

Naval Review

WE DELIVER POWER AT SEA

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Welders trained to
the highest standards

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A unique expertise

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**GENDER DIVERSITY
IN THE ARMED FORCES**

Serving operational performance



Two milestones achieved... in one day! It was a remarkable double industrial achievement that was celebrated at the end of November in Brazil, at the Itaguaí naval base, as part of the program to deliver four Scorpène® class submarines to the Brazilian Navy. *Tanelero*, the third submarine in the series, was delivered, while the fourth unit, *Almirante Karam*, was launched. This represents another step towards strengthening Brazil's maritime sovereignty, as the country joins the select group of nations equipped with a modern submarine force. We are proud and honoured to contribute to this achievement with the Scorpène® submarine, which has established itself as a benchmark on the international conventional submarine market.

No. 4

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PIERRE ÉRIC POMMELLET
Chairman and Chief Executive Officer of Naval Group

Dear readers,

2026 marks a remarkable milestone: the 400th anniversary of the French Navy. On this historic occasion, Naval Group is proud to stand alongside the French Navy in celebrating four centuries of maritime history and in reaffirming the values we share: service to France, dedication to the sea and the enduring spirit of the crew.

For 400 years, Naval Group has continued to innovate to serve sailors protecting their country, and, for 400 years, supporting their mission has been our main purpose. Across our sites and onboard ships, our teams are fully committed, working every day to provide the Navy with the capabilities it needs.

Together, let us wish the French Navy a very happy anniversary!]

 Discover the events celebrating the 400th anniversary of the French Navy.



Trends

in action

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PROGRAMS

Challenges met, course set

IN 2025, NAVAL GROUP DELIVERED FOR ITS CUSTOMERS, EXECUTED ITS PROGRAMS AND ACHIEVED SIGNIFICANT EXPORT SUCCESSES. BUILDING ON THIS 2025 REPORT, THE GROUP IS ENTERING 2026 HARD AT WORK, WITH CLEAR OBJECTIVES AHEAD.

ALONGSIDE OUR CUSTOMERS

In 2025, thanks to the commitment of our teams, partners and suppliers fully engaged in working with us, we have delivered on programs across all our areas of activity. Read on for an overview of the milestones and deliveries of recent months.

SUBMARINES:

- the nuclear attack submarine (SSN) *Tourville* entered active service, the SSN *De Grasse* was transferred to its launching facility, and its delivery and commissioning ceremony for trials was held in Cherbourg;
- the final driving unit module for the sixth unit of the Barracuda program has been completed;
- the Fleet Support Service (SSF) has renewed its confidence in us for SSN maintenance for four years with the SNA25 contract;
- the nuclear ballistic missile submarine (SSBN) *Le Vigilant* crossed the harbour of Brest to return to Île Longue, a major milestone in its full cycle docking (FCD);
- the subsection production line for the SSNB 3G program has been launched in Cherbourg;
- *Vagsheer*, the sixth Indian Scorpène® submarine of the Kalvari class, built in India with our industrial partner Mazagon Dock Shipbuilders Limited (MDL), entered service;
- the contract for the delivery of two Scorpène® Evolved submarines, which will be built in Indonesia at PT PAL, came into force;
- the third Brazilian Scorpène® was delivered, and the fourth was launched at the Brazilian shipyard of Itaguaí Construções Navais (ICN).

SURFACE SHIPS:

- launch of the new-generation aircraft carrier (PA-NG) by the President of the French Republic;
- delivery of the first French defence and intervention frigate (FDI), *Amiral Ronarc'h*, as well as that of the first Greek FDI *Kimon* to the Greek Navy;
- notification of an additional FDI (HN4) by the Greek Navy;
- delivery of the second replenishment vessel (BRF), *Jacques Stoskopf*, to the French Navy;
- technical stop of the aircraft carrier *Charles de Gaulle*;
- first sea trials of the Belgian/Dutch minehunter *Vlissingen*, recently delivered to the Dutch Navy, and delivery of *Oostende* to the Belgian Navy in Zeebrugge;
- launch of the second Littoral Combat Ship (LCS) of the Gowind® family for the Malaysian Navy.

DRONES, AUTONOMOUS SYSTEMS, UNDERWATER WEAPONS AND EQUIPMENT:

- acquisition of Accuwatt Technologies to strengthen our expertise in key technological barriers for drones, autonomous systems and underwater weapons;
- significant operational milestones achieved in underwater weapons (test firings and deliveries) for international customers;
- achievement of the "ready to fire" milestone for the multipurpose modular launcher (MPLS), followed in early 2026 by the successful completion of the first firing campaign.

