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Issue Brief

Attack on Sevastopol: Key Takeaways

R. Vignesh and Abhay Kumar Singh

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S*ummary*

The naval base in Sevastopol, the home of Russian Navy's Black Sea Fleet, was struck by Ukrainian missiles on 13 September 2023. These missiles managed to penetrate Russian air defence grids over Crimea and successfully hit two very important targets—a submarine and an amphibious landing ship undergoing repairs in the dry dock of Sevastopol. The images of the damaged ships raise serious doubts on the prospects of them being employed again in combat.

On 13 September 2023, the port city of Sevastopol in Crimea was attacked by Ukrainian missile strikes. As per reports, Ukraine carried out this strike using Storm Shadow cruise missiles that it acquired from the United Kingdom (UK) earlier this year. Ukraine supposedly fired ten of these missiles, of which three managed to penetrate the Russian Air Defence Grids. Two Russian warships that were undergoing repairs in the dry dock sustained severe damage and were rendered inoperable. This included a large surface and submersible vessel that has been identified as a Landing Ship (LST) and a submarine.¹

Although Ukraine has been continuously carrying out attacks on Sevastopol since July 2022, what makes this attack important is that it has been successful in inflicting considerable damage to Russian military infrastructure in the Crimean Peninsula. This attack on a key Russian naval base on Crimean Peninsula could have potentially far-reaching impact on the maritime theatre of the Russia-Ukraine war.

Strategic Significance of Sevastopol

The naval base at Sevastopol is the home to the Russian Navy's Black Sea Fleet and has a storied history. As a warm water port with a natural harbor and extensive infrastructure, Sevastopol is among the best naval bases in the Black Sea region.² Russia established the naval base in Sevastopol after it gained control of the Crimean Peninsula from the erstwhile Ottoman Empire in the late 18th century. Ever since then, Sevastopol has been popularly associated with Russia's glorious naval past. Even after the dissolution of the Soviet Union, Russia entered into bilateral arrangements with Ukraine to continue using the Sevastopol Naval Base until 2042.

President Vladimir Putin alluded to the significance of Sevastopol to Russian naval power as amongst the reasons that drove Russia's actions in Crimea in 2014. He stated that if Russia had not made the pre-empted move in Crimea, then NATO ships would have ended up in the city of Russian navy glory, Sevastopol.³ It must be noted that Sevastopol also serves as the headquarters of the Russian Navy's Mediterranean Task Force that is responsible for maritime force projection in West Asia. Hence, Sevastopol has been playing a vital role in supporting the Russian military operations in Syria since 2015.

In the initial months of the Ukraine War, Sevastopol served as the nerve centre for the Russian Naval Operations in the Black Sea. Operating from Sevastopol, the surface ships and submarines of the Black Sea Fleet bombarded Odesa and other targets along the southern coast of Ukraine. On 25 February 2022, Russia

¹ Deborah Haynes, [“British Cruise Missiles Were Used in Significant Ukrainian Attack on Russian Submarine”](#), *Skynews*, 13 September 2023.

² [“Crimea's Strategic Value to Russia”](#), Center for Strategic & International Studies, 18 March 2014.

³ [“Putin says Annexation of Crimea Partly a Response to NATO Enlargement”](#), *Reuters*, 18 April 2014.

announced the establishment of a Maritime Exclusion Zone (MEZ) in the northwestern portion of the Black Sea.⁴ Russian warships from Sevastopol played a vital role in enforcing this MEZ.

Sevastopol also played a critical role in supporting Russia’s four-month long occupation of Snake Island. During the initial weeks of the War, many observers speculated that Sevastopol would be the staging point for potential Russian amphibious operations on Odesa. On a regular basis, Russian surface ships and submarines employed in combat operations berthed in Sevastopol for re-arming, replenishing and repair. The geographic advantages and the infrastructure facilities available in Sevastopol enabled the Black Sea Fleet to make the optimal utilisation of its Operational Turnaround (OTR) and firepower against Ukrainian targets.

Sevastopol in the Ukrainian Crosshairs

The Russian withdrawal from Snake Island on 30 June 2022 and its subsequent retaking by Ukraine was an important marker in the maritime theatre of the War. After the loss of Snake Island, Russia’s ability to dominate the north-western part of the Black Sea was greatly undermined. The reclamation of Snake Island opened up prospects for Ukraine to launch attacks eastwards towards the Crimean Peninsula.

