

# The Game Changer

MiG-29K multirole fighter will give unprecedented capabilities to the Indian Navy

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LIKE THE INDIAN ARMY, THE INDIAN Navy, especially after 26/11 has an important peacetime role which requires, to say the least, capability for round the clock surveillance over a huge Oceanic space of 73.6 million kilometres. In addition, the navy, after the launch of the S-2 vessel (indigenous nuclear powered submarine) has the additional deterrence role, which given India's declared no-first-use nuclear weapons policy is critical, as the undersea vector is more survivable than aircraft and ballistic missile vectors. Given the PLA Navy's SSN and SSBN capabilities, and now with reports coming in that the Pakistan Navy is acquiring Chinese 5,500ton type 091 Hans class nuclear powered attack submarine, the Indian Navy's deterrent, at its present level, does not amount to much. Since the government is silent on the progress of the S-2 and the follow-on vessels, one is compelled to pick up rumours which suggest that technological, materials and management challenges have hamstrung desired results.

Given this situation, one would have hoped that like his two predecessors, the

CNS, through the dedicated media, would periodically inform the nation on how taxpayers' money was being spent to build conventional naval capabilities. The annual traditional media interaction before the Navy Day on December 4 is woefully inadequate. As the top operational commander in the full knowledge of existing capabilities, he is best placed to explain challenges facing his service for peacetime and possible wartime roles. Considering that India's land borders are disputed, and it can only seek a strategic role beyond its geographical confines in the Indian Ocean Region, for which major friendly powers including the US have sought maritime cooperation with us, the CNS' silence is counterproductive as speculations abound. It could be argued that talking to the media may create unnecessary controver-

sy. But is it not a risk that a navy chief, in the larger interest of his service, should be prepared to take? Except for the CNS, no naval officer has the wholesome knowledge or authority to speak on the service. So the update that FORCE is giving here has been collated from various (informed) sources and a visit to the biggest naval station, INS Hansa in Goa.

The Revolution in Military Affairs for the navy, which refers to speed in the tempo of operations, implies three technological competencies: battlespace awareness (Maritime Domain Awareness) to include Intelligence, Surveillance and Reconnaissance (ISR); advanced Command, Control, Com-





munications, Computers, and Interoperability (C4I); and precision force use (precision guided munitions). In war, the navy will be required to both fight battles at sea as well as contribute to land battles. With the arrival of MiG-29K multi-role carrier aircraft at INS Hansa, the choices for the navy to contribute to land battles have increased. Once the whole MiG-29K complement is in place atop the 44,570 ton INS Vikramaditya (erstwhile Admiral Gorshkov), and on the 37,500ton Indigenous Aircraft Carrier (new INS Vikrant) expected to join service by 2015, the navy will be in a position to complement the Indian Air Force, especially in a two-front hostili-

ties situation. The MiG-29K, built specifically for the Indian Navy, is unlike the MiG-29 air superiority aircraft with the Indian Air Force. It is two-and-half times heavier, with full automation, digital fly-by-wire, common Mil Bus to integrate non-Russian weapons of western origin, four weapon stations under each wing, and can do air-to-air and buddy refuelling. "MiG-29K has the capability to be pitched back into the battle," is how an admiral put it, implying its multi-role capability to switch between air-to-air, air-to-sea, and air-to-land missions. This clearly gives three earlier unavailable operational advantages to navy planners. One, the MiG-29K can

**MULTI-ROLE CAPABILITY** Cdr A.D. Theophilus (centre) with other MiG-29K pilots at INS Hansa

undertake deep penetration strikes on land while ensuring that the carrier stays beyond the radius of the enemy's shore-based strikes. Two, the MiG-29K weapon load carrying capacity equals that of Su-30MKI. And three, it has excellent endurance being able to spend two-and-half times more on task than any other aircraft (Sea Harrier) with the Indian Navy. Given these benefits, the MiG-29K unit at INS Hansa is the envy of the station.

