HAL) for the Indian Air Force. It is a heavy, long-range all-weather fighter equipped with the supersonic BrahMos cruise missiles that have a range of over 300 km. A very high-profiled ceremony was arranged at the occasion which was attended by the Chief of Defence Staff Gen. Bipin Rawat and Air Chief Marshal Rakesh Bhadauria. This extraordinary military-move is being taken as a serious message to China whose entry in the Indian Ocean region is continuously and significantly altering regional dynamics. This entry is being observed through economic investments and military presence along the Maritime Silk Road; no doubt resulting in China's increasing political influence too in the region.

China has been very successful in deepening its ties with the regional states particularly with Pakistan, Bangladesh, Myanmar, and Sri Lanka in the last many years. These ties are specifically in the shape of the influx of Chinese capital into construction projects. According to a media report somewhere in the mid of 2019, during her visit to China, the Bangladeshi Prime Minister Sheikh Hasina signed nine different types of accords covering a range of sectors including power, culture, tourism, and technology. A Letter of Exchange was also signed under which China would provide Bangladesh with 2,500 metric tons of rice as aid for Rohingya refugees. She was promised that China would provide an extension of loans worth $1.7 billion for Bangladesh's power sector. Reports say that during that visit, Beijing also assured Dhaka that it would better align its projects under the Belt and Road Initiative (BRI) with Bangladesh's development priorities. The same is the case with Sri Lanka; China has invested a lot in different development projects in Sri Lanka too; these projects include Colombo International Financial City, Colombo International Container Terminals and Hambantota Port. At a private and personal level, Chinese investors are investing a lot in the field of, agricultural product processing, manufacturing, warehouse and logistics and hotel construction.

Once Burma now Myanmar is a country situated in Southeast Asia and is bordered on the north and north-east by China. The two countries are having a very close diplomatic relationship since June 8, 1950, when a treaty of friendship and mutual non-aggression was signed between them. This January, Chinese President Xi Jinping had been on a two-day state visit to Myanmar where he signed more than 33 different agreements with the Myanmar government in the fields of information, industry, agriculture, security and the resettlement of internally displaced people in Myanmar's war-torn Kachin State, which borders China. During President Xi Jinping's visit, the most emphasized topic had been Kyaukphyu Special Economic Zone on the Bay of Bengal which is the terminus of the 1,700 kilometer-long China-Myanmar Economic Corridor. Experts say that it is a major link in Beijing's Belt and Road Initiative whose other end is in China's Yunnan province.

Last but not the least comes Pakistan; a country with the decades-old trusted friendship with China. From the making of JF-17-Thunder Aircraft to the marvelous CPEC; the tale of love and care between the two countries is never-ending. Recently a Pakistani doctor who volunteered to treat coronavirus patients in China's Wuhan epidemic area got warm official as well as public appreciation and admiration for his services to the corona-infected patients. Dr. Usman is a Pakistani medical teacher at Changsha Medical College and he is the first foreign doctor who stepped forward to treat infected people in Wuhan as a volunteer.

In short, this whole scenario is not very much favourable for countries like the US and India. These countries are frightened of China's increasing influence in the region and are sure that in

near future, China would emerge to the surface as an undefeatable World Super-Power with the support of its Allied countries like Pakistan, Bangladesh, Myanmar and Sri Lanka. In this whole strategic game, the Indian Ocean might be the playground. The point to be kept in mind is that the Myanmar corridor provides China with a shortcut to the Indian Ocean. 'The Star' said commenting upon the situation, "An outlet to the Indian Ocean allows China's sizable oil and gas imports from the Persian Gulf to bypass going through the Strait of Malacca, and could conceivably serve a future military purpose". It must also be kept in mind that the US and India are very well aware of the fact that China is going to be a very serious threat to their combined interests in the region and that is the reason that India has recently deployed the '222 Tiger Sharks Squad' of Sukhoi Su-30 MKI fighter jets in Thanjavur, Tamil Nadu just 65 miles from the international maritime boundary between India and Sri Lanka. Let us see what way China responds to this military action. From the stratagem of countering the Corona-virus to the strategy of combating different regional military threats, we have a lot to learn from China.

http://kashmirwatch.com/the-way-to-survive/

ORF OBSERVER RESEARCH FOUNDATION
Ideas · Forums · Leadership · Impact

Thu, 26 March 2020

India-Pakistan dynamics after Balakot: A different deterrence equation?