The first major attack on Crimea happened on 31 July 2022, when Sevastopol was attacked by Ukraine using Unmanned Aerial Vehicle (UAV). This attack prompted Russian authorities to cancel the Navy Celebrations in Sevastopol due to safety concerns.⁵ Another major attack happened on 29 October 2022, when seven Ukrainian Unmanned Surface Vessels (USV) penetrated the harbor defence of Sevastopol and struck two Russian Warships. Although the Russian warships only suffered minor damage, this attack was successful in challenging the notion of Crimea and Sevastopol being safe from Ukrainian attacks. Ever since then, Ukraine’s attacks on both Crimea and Sevastopol have increased both in terms of frequency and scale.

Battle Damage Assessment (BDA)

Thus far, the attack on 13 September 2023 is the most successful attack considering the damage inflicted upon Russia’s naval assets in Sevastopol. Since then, there have been several independent BDAs released by various Open-Source Intelligence (OSINT) platforms. The analysis of these BDAs provides a holistic picture of the nature and extent of loss that the Russian Navy incurred in this attack. Of the three missiles that had penetrated the Russian air defence grid, one had struck the submarine while the other two had hit the LST.

⁴ Raul Pedrozo, “[Maritime Exclusion Zones in Armed Conflicts](#)”, *International Law Studies*, Vol. 99, 2022.

⁵ Andrew Roth, Isobel Koshiw and Pjotr Sauer, “[Russia Claims Five Injured in Ukraine Drone Attack on Black Sea Fleet HQ](#)”, *The Guardian*, 31 July 2022.

Rostov-on-Don

The Submarine has been identified as an improved Kilo-Class submarine called the Rostov-on-Don. This class of vessels are conventional submarines (SSK) with a dual hull design.⁶ The inner hull is called the pressure hull, designed to withstand the immense pressure of the deep sea and houses the crew and equipment. While the outer hull is the structural hull designed to protect the inner hull from damage.⁷ The photographs of the damaged submarine released by Conflict Intelligence Team (CIT) indicate that the missile had penetrated both the hulls and the warhead has exploded inside the pressure hull.⁸ The possible trajectory and the damage inflicted on the submarine has been illustrated in Image 1 released by the *Kyiv Post*.

