

## Old torpedoes in new sub for Navy

By Ajit K Dubey

After a delay of around five years, India on Thursday inducted its first modern conventional submarine, INS Kalvari, into the Navy on Thursday, a first in almost two decades. The submarine, which was earlier supposed to be inducted in the middle of this year, had to wait for six to seven months more for its commissioning as senior government functionaries insisted that the platform should be ready for operational deployment with its weapons at the time of being commissioned by the Prime Minister.

Due to this, the Navy borrowed the torpedoes of another class of submarines and fired them about three months ago to prove that the platform was ready for operational deployment, sources said. The Navy has been facing long delays in the procurement of heavyweight torpedoes for the Scorpene, which will be known as Kalvari class, due to the cancellation of a tender to procure the weapons from the scam-tainted Finmeccanica group of Italy which has now been named Leonardo. Sources said that due to lack of new heavyweight torpedoes, the Navy had to pull out weapons from another line of submarines and integrate them with the Kalvari in the recent times.

“The integration of the torpedoes is still going on but the main weapon for Kalvari would only be the new heavyweight torpedo for which a multi-vendor competition is going to be initiated in the near future,” a source said.

The heavyweight torpedoes for Kalvari would also be deployed on the nuclear submarine fleet of the Navy, including the boats of the Arihant Class nuclear powered submarines. Putting it into commission in Mumbai, Prime Minister Narendra Modi lauded the efforts of the Navy for its role from disaster management to combating piracy.

“Be it terrorism via sea, piracy, drug smuggling or illegal fishing, India is playing an important role in combating them,” he said.

“I call it SAGAR — security and growth for all in the region.” Addressing the gathering, Union defence minister Nirmala Sitharaman said, “Peace in Indian Ocean, which is the lifeline of global trade is better off with INS Kalvari.” Kalvari is the first of the six Scorpene-class submarines that will be handed over by shipbuilder Mazagon Dock Limited (MDL) to the Navy.

Designed by the French, these are being built by MDL in Mumbai as part of Project-75 of the Navy. Kalvari would be followed by five more submarines at a gap of nine months each.



## Kalvari submarine a big step in defence preparedness, says PM Modi

*First of six scorpene-class diesel-electric vessels commissioned into the Navy*

Prime Minister Narendra Modi formally commissioned the first of six Scorpene diesel-electric submarines into the Navy on Thursday. This is the Navy's first modern conventional submarine in almost two decades since the INS Sindhusashtra was procured from Russia in July 2000.

“It is a matter of pride for me to commission this submarine. Kalvari’s induction in the Navy is a big step in defence preparedness,” Mr. Modi said, lauding the Mazagon Dock Shipbuilders Ltd (MDL) for undertaking the project to construct the six submarines with technology transfer from the Naval Group (Formerly DCNS) of France.

The Scorpene submarines can undertake different missions including anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying and area surveillance, the MDL officials said. The second of the Scorpenes, Khanderi, was launched in January 2017, and is undergoing sea trials. The third, Karanj, is being readied for launch shortly. The rest are in various stages of outfitting. The project is expected to be over by 2020.

Defence Minister Nirmala Sitharaman said peace in the Indian Ocean, the lifeline of global trade, “is better off with INS Kalvari and her follow on submarines.”

INS Kalvari is manned by a team of eight officers and 35 sailors.

## Business Standard

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### Five years late, Scorpene submarine INS Kalvari joins navy

*Kalvari is an excellent example of 'Make in India' and will boost Navy's might, says PM Modi*

*By Ajai Shukla*

After 11 years in construction at Mazagon Dock Ltd, Mumbai (MDL), the first Scorpene (French for scorpion) submarine, INS Kalvari, was commissioned into the Indian navy by Prime Minister (PM) Narendra Modi in Mumbai on Thursday.

The Kalvari is the first of six conventional submarines for which the navy signed a Rs 18,798 crore contract in 2005 with French-Spanish submarine consortium, Armaris. That company was taken over by France’s Direction des Constructions Navales Services (DCNS), and its cost went up to Rs 23,562 crore. In June, DCNS changed its name to Naval Group.