At present, there are six MiG-29K air-



## 'INS Hansa is one of the contenders for Advanced Jet Trainer Hawks'

— Commanding Officer, INS Hansa, Cmde Ravneet Singh NM

***What new assets have come up at INS Hansa and what more do you expect to come in the next five years?***

The major induction has been of MiG-29K in January 2010. We are expecting a total of 45 aircraft to come here in the next few years. In addition to that, we have been building a lot of infrastructure, including a testing facility for LCA Navy called the Shore-based Testing Facility (SBTF) comprising a telemetry building and a ski jump to replicate the ship. Also, part of it will be a 12-metre strip with arrestor gear so that both MiG-29K and LCA can practice arrested landing. In addition to this, we expect LCA Navy, when it is inducted, to come to INS Hansa, as will some of the P-8Is when they are inducted into the navy. Moreover, Indian Navy has contracted for 17 Advanced Jet Trainer Hawks. While it is yet to be decided where they will be based, Goa is one of contenders.

***How does the Maritime Domain Awareness envelope going to look like 10 years from now?***

The Indian Navy is in the process of creating a National Maritime Domain Awareness grid which will comprise surface-based sensors and air assets as also information coming from our civilian counterparts like the customs, the marine police, DG Shipping and so on. All this information will then be collated in one place for a complete picture.

***In terms of assets, which platforms will look after what range and where? For instance, where will the Dorniers fit?***

Each platform will have a different role. Dorniers have limited endurance and hence range. But the Il-38SDs not only have a longer range, they are also potent Anti Submarine Warfare platforms. Patrolling will only be one part of their role. Similarly, P-8Is will be able to cover a much wider area of surveillance.

***What about Tu-142?***

I think they will be phased out once the P-8Is come into service.

***INS Hansa is one of the biggest naval air bases with the majority of naval air assets. Given this, what are your responsibilities and what are your challenges?***

The number of people who work here comprise almost five per cent of the navy's strength. In addition to this, the civil flights that operate from Goa are also our responsibility as both the runway and the ATC are run by the navy. My charter of responsibility involves ensuring smooth functioning of all these operations, providing them administrative and logistics support, so that they can continue with flight operations. To look after the air operations part I have Captain Air and an Executive Officer for administration who ensure discipline and security among other things.

***If you were to have a wish-list of things to optimise your assets what would that be?***

I would make a list of high-quality, labour-saving devices and high end security systems. ||

# 'By the middle of next year, we expect all the 16 MiG-29K to be here'

— OC, Intensive Flying, Trial and Testing Unit (MiG-29K), Cdr A.D. Theophilus

## ***What are the capabilities of MiG-29K that you will be exploiting here?***

We needed an aircraft that could perform air to air, air to sea (anti-ship) and to some extent, air-to-ground roles. MiG-29K has been designed to perform all these three roles and has given us the capability to perform in all the three dimensions. Moreover, as it is a bigger aircraft with the state of the art equipment, it gives us greater accuracy.

## ***What were the navy's requirements given to the Russians for the development of this aircraft?***

We wanted a completely multi-role fighter that could operate from the aircraft carrier. It had to be big enough to travel far and small enough to fit on the carrier. Though it is bigger than MiG-29B that the IAF operates, it has folding wings, which gives it a snug fit on the carrier. They were giving us analog fly-by-wire, but we asked for digital-fly-by wire with a lot of automation. In this respect, they have lived up to what we asked for.

## ***Will you be able to put western origin weapon system on this aircraft?***

The trend in fighters worldwide is to make a common bus which is the supply of the aircraft, since everything is electronically triggered. Hence, if the supply is not common you cannot integrate various weapon systems that are onboard.

For this reason, all over NATO you have a common Mil Bus that runs on the aircraft. The Russians have also created a similar Mil Bus on the aircraft this time. As far as western weapons systems are concerned, it is only a matter of integrating them if we need to.

## ***What is the weapon load that MiG-29K can carry?***

It has four stations on each wing. So, it depends on us, as to how many weapons we want to carry. If we want to carry extra fuel, we carry less weapons, depending upon the role.

## ***How many fighters have you got already and how many more are expected in what time frame?***

India has contracted for MiG-29K in two phases. The first contract was for 16 aircraft followed by another for 29. The delivery of the first phase has

started and we have got six aircraft here. By the middle of next year, we expect all the 16 aircraft to be here.