* HE Warhead – High Explosive Warhead

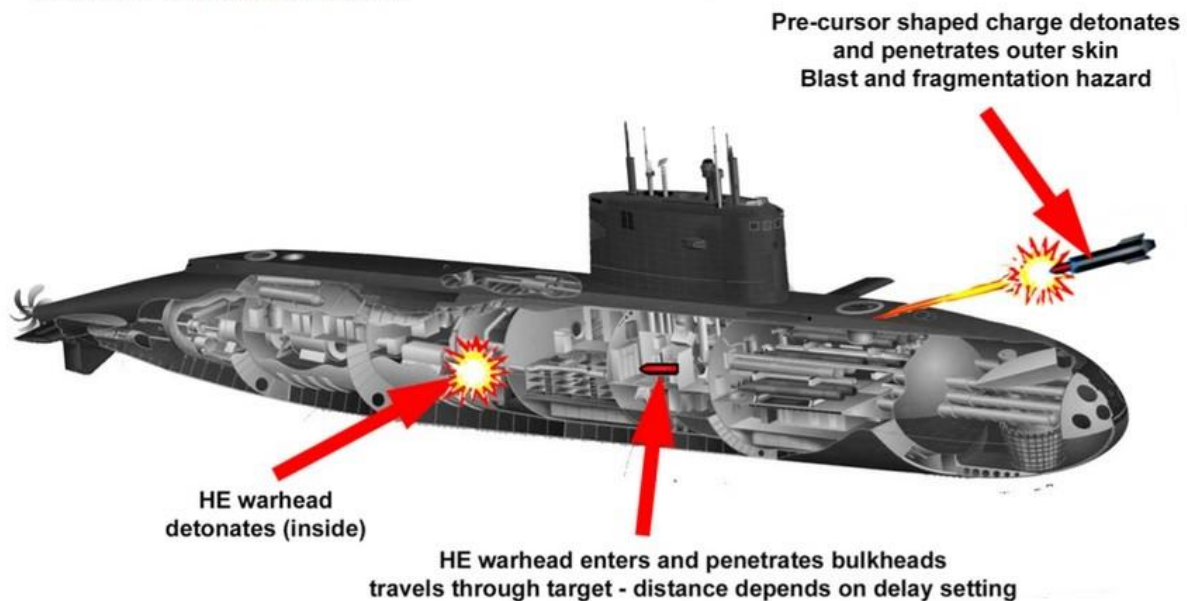


Image 1: Trajectory and damage of the Missile Attack on Rostov-on-Don

Source: Steve Brown, [“Destruction of Russia’s Kilo Class Submarine Unique in More Ways Than One”](#), *Kyiv Post*, 19 September 2023.

This means that the missile must have completely destroyed all the key systems and the submarine has most likely sustained damage that is beyond repair. This submarine was a very important asset of the Russian Navy as it was amongst the four improved-kilo class submarines that constituted the undersea capability of the Black Sea Fleet.⁹ Thus far, this submarine had played a very crucial role in launching the Kalibr cruise missiles against Ukrainian targets on land. These submarines have

⁶ [“SSK Kilo Class \(Type 877EKM\)”](#), Naval Technology, 2 December 2020.

⁷ Antonio, [“The Advantages and Disadvantages of Dual Hulled Submarines”](#), USSJPKENNEDYJR.ORG, 12 November 2022.

⁸ Conflict Intelligence Team, [“CIT Received Exclusive Photos of the Damaged Russian Submarine Rostov-on-Don”](#), Twitter, 18 September 2023.

⁹ HI Sutton, [“Russian Submarine Hit by Missile, Rostov-On-Don, Gone”](#), *Navalnews*, 20 September 2023.

operated with absolute impunity as the Ukrainian Navy currently does not possess any anti-submarine capability.

In this context, the destruction of this submarine while on dry dock is a major success for the Ukrainian Navy as it has managed to effectively degrade the Russian Navy’s undersea capability. As a result, this loss of Rostov-on-Don is the most significant loss for the Russian Navy since the sinking of Moskva in April last year. Like Moskva, the destruction of Rostov-on-Don is significant to the history of naval warfare as it is the first time since the 1982 Falklands War that a submarine has been destroyed in combat. Hence, this is the most important loss for the Russian Navy in this attack.

The Minsk

The other significant target of the attack has been identified as a Soviet Era Ropucha-class LST named as Minsk. These class of ships were designed for beach landings and were capable of transporting cargo up to 450 tons. The structure of these ships has been designed to have both bow and stern doors, making it possible to load and unload vehicles easily.¹⁰ The Minsk was among the six LSTs that entered the Black Sea through the Turkish Straits in January 2022. In the initial weeks of the war, it was expected that these ships would serve as the backbone of the much-anticipated Russian amphibious operations on the southern coast of Ukraine.

However, this amphibious operation never materialised. These ships nevertheless remained a vital component of the Russian naval operations as logistics vessels. Notably, these ships were extensively used for maintaining connectivity and logistics between the Russian mainland and Crimea following the attack on the Kerch Bridge in October 2022. Even after the bridge was reopened in February 2023, these LSTs have been used for ferrying civilian traffic across the Kerch Strait apart from their usual role of transporting heavy military equipment.¹¹ This was due to the fact that the civilian traffic on the Kerch bridge has been highly restricted following repeated attacks by Ukraine.

In this context, these ships are of high strategic value to the Russian Navy in its ongoing operations in the Black Sea. The images and videos of Minsk burning after the attack have revealed that the ship sustained critical damage to its superstructure. From the pictures, it can be seen that the most of the upper deck of the ship was completely destroyed by fire. Observers have pointed out the variation of the front, central and rear parts of the ship as an indication of the hull being completely broken. Judging from the images of the damaged Minsk, it is likely that the missiles had struck on the central part superstructure and possibly destroyed the ships engine compartment.¹²

¹⁰ [“Russia use its Ropucha Class Landing Ships for Civilian Needs”](#), *Navalnews*, 13 July 2023.

¹¹ Frederik Van Lokeren, [“Black Sea Amphibious Lift Decreased by Civilian Needs”](#), *Russian Navy- News and Analysis*, 12 July 2023.