All six Scorpenes were to be delivered between 2012 and 2015, but that schedule has slipped to 2017-2020. The second vessel, INS Khanderi, is currently undergoing sea trials and is on track for delivery in March. The other four are scheduled for delivery, according to the defence ministry, at nine-month intervals till mid-2021. Naval Group however said in a statement on Thursday that the Scorpenes “will be delivered at a rate of one every 12 months. By that estimation, the last Scorpene would be delivered in early 2022.

Compounding the five-year delay in building the Kalvari, the submarine has been languishing for almost three months after it was handed over to the navy, fully built and tested, in September. Since then, it has awaited the PM’s availability for half a day for the commissioning ceremony.

In the event, a galaxy of VIPs attended the ceremony, included Maharashtra governor, Vidyasagar Rao, Chief Minister Devendra Fadnavis, Defence Minister Nirmala Sitharaman, Minister of State for Defence, Subhash Bhamre and National Security Advisor Ajit Doval.

According to the “commissioning warrant”, read out by Kalvari’s first commanding officer, Captain SD Mehendale, the vessel has joined the navy’s Western fleet. This means it will primarily operate in the shallow waters of the Arabian Sea, blockading Pakistani ports and naval bases in wartime and sneaking up on enemy warships to destroy them with torpedoes and anti-ship missiles. It could also be used to blockade shipping from West Asia, entering the Arabian Sea through the Strait of Hormuz.

In a war with China, Indian submarines would blockade four major south east Asian straits – Malacca, Lombok, Sunda and Ombai Wetar – preventing Chinese warships based in the South China Sea from crossing into the Indian Ocean.

Even in peacetime the Indian Navy has, since June, continuously maintained a submarine and a surface warship off the Andaman Islands on “Malacca Domain Awareness” patrols, as part of a new posture of “mission based deployment”.

In fulfilling multiple operational tasks, the six Scorpene boats (as navies refer to submarines) will be a

welcome addition to the navy’s aging fleet of 13 conventional submarines. These include four 20-30 year-old, German-origin HDW Type 209 boats (called the Shishumar-class); and nine 10-20 year-old, Russian-origin Kilo class 877 EKM vessels (called the Sindhughosh-class).

## DEEP SECRET: UNDERWATER STEALTH

▪ The new Kalvari is a tech marvel compared to its forebear. Displacing 1,565 tonnes, it is 67.5 m long and 12.3 m high, and is powered by a quiet permanently magnetised propulsion

motor that drives it underwater at 20 knots (37 kmph) and, while surfaced, at 12 knots (22 kmph)

▪ A submarine’s key attribute is stealth. Stealth comes from

reducing engine noise and from silencing the boat’s internal systems

▪ In the Kalvari, systems are mounted on shock absorbing cradles to dampen vibrations and reduce its noise

The Kalvari is being commissioned almost exactly on the Silver Jubilee of the navy’s submarine arm. On December 8, 1967 the navy commissioned its first submarine, a Soviet Foxtrot-class boat that was the original INS Kalvari. That boat’s captain, Commodore (Retired) Subramanian attended the commissioning in Mumbai today.

The new Kalvari is a technological marvel compared to its forebear. Displacing 1,565 tonnes, it is 67.5 metres long and 12.3 metres high and is powered by a quiet “Permanently Magnetised Propulsion Motor” that drives it underwater at 20 knots (37 kilometres per hour, or kmph) and, while surfaced, at 12 knots (22 kmph). There are plans to equip the last two Scorpene boats with advanced “air independent propulsion”.

A submarine’s key attribute is stealth, since it is extremely vulnerable once an enemy detects it. Stealth comes from reducing engine noise and from silencing the boat’s internal systems. In the Kalvari, systems are mounted on shock absorbing cradles to dampen vibrations and reduce its noise signature.

The defence ministry says the Kalvari is armed with the heavyweight, 533-millimetre, wire-guided Surface and Underwater Target (SUT) torpedo, an old German armament acquired in the 1980s for the navy’s four 877 EKM (Sindhughosh class) submarines. The navy had initially chosen the modern Black Shark torpedo, built by WASS. That option fell through when the defence ministry banned all buys from Finmeccanica group companies (including WASS) after Italy began investigating corruption by Agusta Westland (a Finmeccanica company) in selling VVIP helicopters to India.