Our teams were also deployed in the field to support navies during numerous trials and exercises:

- the Baltic Sentry exercise, an intelligence, surveillance and reconnaissance mission. This marked the first use of Seaquest® S in a realistic allied Intelligence, Surveillance and Reconnaissance (ISR) exercise;
- the REPMUS 2025 exercise, an anti-submarine warfare mission conducted in cooperation with Sirehna and Naval Group Belgium, using Seaquest® S, Steeris® and Cormorant;
- the Wildfire exercise, dedicated to counter-drone operations.

From a commercial perspective, we achieved major international successes, notably in Greece, Indonesia and Brazil.

The beginning of 2026 has also been marked by a renewed acceleration of our programs, particularly in France, in line with the military programming law (LPM). The order intake in recent months has already translated into work for companies working on our naval programs across France and throughout its territories.

This defence effort places significant responsibility on industry players such as Naval Group. We must rise to the occasion to meet the needs and challenges of our armed forces, while continuing to push the boundaries of innovation and boldness in developing the solutions required to maintain their operational superiority.

INNOVATING AND INVESTING FOR THE FUTURE

To prepare for the future and meet the growing operational needs of its customers, the company is transforming and accelerating to:

- **maintain the highest standards in occupational health and safety (OHS), with the objective of zero accidents.** The health and safety of our employees and subcontractors is an absolute priority, and we are committed to continuous progress on this essential issue. In 2025, thanks to the commitment of everyone involved and to the implementation of collective initiatives, accidents with lost time fell by 40%. In 2026, we will further strengthen the development of a safety culture throughout the group;
- **modernise our industrial facilities in order to improve performance and remain competitive and innovative.** In order to meet the demand from our customers, we have launched a major investment cycle across all our sites:
 - composites plant and the construction of the SSBN 3G hall in Lorient;
 - the construction of two new halls in Cherbourg, one of which will be dedicated to international submarines;
 - new buildings in Nantes-Indret to accommodate the production of reactor plants and motorised devices for the SSBN 3G and PA-NG programs;
 - a new facility for combat systems in Ollioules;
 - the construction of a new hall on the site of the Point du Jour keel block line in Brest;
 - a new submarine integration hall in Angoulême-Ruelle;
 - the future centre of excellence for drones, autonomous systems and underwater weapons in La Londe-les-Maures.

More than ever, 2026 reflects the mobilisation of our collective energy, alongside all our partners, to design and deliver exceptional systems and to ensure the operational superiority of our customers: the navies that protect their nations.

- ▶ - **Products tailored to the specific needs of each navy** and to the rapidly evolving nature of naval warfare, such as our range of drones and the MPLS;
- **Preserve and perpetuate our sovereign expertise.** To design and produce its large-scale naval programs, both current and future, the group has carried out more than 4,500 recruitments over the past three years. In 2026, more than 2,000 additional hires will be made across all group sites (1,200 permanent and fixed-term positions, and nearly 900 apprentices and interns);
- **accelerate innovation**, particularly by fostering partnerships and collaborations. Naval Group has therefore recently acquired a stake in cortAlx France, Thales' artificial intelligence accelerator dedicated to critical systems, and has joined its governance structure (*see our article on page 33*). We have also developed the combat system of the future, presented at the latest edition of Naval Innovation Days in September 2025. We are also strengthening our innovation efforts in the field of drones, a strategic sector for future development.

We deliver power at sea: in an increasingly complex international environment, our purpose has never been more relevant. More than ever, 2026 reflects the mobilisation of our collective energy, alongside all our partners, to design and deliver exceptional systems and to ensure the operational superiority of our customers: the navies that protect their nations.



SILENT SOVEREIGNTY

A DIVE INTO CHILE'S SCORPÈNE® SUBMARINES

TWENTY YEARS AGO, CHILE MADE A DECISION THAT WOULD SHAPE ITS NAVAL CAPABILITIES FOR MORE THAN A GENERATION. FACED WITH THE NEED TO REPLACE ITS AGEING OBERON-CLASS SUBMARINES AND OPERATE IN AN INCREASINGLY COMPLEX MARITIME ENVIRONMENT, CHILE'S ARMADA LAUNCHED A MAJOR INTERNATIONAL COMPETITION. MANY CANDIDATES CAME FORWARD, BUT ONE STOOD OUT. IN 1997, CHILE SIGNED A CONTRACT FOR TWO SUBMARINES.

