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INS VIKRAMADITYA : A BOOST TO INDIA'S POWER PROJECTION CAPABILITIES

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INS Vikramaditya, after extensive refurbishment in Russia, sailed into its home port of Karwar on 07 Jan 2014[i]. This former Soviet "missile cruiser", at 44,500 tons displacement, is the largest ship ever to be operated by the Indian Navy (IN). The MiG-29K aircraft destined to serve aboard the Vikramaditya are already in India with training progressing at a shore based facility designed to mimic operations off the aircraft carrier's deck[ii]. INS Vikramaditya is expected to carry 18 MiG-29K fighters with an option for another 12. She will also operate various variants of the Kamov Ks-31 helicopter. The first indigenously designed and built aircraft carrier, INS Vikrant, was launched on 12 August 2013. This was a great feat for the nation's warship design and building fraternity. While still several years from operationalisation, the launching of INS Vikrant, which has been designed to carry as many as 36 fixed wing fighter aircraft comprising a mix of MiG-29K fighters and indigenous LCA (naval variants) in addition to Ka-31 AEW and ALH helicopters, is a great feat. INS Vikramaditya and INS Vikrant, once the latter is ready, will be able to accompany and provide air cover to Indian Navy vessels anywhere they go.

IMPLICATIONS OF AIRPOWER AT SEA

The importance of air power at sea can not be overstated. In fact since the Battle of Coral Sea (04-08 May 1942), which saw two opposing fleets of ships fighting a major sea battle but without ships directly sighting ships of the opposing side. The entire battle was conducted through use of aircraft launched from aircraft carriers. Not one long range gun was fired from a ship at a surface target in the entire battle. Since this battle the importance and potency of air power has been clear to all aviation and naval professionals.

ANALYSIS OF INDIAN AIRPOWER AT SEA

The induction of INS Vikramaditya along with the earlier launching of the hull of INS Vikrant, with the power plant and generators integrated, is the first step in building up a potent multidimensional seagoing force able to defend India's interests at large distances from the country's shores.

INS Vikramaditya and INS Vikrant will carry similar aircraft in form of MiG-29K, and Ka-31 on board giving them some interoperability advantages. These two ships are expected to provide a much longer arm, to Indian fleets that they accompany, to reach out and influence matters well outside the usual reach of ships that are armed with heavy guns and missiles. The fighters on board the aircraft carriers are these shops' primary weapons and could be expected to be able to project effective force as much as several hundred kilometres from the location of the aircraft carriers themselves. The MiG-29Ks will also be able to ensure that hostile aircraft are unable to threaten our fleets even at large distances from the Indian mainland and thus outside the protective cover of land based Indian fighters.

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IN's MiG-29K fighters are heavily modified versions of the earlier land based MiG-29B operated by the Indian Air Force (IAF). The MiG-29K through redesign carries about 50% more internal fuel than the MiG-29B. this gives the MiG-29K a Radius of action (RoA) of 850 km on internal fuel and a RoA of 1300 km through use of external fuel tanks ("drop tanks")[iii]. The MiG-29K are capable of carrying out buddy refuelling through use of specially designed buddy refuelling packs. With buddy refuelling, the MiG-29K, if one were to apply the standard rule of thumb of in flight refuelling increasing the RoA of a fourth generation fighter by 60% over its without in flight refuelling RoA, the MiG-29K should obtain a RoA of between 1400 (without external fuel tanks) and 2000 km (with external "drop" tanks also attached, but jettisoned when empty). In case the buddy refuelling packs are not as yet standard fit on these aircraft it is reasonable to expect IN to purchase these in view of the fact that IN's MiG-29Ks are likely to usually operate too far out at sea to be able to use the IAF's Il-78 refuellers. These RoA figures are for medium level missions. The MiG-29K is capable of carrying an external weapon load of as much as 5500kg on nine external weapon stations. Thus even with three drop tanks attached, the MiG-29K should be able to carry a significant ordnance load on the remaining six weapon stations. The MiG-29K also boasts very