Besides the outdated SUT torpedo, the Kalvari packs the Exocet SM39 anti-ship missile, built by the Franco-British-Italian conglomerate, MBDA. The defence ministry says the Kalvari has already “undertaken successful torpedo launch as well as the navy’s maiden SM 39 Exocet combat missile firing on 02 Mar 2017.”

Like all underwater predators the Kalvari is superbly equipped to detect targets. It uses sonar and ranging equipment that is integrated into a digital Submarine Tactical Integrated Combat System (SUBTICS). This includes a Low Frequency Analysis and Ranging (LOFAR) sonar, which detects and classifies targets at long ranges (exact ranges are a closely guarded secret). Its periscopes are equipped with infrared and low light cameras and laser range finders.

Naval Group says the Kalvari is the fifth Scorpene submarine in the world. It has already delivered two each to Chile and Malaysia. In addition, four are under construction in Brazil.

While commissioning the Kalvari, the PM described INS Kalvari as a prime example of “Make in India.” In fact, Project 75, as the Scorpene procurement is named, pre-dates “Make in India” by 18 years. In 1999, the cabinet approved the navy’s 30-year submarine building programme, which involves the indigenous construction of 24 submarines by 2029. Project 75, to build six submarines, is the first part of that.

Alongside Project 75, six more submarines with “air independent propulsion” are to be indigenously built under Project 75-I. The defence ministry has allocated this to the private sector under the “Strategic

Partner” policy, and a Request for Information has gone out to global vendors. Subsequently, Project 76 would kick off, which envisages the indigenous design and construction of 12 more submarines.

## INS Kalvari Prime Example of Make in India, Says PM Modi

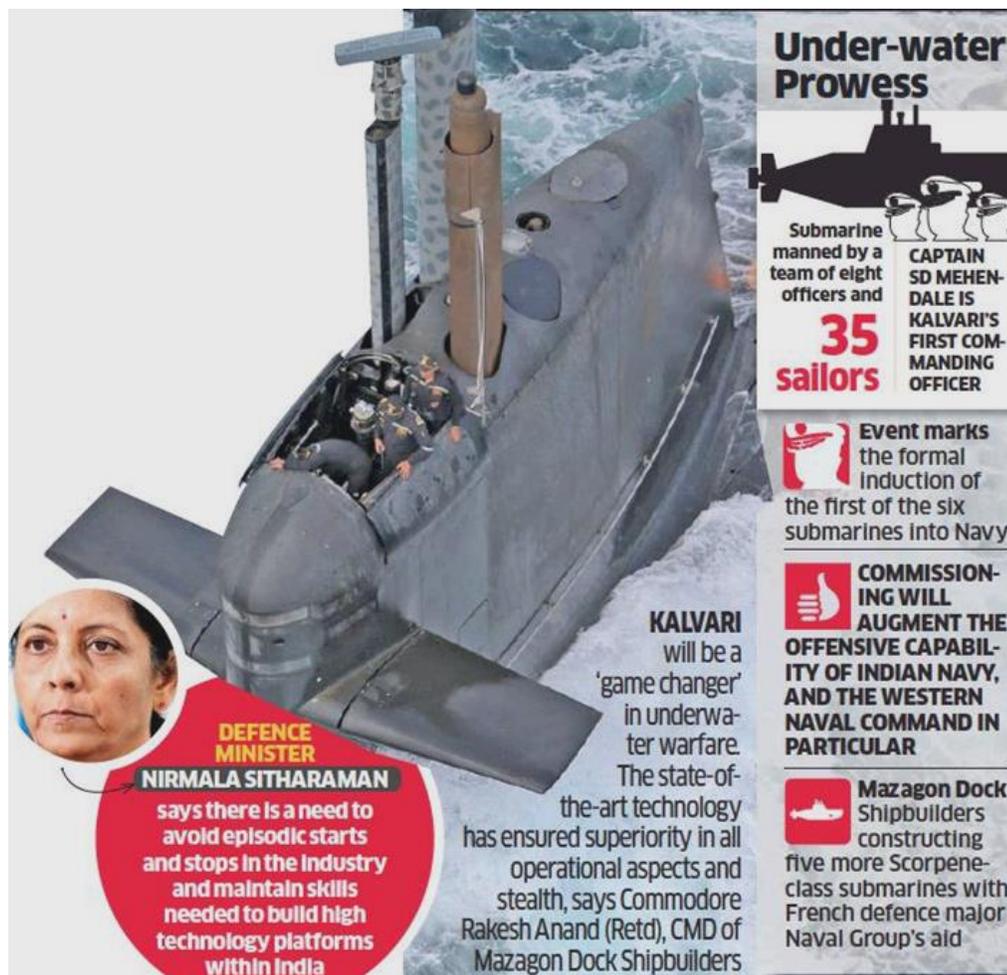
*Commissioned Into Navy Fleet: PM says submarine will add to the strength of Navy and is an example of the growing strategic partnership between India and France*