¹² [“What is Left of Russia’s the Minsk Landing Ship After Ukrainians Strike Sevastopol, Is It Realistic to Restore It?”](#), *Defence Express*, 13 September 2023.

It is possible that Minsk, like Rostov-on-Don, has been damaged beyond repair. This is contrary to Russia’s claims that these vessels would be swiftly repaired and put back into service at the earliest.¹³ Considering the various independent BDAs of the Sevastopol attack, it would be safe to assume that both these significant assets of the Russian Navy are most likely to be written off from service. Image 2 shared on Twitter by conflict correspondent Chuck Pfarrer illustrates the extent of possible damage sustained by Minsk.

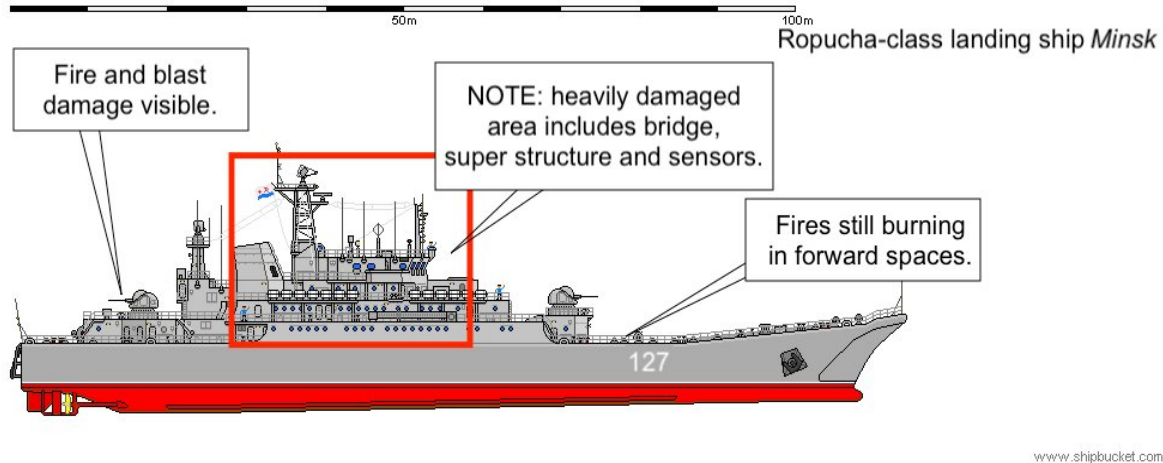


Image 2: Possible Damage to Minsk by Ukrainian Missile Strike
Source: <https://pbs.twimg.com/media/F6A1QtQWsAAh2q.jpg>

Sevastopol Shipyard

The lateral damage of this attack has been on the dry docks where these two vessels have been undergoing repairs. Since the beginning of the war, the Sevastopol Shipyard has been engaged in the repair and re-equipment of the Black Sea fleet’s ships and submarine.¹⁴ Experts have opined that there are no comparable facilities within the Black Sea capable of conducting major repairs works on Russian warships. For example, the nearest Russian port in Novorossiysk which is located about 500 kilometers east of Sevastopol does not have facilities for servicing naval vessels like submarines.¹⁵ Hence the Sevastopol Shipyard is a critical infrastructure facility supporting the Russian War effort in the Black Sea.

At the time of the attack both Rostov-on-Don and Minsk were undergoing repairs in the two adjacent docks at this shipyard. The images of the shipyard after the attack suggest that the docks did not sustain any heavy damage to its infrastructure. However, the main problem will be to clear the wreckage of the two damaged vessels, before the docks can be used again. Therefore, the attack has put enormous pressure on the Russian Navy as it possesses only limited dry dock facilities in the Black Sea capable of servicing important assets like submarines.

¹³ Rita Muller, “[Russian Ministry of Defense: Ships Damaged in Sevastopol Will Be Repaired and Returned to Service](#)”, *News of Crimea*, 13 September 2023.

¹⁴ “[Sevmroverf \(Sevastopol Shipyard\)](#)”, *FAS.org*, 2 October 2023.

¹⁵ Mike Eckel, “[Russia’s Navy Has a Dry Dock Problem Again](#)”, *Radio Free Europe/Radio Liberty*, 16 September 2023.

Key Takeaways

Apart from the likely destruction of the vessels and damage to the dry docks, the attack is indicative of some larger trends that are emerging in the maritime theater of the Ukraine War.