## ***What is the role of your unit?***

This is an Intensive Flying, Trial and Testing Unit (IFFTU) whose job is to prove the aircraft, both fly-worthiness and role-worthiness. Once that is done, this unit will get commissioned as INAS 303. We are hoping that this should happen in the first quarter of the next year.

## ***What infrastructure will eventually come up for this aircraft?***

Three hangars are coming up, one of which is ready now. Then a simulator complex is getting ready apart from the administrative building. We are also building various store houses for spares, armaments and so on.

## ***Where did the pilot training happen?***

The Navy had initially sent pilots to Russia for training. Subsequently, more pilots are being trained in India. Their ground training is already over and now the flight training is going to commence soon. ||

craft at INS Hansa under what is being called the Intensive Flight Trial and Testing Unit (IFFTU). The IFFTU has a total of 15 pilots (10 trained in Russia and five doing training here). The Officer Commanding, IFFTU told FORCE that even as new pilots are being trained here, the aircraft are being proven simultaneously. As these aircraft have been built exclusively for the Indian Navy, their role-worthiness has to be established. The IFFTU is awaiting the arrival of 'Iron Bird Simulator' for MiG-29K which has been supplied by Germany and is presently in Russia from where it is to be airlifted. Meanwhile, more aircraft of the initial batch of 16 are expected soon (the Russian An-124 aircraft can ferry three MiG-29K at a time). Eventually a total of 45 aircraft (29 MiG-29K have been contracted in second lot) will arrive at INS Hansa where elaborate infrastructural preparations including



**COASTAL SURVEILLANCE** Cdr Sanjay Chauhan and his Dornier pilots



**POTENT AIRCRAFT** Cdr B.K. Yadav (centre) with Ka-31 AEW helicopters and crew at INS Hansa

hangers, administrative blocks and so on are afoot. The MiG-29K unit to be called INAS 303 (Black Panthers) is expected to be commissioned here in the first half 2011. To simulate 'Short Take Off But Arrested Recovery' (STOBAR), work is in full swing on building arrestor wire facilities and the Shore Based Test Facility (SBTF). The SBTF is being built by the Aeronautics Defence Agency of Bangalore for the naval LCA aircraft and will be utilised by the MiG-29K as well. Even as the arrival of INS Vikramaditya has been delayed, the navy is ensuring that MiG-29K uses the SBTF being built for the LCA and benefits from the tactics being developed by the Sea Harrier in its new avatar after Limited Upgrade of Sea Harrier (LUSH) with EL/M 2032 ELTA radars and Derby air-to-air missiles.

Considering that Naval Headquarters had recently issued a RFI for another carrier aircraft, there is speculation if design of the second IAC with Catapult Assisted Take Off But Arrested Recovery (CATOBAR) and weighing 70,000ton has been decided. Responding to the RFI, while Dassault is offering Rafale's naval version, the US Lockheed Martin is understood to have offered its F-35B fifth generation aircraft. A senior knowledgeable admiral told FORCE that nothing of the sort has happened. It is too early for the navy to decide whether it would

go for the STOBAR or CATOBAR carrier. "The RFI would help the navy decide the new IAC's Qualitative Requirements at best," he said. While platforms like MiG-29K, Sea Harrier and the futuristic LCA will give the strike capability, the navy is ensuring a multi-layered surveillance capability to enhance its MDA.

### The navy headquarters have issued a restricted RFP for 16 multirole helicopters with medium range maritime surveillance and anti-surface vessel capabilities

Topping the list are the P-8I long range maritime reconnaissance aircraft with potent ASW capabilities; eight aircraft have been contracted with US Boeing through the direct commercial sales route with a potential for four more to be purchased. According to naval headquarters sources, the asked-for P-8I capabilities will not be affected due to the still outstanding critical bilateral defence agreements between India and the US. Meanwhile, a top Boeing official has confirmed that 'Bending metal' for P-8I will begin soon and the OEM will meet the first aircraft delivery schedule for 2013. Another potent platform with

the navy are five Il-38SD (Sea Dragon) aircraft of INAS 315 (Winged Stallions), designed to fly at 30,000 feet. Inducted in 1977, the life of IL-38 has been extended by 15 years. Under a contract, Russia has provided the SD suite on each platform. The SD suite is both complex and simple at the same time. Complex because it has so much packed into one system and simple because its various sub-systems provide a composite picture and redundancy. The SD suite has six sub-systems: SD1 is the radar system, SD2 is ASW, SD3 is Magnetic Anomaly Detector, SD4 is the central computer, SD5 are electro-optics, and SD6 is ESM. The system is not fully validated, however, when done (officers are optimistic it will happen soon), the IL-38SD will have the capability to search, detect, locate and self-attack surface and underwater targets. Besides a good navigation system, the SD suite provides a potent air-to-surface missile capability.