*By Shaurya.Gurung*

**New Delhi:** Prime Minister Narendra Modi on Thursday commissioned India’s first Scorpene-class submarine INS Kalvari in Mumbai and described it as a ‘prime example of Make in India’.

“The submarine is an excellent illustration of the fast growing strategic partnership between India and France,” he said.

“Prime Minister Narendra Modi commissioned INS Kalvari, the first of the six Scorpene-class submarines built under Project 75 (Kalvari Class) into the Indian Navy at a ceremony held at the Naval Dockyard, Mumbai on Thursday,” said the Navy in a statement. The event marked the formal induction of the first of the six submarines into the Navy.



**Under-water Prowess**

Submarine manned by a team of eight officers and **35 sailors**

**CAPTAIN SD MEHENDALE IS KALVARI'S FIRST COMMANDING OFFICER**

Event marks the formal induction of the first of the six submarines into Navy

**COMMISSIONING WILL AUGMENT THE OFFENSIVE CAPABILITY OF INDIAN NAVY, AND THE WESTERN NAVAL COMMAND IN PARTICULAR**

**Mazagon Dock Shipbuilders** constructing five more Scorpene-class submarines with French defence major Naval Group's aid

**KALVARI** will be a 'game changer' in underwater warfare. The state-of-the-art technology has ensured superiority in all operational aspects and stealth, says Commodore Rakesh Anand (Retd), CMD of Mazagon Dock Shipbuilders

**DEFENCE MINISTER NIRMALA SITHARAMAN** says there is a need to avoid episodic starts and stops in the industry and maintain skills needed to build high technology platforms within India

Modi said INS Kalvari will add to the strength of the Navy. “India is fully alert of its global, strategic and economic interests in the Indian Ocean,” he said, according to the navy’s statement. He said that is why the Navy plays a leading role in promoting peace and stability in the region.

He said that the skill set accumulated while building the submarine is an asset for India. In relation, Defence Minister Nirmala Sitharaman also said there is a need to avoid episodic starts and stops in the industry and maintain skills needed to build high-technology platforms within India.

The submarine is manned by a team of eight officers and 35 sailors with Captain SD Mehendale as her first Commanding Officer. The commissioning will augment the offensive capability of the Indian Navy and the Western Naval Command in particular. Commodore Rakesh Anand (Retd), CMD, Mazagon Dock Shipbuilders Limited (MDL), which constructed the submarine, said Kalvari will be a ‘game changer’ in underwater warfare, adding that its state-of-the-art technology has ensured superiority in all operational aspects and stealth.

MDL in a statement also said Kalvari reaffirms the giant strides taken by it in the Make in India programme. MDL is constructing five more Scorpene-class submarines with technology transfer from French defence major Naval Group.

“Building of the Scorpene was indeed a challenge as the complexity of the simplest of tasks increased exponentially due to all work having to be done in the most congested of spaces. This complexity was aggravated due to the stringent tolerances required. However, these challenges were successfully overcome. The expertise that MDL has gained from the Scorpene project has ensured that the shipyard is fully geared for undertaking construction of the next generation submarines,” said MDL.