The Scorpène®, designed by Naval Group, best met the operational requirements of the Chilean Navy: stealth, endurance, advanced detection capabilities and striking power. It offered an ocean-going platform capable of countering modern surface ships, hostile submarines and sophisticated maritime surveillance aircraft.

The key point is that Chile's unique geography requires a submarine force unlike any other. Stretching more than 4,000 kilometres along the Pacific, Chile's coastline is one of the longest and most difficult to protect in the world. Its maritime domain covers more than 3.5 million square kilometres of exclusive economic zone, a vast space where sovereignty, national security and vital economic resources converge. From Arica to the southernmost reaches of Cape Horn and beyond, Chile maintains constant vigilance. Today, Scorpène®-class submarines, such as *General O'Higgins* and *General Carrera*, remain the most advanced conventionally powered submarines in service in Latin America. Their hydrodynamic hull, inspired by the design of French nuclear attack submarines (SSN), combined with a high level of automation and outstanding acoustic discretion, allows them to remain virtually undetectable. Equipped with powerful sensors, the integrated Subtics® (Submarine Tactical Integrated

Combat System), coupled with a permanent-magnet electric motor providing exceptional stealth and manoeuvrability, delivers outstanding detection capabilities and decisive strike power at a safe distance. The capacity of the Scorpène® to remain undetected for weeks at a time provides Chile with a decisive advantage in strategic deterrence and the protection of its sovereignty.

When Chile selected the Scorpène®, the country was ahead of a broader global trend. In the years that followed, other major navies – including those of Malaysia, Brazil, India, and more recently Indonesia – also chose the Scorpène® for their fleets. Twenty years later, the Scorpène® has become a global benchmark in conventional submarine design and stands as a testament to Chile's strategic foresight.]



“ THE SCORPÈNE® DOES NOT AGE – IT EVOLVES. ”



CRISTIÁN FIGARI

First Commanding Officer of *General O'Higgins*.

Twenty years later, Naval Group continues to work closely with the Chilean Armada. What began with the delivery of the first submarines has developed into a strong industrial partnership, which today includes the mid-life refit of the Scorpène® and the modernisation of its systems and capabilities. What's more, the story is far from over. For an inside look into this adventure, we spoke with the First Commanding Officer of *General O'Higgins*, Cristián Figari.

When did Chile begin considering the renewal of its submarine fleet?

The idea of replacing the Navy's submarine fleet began to take shape in the late 1980s, when I was a lieutenant in the Chilean submarine force. Seventeen years passed from that initial idea to the arrival of *General O'Higgins* in Chile, following its departure from Cherbourg. A project of this scale and importance demands meticulous planning and preparation. Among the many options available at the time, Chile ultimately chose the French Scorpène® solution.

What convinced Chile?

Several factors quickly allowed the Scorpène® to stand out. The first was France's complete independence in submarine design and construction, which was a crucial consideration for Chile. For a navy that thinks in the long term, that level of sovereignty is a major advantage. The second factor was the design itself. Naval Group was offering what Chile

regarded as a top-tier new-generation submarine, designed for 21st-century operations and based on the latest technologies.

Are the challenges Chile faces today different from those of twenty years ago?

In terms of how submarines are used, not really. The fundamental purposes of submarine operations (decoying, invisibility and deterrence) are the same as they were twenty years ago. Chile also still has the same responsibility: safeguarding sovereignty along more than 4,000 kilometres of coastline. However, on a tactical level, things have evolved. Technological advances and changing threats have transformed the way submarines are employed. Thanks to the evolution of the Scorpène® platform and its onboard systems, Chile remains one step ahead of today's challenges, detecting and engaging more effectively, operating longer, faster, deeper and more quietly. Integrated command

Key milestones

- **1997:** Chile orders two Scorpène®-class submarines.
- **9 September 2005:** *General O'Higgins* is officially delivered to the Chilean Navy after successful sea trials.
- **July-December 2006:** delivery and commissioning of the second submarine, *General Carrera*.
- **Since then:** *O'Higgins* and *Carrera* form the Scorpène® fleet of the Chilean Navy, based in Talcahuano.

- and management systems that distribute information also make complex situations easier to assess, accelerating and simplifying the Commanding Officer's decision-making process.

A lot has happened over the past twenty years. What role has the Scorpène® played in international cooperation and exercises?