Expanding Ukrainian Maritime Strike Capability

In the initial weeks of the War, Ukraine’s maritime strike capability was largely confined to its immediate coastal waters and Russian warships operated with impunity on the high seas. Despite their limited strike capability, the Ukrainian Navy using coastal missile batteries and UAVs was successful in targeting the Russian-occupied Snake Island situated just 19 nautical miles off the coast of Odesa. During this time, the erstwhile flagship of the Black Sea Fleet was reportedly struck and sunk by Ukrainian anti-ship missiles.

The attacks on Sevastopol and the Kerch Bridge that began in October 2022 indicated the expansion of Ukraine’s maritime strike capability to Crimea. Following this, the Black Sea Fleet began relocating some of its ships and submarines from Sevastopol to the Novorossiysk, situated on the Russian Mainland.¹⁶ But with the recent attacks, it has become clear that Sevastopol has become even more vulnerable and will most likely force the Russian Navy to relocate the Black Sea Fleet to Novorossiysk. However, on 4 August 2023, the Ukrainian Navy successfully attacked even the Novorossiysk base using USVs and reportedly damaged a Russian Warship. Hence, Ukrainian Maritime Strike Capability has consistently expanded, bringing the war to Russia’s Southern coasts as illustrated in Map 1.



Map 1: Expanding Ukrainian Maritime Strike Range in the Black Sea
Source: GIS Section, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA)

¹⁶ HI Sutton, “[Russian Navy Pulls Warships from Black Sea into Port After Attacks](#)”, *USNI News*, 7 November 2022.

Ukraine’s Ability to Penetrate Russian Air Defence Grids in Crimea

Since the beginning of the War, the airspace over Crimea has been protected by Russian Air Defence grids consisting of an extensive network of S-400 and S-300 missiles. Due to this, Ukraine’s attacks on the Crimean Peninsula were predominantly carried out using UAVs and USVs. The ability of these drones to inflict damage upon Russian military targets in Crimea was also limited. But the attack on 13 September 2023 was carried out using cruise missiles that managed to penetrate Russia’s air defence grid and strike vital targets. Earlier on 23 August 2023, Ukraine had claimed that it had successfully destroyed an S-400 battery in Crimea and released a video of the purported attack.¹⁷

These attacks are a key indicator that Ukraine now possess the capability to penetrate Russian air defence grids and strike key military targets inside Crimea. This also means that the vital Kerch Bridge which connects the Crimean Peninsula with the Russian mainland has also now become vulnerable to Ukrainian cruise missiles. So far, Ukraine has managed to successfully strike this bridge multiple times using truck bombs and USVs. In these attacks, the bridge only sustained minor damage and was reopened after repairs. However, a cruise missile strike has the potential to inflict damage on a larger scale and sever Russia’s connectivity with Crimea. Hence, in the forthcoming days, Russia will increasingly find it difficult to defend this 19-kilometer-long bridge from Ukrainian cruise missiles.

Vulnerability of Russian Supply Chains

It must be noted that in the initial months of the war when the strategically located Snake Island was under Russia occupation, Ukraine adopted the tactic of interdicting the Black Sea Fleet’s supply chain. Despite its then limited strike range, Ukraine began targeting Russian supply ships headed to Snake Island using drones and anti-ship missiles.¹⁸ This tactic was successful as it made Russia’s occupation of Snake Island very difficult and subsequently led to their withdrawal on 30 June 2022.

Currently, the Ukrainian Navy has a maritime strike range that extends up to Novorossiysk. The Ukraine Military has also demonstrated its capability to penetrate the Russia Air Defence Grids and strike targets across the Crimean Peninsula. These developments indicate that Ukraine is in a better position to interdict and disrupt Russian supply chains and communication networks around Crimea. The Black Sea Fleet is critical in maintaining Russian supply chains and communication networks across Krasnodar Krai, Crimea and Southern Ukraine.

Extensive Ukrainian missile and drone strikes on the Black Sea Fleet’s infrastructure in Crimea have already disrupted Russian Ground Lines of Communication

¹⁷ Ashish Dangwal, “[Painful Blow: Russia’s S-400 Air Defense Systems ‘Bombed’ by Ukraine Kyiv Releases Scintillating Video](#)”, *The Eurasian Times*, 26 September 2023.