At the naval air station, the medium range maritime aircraft Dornier unit, INAS 310 (Cobras) is the most decorated one. After 26/11, it has regularly participated in Operation Raksha, a joint navy and coast guard exercise for coastal security. "The Dornier aircraft of INAS 310 have done a total of 2,700hours flying in 2010 on operational commitments and training which is maximum by any naval squadron," said the OC, Commander



**GLARING GAP** IN's submarine programme (Kilo class submarines above) needs a massive push to overcome the widening gap

Sanjay Chauhan. The 15 Dornier aircraft are configured in one of the three versions: 'Para', which has only essential equipment; Information Warfare, with extensive EW capabilities; and the MR version, which has radar with active and passive surveillance features including an advanced radar and data processing suite. A major problem that every SRMR aircraft faces is identification. The unit will celebrate its golden jubilee on 21 March 2011. To strengthen its ISR capabilities, the navy is seeking to add both land and ship borne UAVs in the 12th defence plan (2012-2017).

The navy headquarters, meanwhile, have issued a restricted RFP for 16 multirole helicopters with medium range maritime surveillance and anti-surface vessel capabilities. In the race are the AgustaWestland's 101, NH industries' NH90, and Sikorsky's CH-148 Cyclone. As it usually takes between 34 to 36 months from the issue of the RFP to signing of the contract, the multirole helicopters should be with the navy by 2014. The navy has also issued a RFI for 56 naval utility helicopters meant to replace the existing Chetak helicopters. On the issue of mid-life upgrade of 17 Sea King42B shipborne ASW helicopters, the navy has yet not taken the decision. In all probability, these helicopters will go for upgrades. However, the mid

life mission avionics upgrade of Ka-28-PL is underway. It is a sturdy aircraft that needs equipment replacement. Another potent aircraft at INS Hansa are the Ka-31 Air Early Warning (AEW) helicopters of INAS 339 (Falcons). Its E801 radar has capability to detect low flying helicopters and missiles. "At present, The INAS 339 has two Ka-31 meant for combat training purposes," said the OC, Commander B.K. Yadav. The navy has sought five more Ka-31 for the follow-on Talwar class frigates taking the total holding to 13.

An area which can well be called an operational gap in the navy is its submarine fleet. Unless some drastic measures are taken soon, it will be difficult to have more than double digit operational conventional submarines in service. Most of the Kilo class submarines are old and the navy has decided that it will not be worthwhile to have more than six vessels to have the 300km land attack Klub missiles. The navy ought to push for the second line of submarines (Project 75I) on a fast track, and invest in technologies like AIP, stealth, better sensors and communications, and network the submarines with the air and surface platforms so that they no longer remain the lone rangers in the sea. The present understanding is that three of the Project 75I vessels will be built at MDL, one at

Hindustan Shipyard Limited, and two to be made by the foreign collaborator abroad. Senior naval officers say that the last word on work distribution has not been said and much will depend on who is chosen as the foreign partner for the second line of submarines, the RFP for which should have been issued long time ago.

Regarding naval weapons, small steps have been taken towards indigenisation. For instance, the DRDO is working with Israel (IAI) and France (MBDA) for development of medium and small range missiles respectively. Once developed, these missiles should go for production to the private sector. Moreover, the BrahMos anti-ship cruise missile will be part of all surface ships of the navy. The indigenous Akash system has also been accepted after much resistance.

While these procurements will certainly add capabilities, the pace of modernisation remains a matter of concern. If the adversaries continue to outpace the Indian Navy in its capability-building march, several acquisitions will run the risk of losing their teeth. As India seeks a greater role in the Indian Ocean Region, it will have to shoulder greater responsibilities which call for greater capabilities. The so-called 'Indian rate of growth' should not be acceptable any longer. ||