Earlier, in a conversation with **ET**, Bernard G Buisson, the Managing Director of Naval Group in India, had said although the firm is open to collaborating with any shipyard selected by the MOD and Navy, it will be pleased to continue its cooperation with MDL for the follow on Project 75 (I) programme. He had said, “It will be sad if MDL loses this competency to build submarines if they have no more work beyond the Project 75 programme. It has happened earlier.”



*Fri, 15 Dec, 2017*

## **PM Narendra Modi commissions INS Kalvari: ‘Proof of Make in India’**

INS Kalvari, a diesel-electric submarine, has been built by the Mazagon Dockyard Limited (MDL) in collaboration with the French builder, M/s Naval Group.

Inducting the first of six Scorpene-class submarines into the Navy on Thursday, Prime Minister Narendra Modi commissioned INS Kalvari at the Naval Dockyard in Mumbai and said the induction was testimony to the significance of the government’s Make-in-India initiative.

“To dedicate this submarine to the nation is an equally proud moment for me. After a gap of nearly two decades, India has got this kind of a submarine and Kalvari is a fine example of the Make-in-India initiative. It is also a good model for international collaboration,” Modi said.

INS Kalvari, a diesel-electric submarine, has been built by the Mazagon Dockyard Limited (MDL) in collaboration with the French builder, M/s Naval Group.

The Commissioning Warrant of the submarine was thereafter read out by the Commanding Officer, Captain S D Mehendale. Subsequently, the Naval Ensign was hoisted onboard for the first time, followed by the breaking of the commissioning pennant.

The state-of-the-art technology used in the Scorpene gives it superior stealth features such as advanced acoustic silencing techniques, low radiated noise levels, hydro-dynamically optimised shape and the ability to launch a crippling attack on the enemy using precision guided weapons. An attack can be launched with both torpedoes and tube-launched anti-ship missiles, while underwater or on surface. The stealth is enhanced by the special attention given to various signatures.

The second of the Scorpene's under construction at the MDL, the Khanderi, was launched in January 2017 and is currently undergoing sea trials. The third Scorpene, Karanj, is being readied for a launch. The remaining three submarines are in various stages of outfitting. The project is expected to be completed by 2020.

As is the tradition, ships and submarines of the Navy are "re-incarnated" after decommissioning. So is it with Kalvari, named after the Tiger shark. The first Kalvari, commissioned in December 1967, was also the first submarine of the Indian Navy. She was decommissioned on May 31, 1996 after almost 30 years of service.

Modi said India was fully alert with regard to its global, strategic and economic interests in the Indian Ocean and the Navy plays a leading role in promoting peace and stability in the region.

Defence Minister Nirmala Sitharaman, Navy chief Admiral Sunil Lamba, National Security Advisor Ajit Doval, Maharashtra Governor Ch Vidyasagar Rao and CM Devendra Fadnavis were present at the ceremony.



*Fri, 15 Dec, 2017*

## **INS Kalvari best 'make in India' example: PM**

*By Shiv Kumar*

Presiding over the commissioning of Scorpene-class submarine INS Kalvari into the Navy this morning, Prime Minister Narendra Modi called it a shining example of 'make in India'.

"This is the perfect example of 'make In India'. I wish to congratulate every worker, every employee whose sweat is involved in the creation of Kalvari," Modi said in his speech. The PM then thanked the government of France for the technological assistance rendered for the construction of the submarine. The Scorpene-class submarines are designed by French company DCNS and is being built by the Mazagon Dock Limited (MDL) in Mumbai as part of the Navy's Project-75 programme.

In his speech, Modi reiterated the importance of the Indian Ocean in global trade and commerce. "Development in the 21st century is taking place via the Indian Ocean and it occupies a special place in the government's policies... India, too, was giving back to the world by playing a major role in tackling piracy, drug smuggling and terrorism via the sea," Modi added.

The PM said his government has been overhauling the defence sector. "For the past three years, we have been restructuring the entire defence and security apparatus... We have made an impact on the external and internal security of the country," Modi said.