A lot has changed for Chile, and the Scorpène® has been central to those developments. For example, every two years the Chilean submarine force is invited to San Diego, California, to participate in high-level exercises designed to help the US Navy refine its strategies and strengthen its ability to counter the most advanced conventionally powered submarines. These are far from routine exercises: they involve the US Third Fleet, one of the largest operational commands of the US Navy, and give Chile a rare opportunity to measure itself against some of the most capable and experienced fleets in the world. The very fact that our Scorpène® submarines are consistently invited demonstrates their stealth, endurance and modern combat capabilities, making them both valuable adversaries and trusted partners during these multinational exercises. Over time, these deployments have built deep operational ties, reinforcing Chile's reputation for excellence and demonstrating that the Scorpène® remains highly relevant two decades after entering service. In many ways, the Scorpène® has become both a symbol of Chilean naval professionalism and a powerful asset for international cooperation – a platform the country can operate with confidence and credibility.

The Scorpène® has demonstrated a remarkable ability to remain “future-proof”. In your experience, what makes it so adaptable?

From the outset, the Scorpène® was designed to evolve. Its architecture is modular and offers significant growth potential, meaning that new sensors, combat systems or propulsion technologies can be integrated without altering the submarine's basic structure. This is why the Scorpène® remains so effective over time. The mid-life refit currently under way is the best example of this adaptability. Major systems, from the combat system to

hull-control technologies, are being upgraded. Very few conventionally powered submarines can accommodate such a process without major redesign work. In short, the Scorpène® does not age, it evolves.

From your experience at sea as the First Commanding Officer, what does it mean to serve on board a Scorpène®?

Life on board is defined by a remarkable and unprecedented level of automation and performance. Many systems operate almost entirely autonomously, allowing the crew size to be reduced while concentrating all essential functions within the operations centre. The Commanding Officer therefore has a real-time overview of both the platform and the tactical situation, enabling faster and better-informed decisions. This represented a major leap forward for both the Commanding Officer and the crew, reaching levels of performance and operational capability that had never been achieved before. It also created an exceptional level of trust within the crew. When you go to rest, you know that the person taking over has full control of the submarine. Beyond that trust, serving on such a platform is a unique experience that is demanding, intense and a genuine source of pride. As the submarine's First Commanding Officer, the main challenge was to instil in the crew the spirit of the *Libertador* Bernardo O'Higgins. That spirit ultimately became the driving force behind our efforts to make the Scorpène® the most advanced and capable submarine in the fleet.

FDI

Defence and intervention frigates

TOP-TIER CAPABILITIES X 2

The FDI is ready for high-intensity operations. Already delivered to two navies, it is designed to operate in all seas worldwide. As a multimission frigate, the FDI is both a flexible and independent tactical asset. It can operate alone against a wide range of threats or serve as a force aggregator within a naval task group. These qualities are becoming increasingly decisive in achieving success at sea, given the growing complexity of naval warfare, the acceleration of the operational tempo and the extremely rapid evolution of threats.

The FDI program has benefited from the group's investments to modernise its industrial sites, enabling us to double the production of frontline frigates at our shipyard in Lorient. Although ambitious, this challenge has been successfully met thanks to new technologies (computer-aided design and manufacturing, a paperless philosophy, augmented reality and digital twins), as well as innovative industrial processes (a production cadence designed to accelerate output, made possible by the compact design of the FDI, the parallel construction and testing of both the platform and the combat system, etc.). With the delivery of the first two FDIs, the program is now fully mature and ready to contribute to strengthening the naval capabilities of France and its allies, at a production rate of two frigates per year.

Producing a single FDI represents one million hours of work, in addition to one million hours dedicated to design and development. The program mobilises 1,200 Naval Group employees and 400 subcontractor companies.



One might think they were standing in an artist's studio overlooking the sea. And yet, we are on the first floor of the Legris building, on the Naval Group site in Cherbourg. Here, a traditional craft is passed down from generation to generation: the work of the lofting specialists.

Lofting Specialists

UNDERWATER WEAPONS: A CONCENTRATION OF TECHNOLOGY. INSIGHTS ON [PAGE 16](#). DOCK 8 IN BREST IS MUCH MORE THAN JUST A DRY DOCK... A DEEP DIVE [PAGE 21](#). LOFTING SPECIALISTS: A TRADITIONAL EXPERTISE TO DISCOVER [PAGE 26](#). CORTAIX: ARTIFICIAL INTELLIGENCE SERVING REAL-WORLD OPERATIONS [PAGE 33](#).