Even before coming to office in 2014, Prime Minister Narendra Modi had implied that his government would address Pakistan-sponsored terrorism differently

By Rajeswari Pillai Rajagopalan

India has been battling crossborder terrorism with no clear success for more than three decades. Fear of possible nuclear escalation by Pakistan has traditionally restricted successive Indian governments in responding to such attacks, a fear which became particularly acute after India and Pakistan went openly nuclear in 1998. However, the Indian airstrike on a terrorist camp in Balakot within Pakistan in February 2019, in response to a terrorist attack by Pakistan-based terror group Jaish-e-Muhammad that killed nearly 40 Indian troops, is indicative of a possible change in Indian thinking. It remains unclear if this was a one-off response driven by domestic audience pressures or a broader shift in strategy. But if it is a change in strategy, New Delhi needs to be better prepared for escalation in the future than it as yet appears to be.

Even before coming to office in 2014, Prime Minister Narendra Modi had implied that his government would address Pakistan-sponsored terrorism differently. The first instance of this difference as reflected in action was in 2016 when the Indian government carried out retaliatory strikes across the Line of Control (LoC) in response to a terrorist attack on an Indian Army camp at Uri in Indian-administered Kashmir that killed 19 Indian soldiers. While reports suggest that such retaliatory strikes took place in the past as well, this was different. This time around, the Indian government chose to publicise these strikes, calling them "surgical strikes." In the past, even when limited strikes were undertaken across the LoC, it was not advertised for fear that there could be tit-for-tat retaliation that could spiral into a full-fledged conflict, possibly escalating to a nuclear exchange between the two countries. This fear of escalation has for long had a significant influence on Indian decisionmakers. India likely did not respond to major terrorist attacks, be it the terrorist attack on the Indian Parliament in 2001 or the Mumbai terrorist attack in 2008, because of this fear. Therefore, the decision to take credit for the 2016 surgical strikes possibly indicated new Indian thinking on escalation and deterrence in the India-Pakistan context.

"The fear of escalation has for long had a significant influence on Indian decisionmakers."

The Modi government's new approach was not only different from that of the previous government but seemed to hark back to earlier thinking articulated by both then-Indian Army Chief General V.P. Malik and then-Indian Defence Minister George Fernandes in the aftermath of the Kargil war. Both had argued, presumably based on the intense, weeks-long war that India successfully prosecuted, that there was sufficient space for a conventional war under the nuclear umbrella and that India need not worry about nuclear escalation.

This strategy of limited airstrikes appeared to have worked in Balakot as well. Likely bolstered by the limited reaction from Pakistan to the surgical strike in 2016, the Modi government decided to escalate in 2019 by striking a terrorist camp inside Pakistan in response to the Pulwama attack. Despite repeated previous statements threatening nuclear escalation, Pakistan's response stayed at the conventional level. Even at the conventional level, Pakistan's response was arguably neither escalatory nor proportionate because no Indian facility was hit. Moreover, the Indian pilot whose plane was shotdown by Pakistan in an aerial dogfight was returned without any concessions even being demanded from New Delhi.

Pakistan's limited, conventional response suggests a few conclusions about the current state of deterrence between India and Pakistan. One, Pakistan's strategy of using the fear of escalation, including the threat of use of nuclear weapons, has lost its value. India has disproven Pakistan's claims and called the nuclear bluff twice now. Second, there are clear implications in terms of international involvement. Pakistan's "catalytic" strategy, as Vipin Narang calls it, to get foreign powers involved in an India-Pakistan conflict may have run its course.

"Throughout the 2000s, Pakistan's dubious role in the global war on terror and in Afghanistan was a cause for concern to the United States and others, which led to Pakistan losing the sympathy it may have previously enjoyed."

In fact, Pakistan's catalytic strategy has boomeranged on it a couple of different times. During the Kargil War in 1999, Pakistan invited foreign involvement, assuming it would be in its favour. But even though the United States got involved, it was in support of India. Pakistan had not understood that international circumstances had changed — Cold War politics in South Asia and the Afghan conflict in the 1980s may have previously factored into US support for Pakistan, but that was no longer true. Moreover, Pakistan's role in the Kargil conflict was also very blatant — it was clear to the United States and the global community that it was a Pakistan Army operation. The Pakistani intelligence's role in the 2008 Mumbai terror attacks was also evident. In fact, throughout the 2000s, Pakistan's dubious role in the global war on terror and in Afghanistan was a cause for concern to the United States and others, which led to Pakistan losing the sympathy it may have previously enjoyed. Pakistan's own overreach in supporting crossborder terrorism has eroded consideration for its point of view on Kashmir.