According to the Navy, the Scorpene submarines incorporate a number of state-of-the-art features that improve undetected movement and launch attacks with precision-guided weapons.

INS Kalvari will be followed by INS Khanderi, which is currently undergoing trials. INS Kalvari has an overall length of 67.5 metres and a height of about 12.3 metres. The hull form, fin and hydroplanes are specifically designed to produce minimum underwater resistance.

The boat has 360 battery cells, each weighing 750 kg, to power the extremely silent Permanently Magnetised Propulsion Motor. The stealth of the boat is further enhanced through the mounting of equipment inside the pressure hull on shock-absorbing cradles.



*Fri, 15 Dec, 2017*

## PM launches India-made Scorpene

**IANAS**  
MUMBAI, 14 DECEMBER

Heralding it as a significant new era to boost India's defence and security, Prime Minister Narendra Modi on Thursday commissioned the country's first indigenously-built Scorpene-class submarine INS Kalvari into the Indian Navy.

He unveiled the commissioning plaque and shook hands with naval officers, before taking a quick voyage in the submarine.

It is named after the first Foxtort-class submarine - INS Kalvari - which was inducted into the Navy on 8 December 1967. This indigenous version comes days after the golden jubilee of the Navy's submarine wing. Kalvari means Tiger Shark.

Modi was received at the Naval Dockyard by Navy Chief Sunil Lanba and presented a 100-man Guard of

Honour. He thanked France for its help and collaboration in developing the Scorpene submarines, which encompass superior stealth and combat capabilities.

"It signifies strengthening of the growing strategic ties between India and France," Modi said. The Scorpene's are being built by the Mazagaon Dockyard Ltd (MDL) here under Project 75 with transfer of technology from a foreign collaborator - DCNS of France.

He said the INS Kalvari will provide a significant boost and synergise the country's defence, economic, technical and international powers, along with people power on the global arena.

It will play a crucial role in India's security and regional stability, he added.

Modi said India was fully alert with regard to its global, strategic and economic interests in the Indian Ocean.



*Fri, 15 Dec, 2017*

## PM commissions submarine Kalvari

Prime Minister Narendra Modi on Thursday commissioned the first Scorpene class submarine Kalvari into the Indian Navy, saying it was an excellent example of the government's 'Make in India' initiative and a "big step" in the country's defence preparedness.

Modi boarded the submarine and unveiled its plaque, after meeting veterans of the first Kalvari who were present at the commissioning ceremony. He said the last three years (of BJP rule) have seen a "beginning of change" in defence and security-linked ecosystem. "Countries now want to be with India on the road of

peace and stability. A strong India has an important role for entire humanity, he said at the commissioning ceremony of the submarine at the Naval dockyard here. "Kalvari is an excellent example of our 'Make in India' programme," he said. Navy chief Admiral Sunil Lanba, National Security Adviser Ajit Doval and French Ambassador to India Alexandre Ziegler were among those present at the ceremony.

Modi thanked France for this 'strategic joint project' and described the commissioning of the submarine as a "matter of pride" for 125 crore Indians.

"It is a matter of pride for me to commission this submarine. Kalvari's induction in the Navy is a big step in defence preparedness," Modi said.

Kalvari is named after the dreaded tiger shark, a deadly deep sea predator of the Indian Ocean. "The power of Kalvari, that of a tiger shark, will strengthen our Navy," the prime minister said.

He said India has always been the first responder in times of crisis for neighbours, be it floods, water shortage or cyclones, in Sri Lanka, Maldives or Bangladesh.

During the Nepal earthquake, Indian Navy and Air Force rendered major assistance, he noted. The prime minister said India has made its contribution in tackling challenges like piracy, drug smuggling or illegal fishing.

"The effect of security policies of our government is seen not only on the external but also the internal security. You all know how terrorism has been used for a proxy war against India," he said.