OPERATIONAL
EXCELLENCE

Underwater weapons serving naval superiority



Lionel,
Operational Maintenance Manager
for Small Arms, DGA



Jérôme Brocq,
Director of Heavy Weapons,
Naval Group



Yann,
Program Director
Artemis F21® France, DGA



Bertrand Gaillardin,
Director of Small Arms and
Anti-Torpedo Countermeasures,
Naval Group

IN A CHANGING AND COMPLEX MARITIME ENVIRONMENT, UNDERWATER WEAPONS ARE KEY CAPABILITIES. PACKING THE MOST ADVANCED TECHNOLOGIES INTO A COMPACT SPACE, THEY REPRESENT INDUSTRIAL EXCELLENCE IN THE SERVICE OF NAVAL STRATEGY. TOGETHER WITH THE FRENCH NAVY, THE FRENCH DEFENCE PROCUREMENT AGENCY (DGA) – THE PROJECT OWNER FOR DEFENCE PROGRAMS – AND ITS INDUSTRIAL PARTNERS, NAVAL GROUP HAS DEVELOPED PRODUCT RANGES DESIGNED TO ADDRESS BOTH CURRENT AND FUTURE THREATS.

With forty nations operating submarines, several hundred submarines are currently deployed across the world's seas and oceans. This growing level of underwater activity is further intensified by the increasing stealth of vessels and the rapid emergence of drones. "Actions are becoming harder and harder to distinguish, and intentions are less and less explicit, often revealed only at the last moment," explains Yann. Faced with this constantly evolving threat, underwater weapons provide nations with essential tools for controlling their maritime domains, and ultimately safeguarding their sovereignty. As a concentration of technology, modern torpedoes can now be launched tens of kilometres from their host platform, operating autonomously through acoustic guidance or fibre-optic guidance. Thanks to onboard intelligence, the underwater environment is continuously analysed to adjust the trajectory in real time without human intervention. Some torpedoes are therefore capable of evading defences or countermeasures deployed by adversaries. This approach keeps the human operator in the decision loop while greatly enhancing adaptability.

A HISTORIC EXPERTISE

The MU90 and the F21® are the two types of torpedoes operated by the French Navy. Originally developed as part of Franco-Italian cooperation, the MU90 is a lightweight torpedo deployed from surface ships and aircraft. The F21® heavy torpedo, meanwhile, equips submarines. Both torpedoes are produced, in whole or in part, by Naval Group at its Saint-Tropez site. More than a century of experience has made Naval Group's Drones, Autonomous Systems and Underwater Weapons Department a centre of excellence in the manufacture of torpedoes, torpedo countermeasures and underwater drones. "A torpedo concentrates the most advanced technologies mastered by the group and deployed across our naval programs in a compact format. Our systems

and equipment benefit from the most advanced technological building blocks available," explains Jérôme Brocq.

MU90: A HIGH-PERFORMANCE LIGHTWEIGHT TORPEDO

The MU90, a third-generation lightweight torpedo, was designed to neutralise both conventionally powered and nuclear-powered submarines. "The MU90 has successfully adapted to targets that are more numerous, smaller and more agile. Whether in terms of endurance or its ability to detect and engage its target, it remains a benchmark on the market," explains Bertrand Gaillardin. "The contracting of modernisation work and the launch of production of new torpedoes are scheduled for 2026, with a major challenge in restarting the production line," adds Lionel. ▶

MU90 : PERFORMANCE, ADAPTABILITY, MATURITY

The MU90 is a lightweight torpedo developed by the Franco-Italian European Economic Interest Grouping EuroTorp (WASS – Naval Group – Thales). Designed for submarine warfare, it can be launched from surface ships or air-dropped from aircraft and is compatible with a wide range of platforms. This is an important advantage for export. In France, it equips multi-mission frigates, Horizon-class frigates, defence and intervention frigates (FDI), as well as Atlantique 2 maritime patrol aircraft and Lynx and NH90 helicopters. It can operate both in deep waters (several hundred metres) and in shallow waters (less than 25 metres). The torpedo is equipped with a high-penetration shaped charge and a latest-generation mission software suite. As a "fire-and-forget"-type torpedo, the MU90 conducts its mission autonomously and is capable of reorienting itself and carrying out multiple attack runs. With more than 1,000 units produced, the MU90 is currently used by around ten navies and continues to attract strong interest from prospective customers. This year again, 62 units will be delivered to three navies.