Meanwhile, the changing balance of power in the Indo-Pacific has benefited New Delhi. India has become more important for the United States and other Indo-Pacific powers, and it has developed closer strategic partnerships with them in the context of China' rise and growing aggressiveness in the region. India's role as a balancer and Pakistan's close alignment with China are among the reasons why many countries in the region are unlikely to side with Pakistan in an India-Pakistan conflict.

India has also become important because of its growing economic clout. The size of the Indian economy is almost USD 3 trillion, and it is one of the largest economies globally (especially in purchasing power parity terms). On the other hand, Pakistan's economy at slightly over USD 300 billion is only about a tenth of India's, with the gap between the two seemingly widening every year. Thus, comparing the two economically is a meaningless exercise. And though India's growth rate has slowed down a bit recently, it is still estimated to be one of the growth engines in the Indo-Pacific in the future.

"India's current domestic troubles could make it a less attractive strategic partner for many countries. The changes that India is making to its citizenship laws under the Citizenship Amendment Act and the proposed National Register of Citizens have been interpreted both inside

and outside the country as targeting Indian minorities, deeply damaging India's reputation as a liberal, secular democracy."

However, India's current domestic troubles could make it a less attractive strategic partner for many countries. The changes that India is making to its citizenship laws under the Citizenship Amendment Act and the proposed National Register of Citizens have been interpreted both inside and outside the country as targeting Indian minorities, deeply damaging India's reputation as a liberal, secular democracy. Though nominally a separate issue, this may weaken India's position on Kashmir because external actors could become less sympathetic to New Delhi if it is seen as persecuting minorities at home.

On the deterrence front too, India has work to do. While it is true that India has reestablished a certain amount of deterrence in the India-Pakistan context, its declining defence budget and the resultant capacity deficit could produce outcomes that are unfavorable, at least in the initial stages of any escalation. In fact, if the Balakot strikes had led to escalation beyond Pakistan's limited response, India's costs could have gone up considerably and unnecessarily. This could mean that India would bear greater costs the next time around unless its military preparations improve and domestic troubles are dealt with.

https://www.orfonline.org/research/india-pakistan-dynamics-balakot-different-deterrence-equation-63691/

THE NATIONAL INTEREST

Thu, 26 March 2020

Russia's MiG-29 had too many problems to be a good fighter jet

The MiG-29 began development in 1974, intended to be an advanced lightweight multirole fighter that would operate from primitive airfields at the frontlines of the Cold War

By Sabastien Roblin

Key point: There are numerous Fulcrum variants tailored to the requirements of various air forces.

The MiG-29 Fulcrum was the first Russian fourth-generation jet fighter, marked by its sleek and deadly appearance in contrast to earlier Soviet fighters. The fast and agile Fulcrum could outturn any NATO fighter, and it was armed with cutting-edge missiles. But, alas, it was held back by its old-fashioned electronics, short service life and limited range.

In a sense, the MiG-29 combined fourth generation engineering with third generation hardware. It's relatively low price meant it initially attracted extensive sales to developing countries, but it would swiftly become overshadowed by the more modern Su-27. The Fulcrum will remain in service for some time, however, as recent upgraded versions partially redress some of its shortcomings.

Characteristics

The MiG-29 began development in 1974, intended to be an advanced lightweight multirole fighter that would operate from primitive airfields at the frontlines of the Cold War, while smaller numbers of heavier Su-27s (also then in development) would handle longer-range missions. This paralleled the light–heavy force structure of F-16s and F-15s being developed for the U.S. Air Force.

The first MiG-29s became operational in 1982 and were codenamed "Fulcrums" by NATO—a name which caught on with some Russian pilots as well. The Fulcrum had a fearsome reputation in the West, and even got its own computer game. By the 1990s, Western pilots had ample opportunity to fly MiG-29s as the German Air Force incorporated the MiG-29s of East Germany. Later, the United States even bought twenty-one from Moldova.

It was discovered that the Fulcrums *were* very hot rides—but they also had significant downsides.

The MiG-29's twin RD-33 turbofan engines gave it excellent acceleration and a top speed of Mach 2.25—faster than the F-16 but a bit behind the larger F-15. The MiG-29's chief claim to fame is its superb maneuverability—it can even outperform the light-footed F-16 in both instantaneous and sustained turns (twenty-eight degree per second versus twenty-six). NATO pilots that practiced against the German Air Force Fulcrums serving in JG 73 found that in short-range dogfights at low speeds the MiG-29 was more agile than anything they threw at it.