advanced avionics; including the Thales "TopSightE" helmet mounted display and sight[iv]. The TopSightE itself through the increase in pilot efficiency it is likely to bestow significantly enhanced combat power in MiG-29K over the earlier MiG-29B and other variants. The MiG-29KUB, the two seat trainer of the type, is fully combat capable and has 8% less internal fuel giving it 7% lower RoA than the MiG-29K[v]. With this capability the MiG-29Ks on board an IN CBG would be able to strike targets, with precision, as far as just over 2000km from the location of the INS Vikramaditya. The exact distance that the MiG-29Ks flying from Vikramaditya would be able to strike would, of course, depend upon the configuration chosen for the mission as well as the weapons selected for the strike.

At the same time, even without air-to-air refuelling, the MiG-29Ks on board the Vikramaditya should be able to provide effective air defence for the CBG out to a radius of about 1000 km from the location of the aircraft carrier. Thus INS Vikramaditya brings capabilities that were earlier well beyond reach to the IN. A CBG is in addition to being a very potent offensive formation is also a prime target for the enemy. As a very potent symbol of power potential enemies could be expected to devote considerable effort towards neutralising a CBG especially through targeting the aircraft carrier that lies at the heart of the CBG. The around 1000 km effective air defence bubble provided by MiG-29K fighters flying from INS Vikramaditya should be able to provide an effective defence against counter CBG air missions launched by hostile sea or land based aircraft. Thus the INS Vikramaditya carries on board a potent offensive and defensive capability (against air threats).

Training plays a major role in the effectiveness of all weapons systems. Here the IN should not lack anything. The IN has co-operated closely with IAF in building up a cadre of well trained fighter pilots. IAF posted naval aviators earmarked for subsequent conversion to MiG-29Ks to its own MiG-29 units for these naval aviators to imbibe high end combat skills[vi] and thus ease their transition to the MiG-29K. Regular exercises between IAF and IN units should further solidify this aspect.

It goes without saying that logically, in addition to buddy refuelling packs for the MiG-29Ks, if not already purchased, the IN would in the near future be exploring viable options for carrier based Airborne Early Warning and Control (AEW&C) platforms in order to fully exploit the MiG-29K's fleet defence and attack capability.

ANALYSIS AND IMPLICATIONS OF INS VIKRAMADITYA AND INS VIKRANT

Till such time as INS Vikrant is built and ready for operational use INS Vikramaditya will serve alongside INS Viraat. INS Viraat is an ex-UK light carrier equipped with Sea Harrier aircraft in

addition to helicopters. The Sea Harrier though an excellent aircraft in its own right does not match up in performance to the much more potent MiG-29K. A more potent CBG could be expected to be formed around INS Vikramaditya with a relatively less potent CBG being built around INS Viraat. Once INS Vikrant is ready and operational IN could be expected to field two equally potent CBGs.

Entering the third decade of the Twenty first century IN should be able to field three carrier battle groups (CBGs). These three CBGs would be built around INS Vikramaditya, INS Vikrant and the under construction IAC-II. These should help IN protect Indian interests at locations far removed from Indian shores as well as closer to the homeland in a more effective and efficient manner. The increasingly "designed and made in India" nature of the IN's fleets should provide strategic and tactical flexibility through total ownership of critical technologies and capabilities. Air power afloat as an integral part of the Indian naval fleets should provide these vessels assured air defence from hostile forces as well as a very potent strike element against surface targets at sea as well as on land and against enemy air power. Given the strategic importance of the Indian Ocean to the nation and world in general induction of INS Vikramaditya could be expected to give IN the capability to ensure that the vital sea lanes of communication (SLsOC) that pass through the Indian Ocean are secure while ensuring that potentially hostile naval elements are unable to dominate in this ocean.