- **Total length:** 2,850 mm
- **Diameter:** 323.7 mm
- **Weight:** 304 kg
- **Speed:** 30 to 50 knots
- **Operating depth:** 3 to ≥ 500 m
- **Range:** 12 km



KEY FACTS

2020

Entry into service of the F21® heavy torpedo onboard the SSN *Suffren*, part of the Barracuda program.

Saint-Tropez

It is on this site that exercise torpedoes are prepared and crews are trained.

► **F21®: AN ADAPTABLE AND COMBAT-PROVEN HEAVYWEIGHT TORPEDO**

Developed to equip the Barracuda-program nuclear attack submarines (SSNs), the F21® heavy torpedo entered service in 2020 aboard the *Suffren*. It has since been integrated across Suffren-class and Rubis-class SSNs, ballistic missile submarines (SSBNs) and Brazilian Navy *Scorpène*®-class submarines. Its mission: the neutralisation or destruction of underwater and surface targets, many of which are equipped with sophisticated detection systems and torpedo countermeasures. "The F21® was developed through an incremental approach that allows the integration of the latest technologies while maintaining the highest safety standards, essential for equipment deployed on nuclear-powered submarines," says Jérôme Brocq. "Its hunting capabilities, speed, discretion and long-range fibre-optic guidance make the F21® one of the most capable torpedoes on the market. The fact that it is 'French sea-proven' is a mark of confidence for foreign navies," adds Yann. A new version of the torpedo, known as the Mk2, is currently in the development and qualification phase.

CANTO®: A REVOLUTIONARY TORPEDO DEFENCE SYSTEM

Drawing on its expertise in torpedoes, Naval Group has developed Canto®, a torpedo countermeasure designed to protect submarines and surface ships from the most advanced torpedoes. Based on the principle of acoustic dilution and confusion, Canto® generates a powerful 360-degree acoustic signal covering the full range of frequencies used by enemy torpedoes. "Our expertise in underwater weapons has enabled us to develop the most effective solution to counter them," says Bertrand Gaillardin. More than 500 units have already been delivered to customer navies, with 600 additional units scheduled for delivery in the coming years.

MAINTENANCE AND TRAINING: A MULTIFACETED COLLABORATION

Naval Group is also responsible for the in-service support (ISS) of torpedoes and torpedo countermeasures, as well as for crew training. This work is carried out in close coordination with the DGA and, for ISS activities, with the French Joint Munitions Service (SIMu), which manages ammunition availability for the armed forces. "Torpedoes undergo a regular maintenance cycle. Close dialogue between all stakeholders is essential to manage this ISS effectively – the objective is to ensure torpedoes remain in perfect working condition while maintaining fleet availability," explains Lionel. At the Naval Group site in Saint-Tropez, exercise torpedoes are prepared and crews are trained in their operational use. "The advantage of torpedoes is that tests can be carried out without a warhead and the torpedo can be recovered afterwards. This generates extremely valuable feedback on the weapon's behaviour at sea," adds Yann.

PREPARING THE UNDERWATER WEAPONS OF TOMORROW

"Because an incremental approach enables innovation to be integrated more quickly, the DGA is already preparing the next evolution of the F21® as part of the defence technologies project (PTD). Discussions are currently under way, particularly around emerging technologies that could enhance both the acoustic head and the weapon's intelligence," says Yann. All this work is carried out in close collaboration with the French Navy in order to define future operational needs. Finally, to meet both current and future requirements from naval customers – particularly regarding the armament of light platforms such as naval drones and counter-drone warfare – Naval Group is conducting self-funded R&D on a range of very lightweight underwater weapons, with trials scheduled to take place later this year.]



F21® : RELIABILITY, INTELLIGENCE, SAFETY

Designed to replace the F17, the F21® is the heavy torpedo developed under the Artémis program, led by the DGA, to equip both conventional submarines and nuclear attack submarines (SSNs). Qualified on all classes of French submarines, the F21® has also been selected by the Brazilian Navy to equip its four *Scorpène*® submarines. During the launch phase, guidance is provided through passive fibre-optic wire guidance, enabling the torpedo to exchange large volumes of information with the submarine throughout its mission. If the wire is severed, the torpedo becomes fully autonomous, capable of resuming the course and operating depth initially programmed. Its onboard intelligence enables it to operate and manoeuvre in complex environments, including coastal waters, recognise decoys and adapt its speed to maximise impact power. With its high endurance, the torpedo can engage distant targets, redirect towards another target during a mission, and even attempt a second attack should the first fail. With more than 100 sea trials contributing to its development, the F21® has proven highly reliable. Now entering a mature phase, its incremental development ensures the F21® remains an evolving and upgradable torpedo.