Like the Su-27, the MiG-29 is *supermaneuverable*—it can execute maneuvers impossible with regular aerodynamic controls because of its excellent handling characteristics following a stall. It can also attain very high angles of attack.

One other advantage of the MiG-29 was the short-range R-73 (NATO codename AA-11 Arrow) infrared-guided missile that could be aimed and fired through a helmet-mounted sight. Normally, a plane has to be pointed at an enemy fighter to target it—with the R-73, the pilot need only *look* at a target within sixty degrees of the frontal arc to shoot a missile at it! The U.S. Air Force did not acquire a similar capability until the AIM-9X entered service in 2003.

In addition to the R-73, the Fulcrum's seven hardpoints can equip R-27 medium-range missiles, and older R-60 missiles. Some have also been upgraded to fire R-77 long-range air-to-air missiles. Up to eight thousand pounds of air-to-ground munitions can be carried—a significantly lighter load than peer fighter aircraft.

Finally, the MiG-29 is designed to function while operating from unprepared airstrips (presumably captured by advancing Russian tank divisions!)—its air intakes are specially protected against debris.

However, intrinsic design limitations of the MiG-29 have prevented it from aging well.

While aerodynamically outstanding, the MiG-29 did *not* feature modern pilot displays, controls and fly-by-wire avionics. Fulcrum pilots were required to stare down at their cockpit instruments far more than those of Western fighters with modern Head's Up Displays, and the throttle was not integrated into the stick.

The MiG-29's sensors were mediocre—its N019 Phazotron pulse-doppler radar had a shorter accurate range (thirty-eight miles) than the missiles the MiG-29 carried. Though equipped with an infrared sensor (IRST), pilots reported it to be of limited effectiveness.

These limitations in part reflected Soviet doctrine in which pilots were intended to be closely directed by ground controllers, so their situation awareness was less of a priority. The lack of modern electronics was what ultimately led the German Air Force to retire its Fulcrums, despite being more agile than their F-4s and Tornados.

Another major limitation is the MiG-29's limited range of less than nine hundred miles on internal fuel and lack of inflight refueling ability—making it primarily useful as a defensive fighter, or one operating above frontline forces. While the Fulcrum may be a bargain for a less wealthy country worried about conflict on its borders, it has less appeal to air forces looking to project power over distance.

Finally, like most Soviet-era fighters, while the MiG was designed to withstand rugged handling, it *wasn't* intended to have a long service life—just two thousand five hundred hours compared to the six thousand that is typical of U.S. fighters. MiG-29 airframes deteriorated rapidly later in life, and have required extensive and expensive maintenance to keep flying. Malaysia once reported it spent $5 million per year per MiG-29 to keep them flyable.

Variants

1,600 MiG-29s have been produced in all. Originally, the Fulcrum came in just a few variants: the standard single seat model and a two-seat trainer variant (MiG-29UB) without the radar. A downgraded version, the MiG-29B was exported abroad.

In the 1980s the upgraded MiG-29S appeared, featuring an active jamming system behind the cockpit (giving it a hunched back appearance), improved computers and software and modestly increased fuel and weapons load. Support for new R-27E and R-77 missiles was added.

In 1990, the next-generation MiG-29M (once known as the MiG-33) debuted, bringing the Fulcrum up to modern standards with fly-by-wire avionics. With a lighter airframe and more powerful smokeless engines (for lower visibility), the MiG-29M nonetheless appears to be slower (Mach 2 at high altitude) and has a lower service ceiling of fifty thousand feet, perhaps because its weighs an extra 1.25 tons. Internal fuel has been expanded for an improved range of over one thousand two hundred miles, a third drop tank can be carried, an inflight refueling probe is included. Two hardpoints are added, and the maximum payload is increased over 50 percent to twelve thousand pounds. Rounding out the package is an improved IRST system and an N010 Zhuk-ME pulse-doppler radar with a range of seventy-five miles against targets with a radar cross-section of five meters.

The MiG-29M was not accepted into Russian service, but it is believed Egypt will receive fifty later this year in a $2 billion contract ($40 million each). Sales to Syria and Serbia are also possible.