## पंजाब केसरी

Fri, 15 Dec, 2017

# कलवरी पनडुब्बी को मोदी ने किया नौसेना में शामिल

मुंबई, (हंसराज कनौजिया): प्रधानमंत्री नरेंद्र मोदी ने आज स्कॉपीन श्रेणी की छह पनडुब्बियों की श्रृंखला की पहली पनडुब्बी आईएनएस कलवरी को भारतीय नौसेना में शामिल किया और इसे देश की रक्षा तैयारी में एक बड़े कदम बताया। इस अवसर पर आयोजित जलावतरण समारोह में कलवरी पनडुब्बी के वरिष्ठ नौसेन्य कर्मी मौजूद थे। उनसे मिलने के बाद मोदी पनडुब्बी में चढ़े और उसकी पट्टिका का अनावरण किया।

आज सुबह आयोजित इस समारोह में मोदी ने कहा कलवरी मेक इन इंडिया का एक शानदार उदाहरण है। कलवरी को नौसेना में शामिल करने के लिए आयोजित समारोह में नौसेना प्रमुख एडमिरल सुनील लांबा, राष्ट्रीय सुरक्षा सलाहकार अजीत डोभाल और भारत में फ्रांस के राजदूत एलेग्जेंडर जिगलेर सहित अन्य गणमान्य अतिथि मौजूद थे। इस रणनीतिक संयुक्त परियोजना के लिए मोदी ने



मुंबई में प्रधानमंत्री नरेंद्र मोदी कलवरी पनडुब्बी को नौसेना में शामिल करने के अवसर पर उसकी पट्टिका का अनावरण करते हुए।

फ्रांस को धन्यवाद दिया। उन्होंने कहा कि इस पनडुब्बी का जलावतरण 125 करोड़ भारतीयों के लिए गर्व का विषय है। उन्होंने कहा इस पनडुब्बी का जलावतरण करना मेरे लिए गर्व की बात है।

नौसेना में कलवरी को शामिल करना रक्षा क्षेत्र में तैयारी का बड़े कदम है। इस पनडुब्बी का नाम हिंद महासागर में गहरे पानी में पाई जाने

वाली खतरनाक टाइगर शार्क पर कलवरी रखा गया है। उन्होंने कहा कलवरी की ताकत टाइगर शार्क की तरह है और यह हमारी नौसेना की शक्ति बढ़ेगी। प्रधानमंत्री ने कहा कि भारत पड़ोसी देशों के लिए संकट के समय में प्रतिक्रिया देने में सबसे आगे रहता आया है, चाहे यह संकट श्रीलंका, मालदीव या बांग्लादेश में बाढ़ का हो, पानी की कमी हो या

चक्रवात हो। उन्होंने कहा कि नेपाल में भूकंप के दौरान भारतीय नौसेना और वायु सेना ने बहुत बड़ी सहायता पहुंचाई। मोदी ने अपनी सरकार के मूल मंत्र सबका साथ सबका विकास का जिक्र किया। साथ ही उन्होंने आतंकवाद तथा नक्सली खतरे से सफलतापूर्वक मुकाबले के बारे में भी बताया।

उन्होंने कहा इस साल अब तक कश्मीर में पुलिस और सुरक्षा बलों के हाथों करीब 200 आतंकवादी मारे जा चुके हैं। पथराव करने की घटनाओं में भी वहां कमी आई है। प्रधानमंत्री ने कहा नक्सली हिंसा में भी कमी आई है।

इससे पता चलता है कि लोग विकास के रास्ते पर आ रहे हैं। रक्षा मंत्री निर्मला सीतारमण ने कहा कि पनडुब्बी निर्माण एक आधुनिक एवं कौशलपूर्ण कार्य है और कुछ ही देशों के पास इसकी औद्योगिक क्षमता है। उन्होंने कहा भारत ने पिछले 25 साल से पनडुब्बी निर्माण में अपनी क्षमता साबित की है।