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The IN has long aspired towards fielding a force with true blue water capabilities. Its single indeed pursuit of this dream looks like it is close to fructification. Of note here is the fact that IN has been heavily involved in the aircraft carrier project from the design stage onwards through the vessel being built at Cochin Shipyard. This has given IN total ownership of indigenous warship building projects through various stages. True there have been slippages in time along with cost overruns. But these should be seen in perspective. These delays are only to be expected when designing and building such a complicated vessel for the very first time. Admiral Gorshkov's mere refurbishment by Russian shipyards with several decades of experience in ship building stands as a comparison[vii]. Time and cost over runs in the indigenous aircraft carrier project, in contrast, are relatively minor. It is also pertinent to note that INS Vikrant is the lead ship of its class and later vessels of the same type if any are built should benefit from the learning already achieved in construction of the lead ship. In view of the potent capabilities of sea control that INS Vikramaditya brings to the IN the additional cost and time delays could reasonably be said to be acceptable in this

case. INS Vikramaditya will help in filling the gap till such time as the IACs are fully operational. Moreover the experience of operating a CBG based around INS Vikramaditya will give IN vital experience and learning that can be ploughed into the final fit and capability derivation of the IACs.

Any power with hostile intent will be forced to rethink its belligerent stance against Indian fleets when these fleets comprise carrier battle groups (CBGs) with potent air power instruments on board. In fact it could be expected that unless faced with CBGs of superior capability such as US Navy's (USN's) super carrier CBGs the mere presence of Indian CBGs would be adequate to ensure that Indian interests are not compromised through a show of adequate and potent force. Indian INS Vikramaditya and INS Vikrant centred CBGs should be able to give even the US super carrier based CBGs a run for their money.

CONCLUSION

The launching of INS Vikrant may be the first of a series of steps in completing construction of the country's first indigenously designed and built aircraft carrier but it signifies the coming of age of India's ability to design and build major warships in the country. This demonstration of development of a capable indigenous military industry is heartening in view of the many failures of indigenous defence industry in the aviation and land domains. Moreover, it indicates that the IN is close to achieving a capability to field well rounded forces at large distances from our shores in pursuit of securing India's national interests. Since World War-II it has been apparent that the aircraft carrier and the air power it carries is essential for modern naval operations. Hence the development of INS Vikrant indicates imminent availability of adequate integral airpower with IN's fleets. Meanwhile, as the indigenous aircraft carrier construction projects make progress induction of INS Vikramaditya provides IN with a potent force enhancer. IN is now in a position to form a potent CBG based on INS Vikramaditya. Such a CBG will assist in credible force projection far from India's shores while building up experience that will come in useful in finalisation of the fit of India's indigenously built aircraft carriers and their CBGs.

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[i] "INS Vikramaditya reaches Karnataka port", http://www.indianexpress.com/news/ins-vikramaditya-reaches-karnataka-port/1216609/, accessed on 09 Jan 2014.

[ii] See http://www.indianaviationnews.com/indian-aviation-newsdetails.asp?NID=136&PID=29, accessed on 10 Jan 2014.
[iii] ""MiG-29K / KUB", http://www.bharat-rakshak.com/NAVY/index.php?option=com_content&view=article&id=125, accessed on 13 Jan 2014
[iv] ""MiG-29K / KUB", http://www.bharat-rakshak.com/NAVY/index.php?option=com_content&view=article&id=125, accessed on 13 Jan 2014
[v] ""MiG-29K / KUB", http://www.bharat-rakshak.com/NAVY/index.php?option=com_content&view=article&id=125, accessed on 13 Jan 2014.

[vi] "AFS, Bidar Pilots' Cradle", http://sainiksamachar.nic.in/englisharchives/2012/oct01-12/h5.htm, accessed on 15 Jan 2014.

[vii] Initially the Admiral Gorshkov was to be given free to India with India paying $800million for its refurbishment and another $ 1 billion for MiG-29 fighters and other equipment. The final cost is in the range of $ 2.33 billion. Initial entry into service date was to be October 2008 with delivery finally delayed to October 2013.