- **Total length:** ± 6,000 mm
- **Diameter:** 533 mm
- **Weight:** < 1,500 kg
- **Speed:** ≤ 25 to ≥ 50 knots
- **Operating depth:** ≤ 10 m to ≥ 500 m
- **Range:** 50 km

“THE F21® HEAVY TORPEDO IS A KEY ELEMENT OF OUR MILITARY SUPERIORITY”

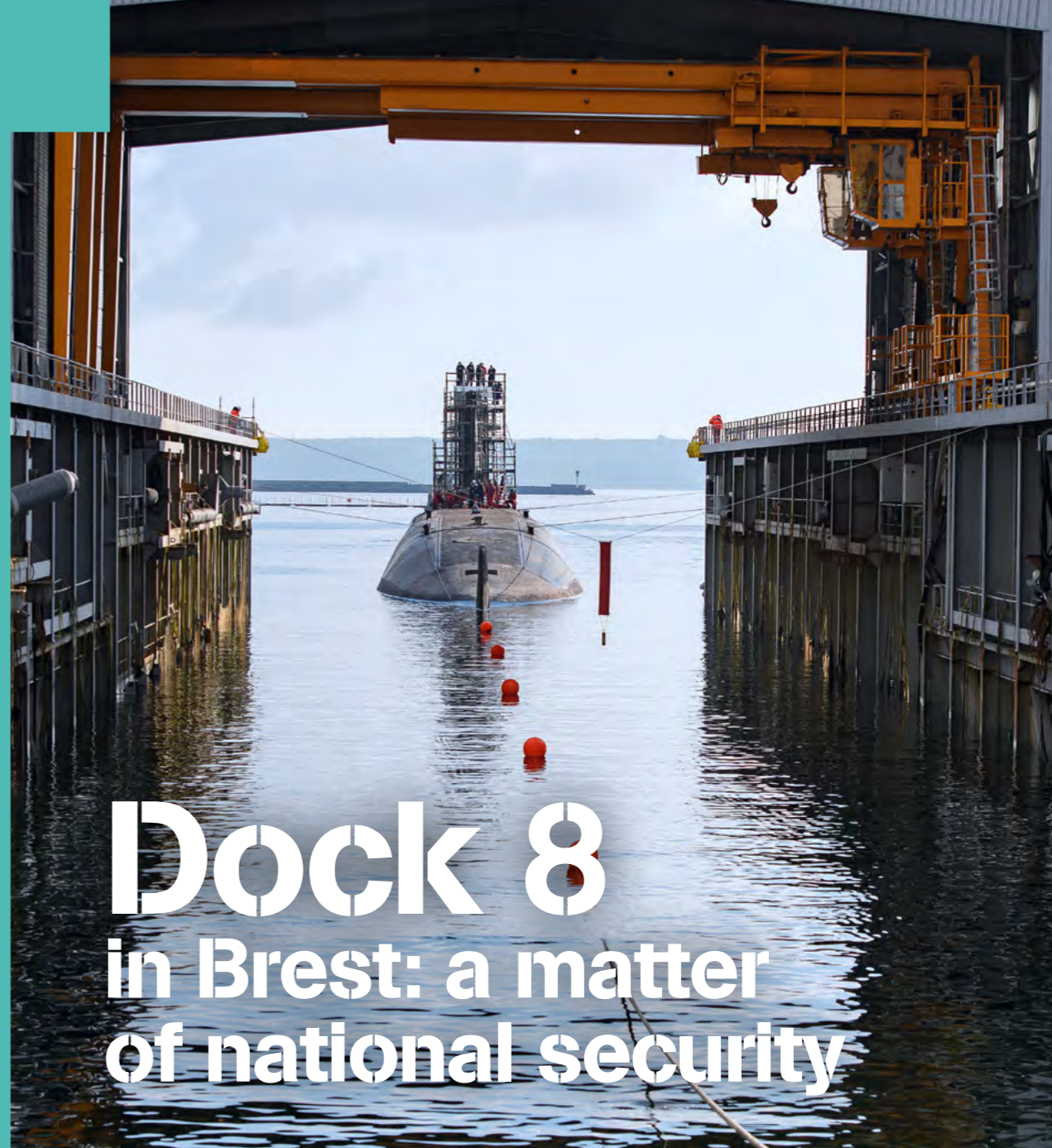


**AMIRAL
XAVIER PETIT**

Admiral acting as
Commanding Officer for
the French Strategic
Oceanic Force (ALFOST)