## हिंद महासागर की रक्षा करेगी पनडुब्बी कलवरी नेवी में हुई शामिल, पीएम ने कहा- टाइगर शार्क

■ विशेष संवाददाता, नई दिल्ली

प्रधानमंत्री नरेंद्र मोदी ने गुरुवार को मेक इन इंडिया के तहत बनी पहली पनडुब्बी कलवरी को नौसेना में शामिल किया। हिंद महासागर में चीन की सैन्य गतिविधियों के बीच मोदी ने कहा, 'हम हिंद महासागर में अपने हितों को लेकर पूरी तरह सजग हैं। यह देश की रक्षा तैयारी में एक बड़ा कदम है।' वहीं रक्षा मंत्री निर्मला सीतारमण ने कहा कि ग्लोबल ट्रेड की लाइफलाइन हिंद महासागर की सुरक्षा आईएनएस कलवरी से बेहतर ढंग से सुनिश्चित हो सकेगी।

कलवरी को गहरे पानी में 120 दिन तक गहन समुद्री टेस्ट के बाद नौसेना में शामिल किया गया। इसको शामिल किए जाने से पहले इसके सभी हथियारों को टेस्ट कर लिया गया। दुश्मन की नजरों से बचने की एक्स्ट्रा क्षमता वाली यह पनडुब्बी समंदर में बेहद खामोशी से अपना काम करती है। फ्रांस की मदद से बनाई गई इस पनडुब्बी का नाम हिंद महासागर में पाई जाने वाली टाइगर शार्क के नाम पर रखा गया है। इस टाइगर शार्क को मलयालम में कलवरी कहते हैं। मोदी ने कहा, 'कलवरी की ताकत टाइगर शार्क की तरह है और यह हमारी नौसेना की शक्ति बढ़ाएगी।' यह पनडुब्बी EXOCET मिसाइल और SUT टोरपीडो से लैस होगी। खास बात यह है कि इसे शामिल किए जाने से पहले इसके सभी हथियारों को टेस्ट कर लिया गया है। दुश्मन की नजरों से बचने की एक्स्ट्रा क्षमता वाली यह पनडुब्बी समंदर में बेहद खामोशी से अपना काम करती है।

दरअसल मेक इन इंडिया के प्रोजेक्ट -75 के तहत फ्रांस के सहयोग से स्कॉपीन क्लास की छह पनडुब्बियों का प्रोजेक्ट चल रहा है। पहली कलवरी है, जबकि दूसरी पनडुब्बी खंदेशरी का ट्रायल चल



### कलवरी का दम

- पहली भारत में बनी स्कॉपीन पनडुब्बी
- 67.5 मीटर लंबाई, 12.3 मी. ऊंचाई
- 18 टॉरपीडो ले जा सकती है एक बार में
- 1,020 किमी. लगातार चल सकती है
- 300 मीटर की गहराई तक जाने में सक्षम

### नौसेना की बढ़ती ताकत

- 17 साल के बाद शामिल हुई कोई पनडुब्बी
- 1967 में मिली थी पहली पनडुब्बी
- 14 पनडुब्बियों के बावजूद 18 की जरूरत
- 1999 में देश में पनडुब्बी बनाने का फैसला
- 6 पनडुब्बियां बनेंगी फ्रांस के सहयोग से



रहा है, जबकि तीसरी पनडुब्बी करंज को जल्द पानी में उतारा जाएगा। अनुमान है कि सभी पनडुब्बियां 2020 तक नौसेना में शामिल होंगी। इस प्रोजेक्ट में फ्रांस की तकनीक का ट्रांसफर भी होगा। देश में पनडुब्बियां बनाने का प्लान 1999 में तैयार किया गया था। इसके तहत 30 साल का रोडमैप तैयार किया गया था, जिसके तहत 2029 तक 24 पनडुब्बियां बनाने की योजना थी। प्रोजेक्ट 75 के

बाद प्रोजेक्ट 75 (इंडिया) में रणनीतिक भागीदारी मॉडल के तहत भारत में 6 पनडुब्बियां बनेंगी। पिछले साल विदेशी मीडिया में रपटें आई थीं कि स्कॉपीन क्लास की पनडुब्बियों का डेटा लीक हो गया है। तब करीब 23 हजार करोड़ रुपये के प्रोजेक्ट पर सवालिया निशान खड़े हो गए थे। लेकिन इस डेटा को 2008 से पहले का मानते हुए चिंताओं को भारत में सुरक्षा एजेंसियों ने खारिज कर दिया था।