The Russian and Indian air forces have instead opted to use older Fulcrum airframes refitted to the MiG-29M's standards, called the MiG-29SMT or the MiG-29UPG in Indian service. The SMT and UPG Fulcrums have their service life extended to four thousand hours, but weapons loads are not quite equal to the MiG-29M's specifications. India's upgrades cost roughly $13 million per airframe, and include foreign avionics.

In 2008, Algeria rejected a batch of thirty-four SMTs as they used old airframes in poor condition rather than newly produced ones stipulated in the contract. The rejected airframes were then put into Russian service and sixteen new ones were ordered. Russia intends to maintain a fleet of sixty MiG-29SMTs.

There are numerous Fulcrum variants tailored to the requirements of various air forces. The most notable is the MiG-29K, a navalized derivative of the MiG-29M operated both by the Russian Navy onboard the carrier *Admiral Kuznetsov*, and the Indian Naval Air Arm. The MiG-29K has folding wings, reinforced landing gear and an arrestor hook for carrier operations. The K also has upgraded pilot displays and radar-absorbent coatings to reduce its radar signature.

The (Painful) Track Record

Few fighter planes have managed to be so beloved and yet boast such an unfavorable combat record as the MiG-29. Of course, this is in large part because the Fulcrum was usually fielded by less developed countries against Western opponents that were more numerous, better trained, and better organized.

Setting the tune of things to come, in the Fulcrum's first confirmed aerial combat, two Syrian MiG-29 were shot down by Israeli F-15s in 1989. There are reports Israeli fighters shot down another two Syrian MiG-29s in 2001.

During the Gulf War, five Iraqi MiG-29s were shot down by American F-15s. However, a Fulcrum did successfully hit an F-111 and a B-52 bomber with missiles, though both aircraft managed to return to base.

Fulcrums also took a beating in the Ethiopian–Eritrean border conflict of the late 1990s, which featured more evenly matched opponents. Russian mercenaries flew alongside Ethiopian pilots, while Ukrainians supported the Eritrean Air Force. In all, four Eritrean MiG-29s were shot down by Ethiopian Su-27s. In exchange, the Eritrean Fulcrums shot down a Su-25, a MiG-21 and an unidentified fighter (possibly a MiG-23). Over multiple engagements, Flankers and Fulcrums exchanged over two-dozen R-27 missiles at long range for only a single hit. Instead, most of the victories were scored in short-range dogfights using AA-11 missiles.

Sixteen MiG-29s of the Serbian Air Force opposed NATO's bombing campaign over Kosovo in 1999. Deployed at medium altitude, where they were exposed to hostile radar, five were shot down by F-15s and F-16s without scoring any victories in return.

MiG-29s have also performed ground attack missions in the former Yugoslavia, Moldova, South Sudan, Sudan and Ukraine.

Russian Fulcrums have been involved in a few incidents over the years. In 1989, Soviet defector Alexander Zuyev absconded with a MiG-29 and flew it to Turkey in an incident involving a cake full of sleeping pills, a shootout with a security guard and a failed strafing run. A MiG shot down a Georgian drone in 2008 in an incident preceding the Georgian–Russian war. Ukraine claims a Fulcrum shot down a Ukrainian Su-25 over Eastern Ukraine in 2014.

Major Operators

Unlike the Su-27, the MiG-29 would see extensive service in NATO air forces after the end of the Cold War. While most have been retired, Poland retains a fleet of thirty-eight MiG-29s, and Bulgaria and Slovakia have nineteen and six respectively.

India has over 110 upgraded Fulcrums, including forty-five MiG-29Ks in the Naval Air Arm. Other notable operators include Algeria (26), Iran (25), Belarus (41), Kazakhstan (40), Myanmar (31), Peru (19), North Korea (35), Turkmenistan (24), and Uzbekistan (60).

MiG-29s are being actively used in combat in Ukraine—there were eighty *before* hostilities in 2014, but two have been shot down by rebel surface-to-air missiles—and Syria. Syria is believed to have fifteen to twenty operational MiG-29SMs upgraded by Russia with launch rails for deadly R-77 air-to-air missiles. Yemen's nineteen or so MiG-29s were used in its counterinsurgency campaign, but have fallen into the hands of Houthi rebels and don't appear to have flown since. Sudan's twelve MiG-29s have been involved in raids against rebels in Darfur and the new state of South Sudan in 2012.

A two-seat Fulcrum with further modernized systems, the MiG-35, represents the Mikoyan firm's latest bid to return to prominence in military aviation.

https://nationalinterest.org/blog/buzz/russias-mig-29-had-too-many-problems-be-good-fighter-jet-137382