¹⁸ Heather Mongilio, “[DoD; Ukraine Sinks Russian Supply Ship with Harpoon Missile](#)”, *USNI News*, 1 July 2022.

(GLOCs).¹⁹ Recently, it was confirmed through satellite imagery that the 744th Communications Center of the Black Sea Fleet in Crimea had been struck by Ukrainian missile strikes on 20 September 2023.²⁰ Also, in September, the Ukrainian forces gained control of several offshore oil drilling platforms close to Crimea. Ukraine has claimed that it has captured radar systems from these platforms that can track movements of Russian ships in the Black Sea.²¹ Observers have opined that through such attacks, the Ukrainian Military has achieved effects beyond just the degradation of Russian naval capabilities.²² The imminent threat to the Black Sea Fleet’s supply chains and communication networks from Ukrainian strikes severely undermines Russia’s ability to protect Crimea.

An Attempt to Weaken Russian Resolve

The attack on Sevastopol not only casts an undermining effect on the capabilities of the Black Sea Fleet but also on the morale of Russian military personnel and civilians in Crimea. Sevastopol, being the home of the Black Sea Fleet, used to witness elaborate military parades for Russia’s Navy Day Celebrations held every July. On the other hand, since the Soviet Times, Crimea has been a popular summer destination for Russian tourists. After Crimea came under Russian control in 2014, inflow of tourism exponentially increased from 5 million in 2015 to 9.4 million by 2021. The local economy of Crimea is heavily reliant on tourism and Russia has heavily invested in infrastructure facilities for tourists.²³

Following the very first attack on Crimea in July 2022 by Ukraine, Russia cancelled its Navy Day parade in Sevastopol.²⁴ Since then, because of the frequent attacks on Crimea, there has been a drastic reduction in the tourism inflow due to safety concerns. Also, following the repeated attacks on the Kerch Bridge, the Russian authorities have been advising their citizens travelling in and out of Crimea to use alternative routes. This alternative route goes through the Southern Ukrainian territory currently under Russian control which is an active warzone.²⁵ These developments indicate that Ukrainian attacks have been successful in disrupting normalcy in the Crimean Peninsula.

¹⁹ Nicole Wolkov, Angelica Evans, Christina Harward, Riley Bailey and Frederick W. Kagan, [“Russian Offensive Campaign Assessment, September 21, 2023”](#), Institute for the Study of War, 21 September 2023.

²⁰ Ibid.

²¹ [“Ukraine Regains Control of Strategic Black Sea Oil Rigs, Intelligence Service Says”](#), *The Guardian*, 12 September 2023.

²² Nicole Wolkov, Angelica Evans, Christina Harward, Riley Bailey and Frederick W. Kagan, [“Russian Offensive Campaign Assessment, September 21, 2023”](#), no. 19.

²³ Ivana Kottasova, [“Putin’s War is Forcing Russians to Ditch a Favorite Holiday Destination”](#), *CNN*, 27 August 2023.

²⁴ [“Russian Official Says Ukraine Carried Out Drone Attack on Black Sea Fleet HQ”](#), *Reuters*, 31 July 2022.

²⁵ [“Russia Tells Crimea Tourists to Drive Home Via Occupied Ukraine”](#), *The Economic Times*, 17 July 2023.

Conclusion

Overall, these developments indicate that the battle lines in the maritime theatre of the Ukraine war have undergone major changes. In the coming days and months, Ukraine could further attempt to scale up its attack on Crimea. This would make Sevastopol an unsafe naval base for the Black Sea Fleet. In such a scenario, there is a possibility that the Black Sea Fleet will be completely relocated to Novorossiysk. Due to this, the OTR and supply chains of Russian warships and submarines will become overstretched. This would make the Black Sea Fleet less efficient and more vulnerable in its naval operations against Ukraine. Due to this, Russia’s ability to dominate the north-western part of the Black Sea will be considerably diminished. This will result in Ukraine having more secure access to its coasts and its military will be in a better position to challenge Russia’s dominance of the Black Sea.

About the Author



Dr. R. Vignesh is Research Analyst at the Manohar Parrikar Institute for Defence Studies and Analyses, New Delhi.



Cmde. Abhay Kumar Singh (Retd.) is Research Fellow at the Manohar Parrikar Institute for Defence Studies and Analyses, New Delhi.

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