“In a highly unstable geopolitical environment, where countries are making extensive use of military force and where the international order is frequently challenged, the French armed forces are following the course set by the Chief of Defence Staff: preparing for a potential confrontation with Russia within the next three to four years. Russia has been clearly identified as an adversary, though it is not the only one France could face over a longer time horizon. This situation requires both short- and long-term strengthening of our military capabilities, particularly in the field of submarine warfare, an area that develops over decades and in which Russia has achieved a very high level of expertise. Despite Western sanctions and a major land commitment in Ukraine, Russia remains a formidable underwater power and continues to advance its capabilities, as illustrated recently by the test of the Poseidon nuclear underwater drone. In this context, maintaining the credibility of France’s nuclear deterrent is essential, and the effectiveness of submarine warfare directly determines the ability of our ballistic missile submarines (SSBNs) to carry out their mission. This requires us to remain at the highest level by acting on several fronts: mastering and integrating disruptive technologies (artificial intelligence, ‘dronisation’ and quantum sensors), ensuring complementarity between the assets of the French Navy and strengthening cooperation with our allies.

The objective is to remain credible in the eyes of potential adversaries: they must know that we have the capability to neutralise them, notably through the deployment of our underwater weapons. In December 2024, the successful exercise firing of an F21® heavy torpedo from an SSN against the hull of the patrol vessel *Premier Maître L’Her* sent a strong signal. A key element of our military superiority, the F21® demonstrated outstanding performance during its acceptance process, particularly in terms of firepower, stealth and range – the latter being twice that of the F17. The frequency and rigour of exercise firings at sea have confirmed its reliability. The long-standing and close collaboration between the French Navy, Naval Group and the DGA (together with the synergy built around the deployment of the F21® and its predecessors, and an incremental development approach) enables the weapon to be continuously improved and developed in step with evolving combat systems. The challenges ahead are clear. We must prepare future evolutions of the F21® to stay ahead of emerging threats, particularly by enhancing the sonar, while also increasing stock levels and further developing crews’ expertise with the weapon across the full range of operational environments and tactical scenarios. Finally, the growing importance of ‘dronisation’ requires continued reflection on the development of capabilities adapted to the increasing number of smaller and more agile targets.”



Dock 8 in Brest: a matter of national security

THE NAVAL GROUP BREST SITE, ALONGSIDE TOULON, IS ONE OF TWO FACILITIES DEDICATED TO THE IN-SERVICE SUPPORT (ISS) OF FRENCH NAVY VESSELS, NOTABLY BALLISTIC MISSILE SUBMARINES (SSBNs) AND FRONTLINE FRIGATES. THE BREST SITE THEREFORE POSSESSES CUTTING-EDGE EXPERTISE IN NUMEROUS DOMAINS AND IS EQUIPPED TO ADDRESS STRATEGIC SECURITY AND NATIONAL SOVEREIGNTY CHALLENGES.

With five frontline frigates, six tripartite mine-hunters, and four SSBNs to support, the Naval Group site of Brest plays a key role in helping the French Navy carry out its missions to protect and defend national interests around the world. At the naval base, technical overhauls are ongoing under the project management of the Fleet Support Service (SSF) and the execution management of Naval Group. The ISS of the four multimission frigates (FREMM) based in Brest, and more recently of *Amiral Ronarc'h*, the first Defence and Intervention Frigate (FDI), is a major priority: the availability of these frontline vessels is essential to safeguarding France's sovereignty, strategic and diplomatic credibility, and national security. Brest-based personnel are also required to intervene at short notice in ports around the world where ships call during deployments. Throughout the year, teams are therefore mobilised to guarantee the availability of the French Navy's vessels, both surface ships and submarines.

SUPPORTING THE STRATEGIC OCEAN FORCE

"In Brest, 70% of our activity is dedicated to supporting nuclear deterrence," explains Renaud Poyet, Site Director. At Île Longue and at the naval base, activity is structured around routine maintenance and Full Cycle Docking (FCD) for SSBNs. Lasting an average of thirty

months, these FCDs follow one another in sequence: each SSBN undergoes one FCD every ten years until it is withdrawn from active service. Given the scale and complexity of the work involved – roughly 4 million hours of labour per FCD – these technical stops pose major technical, industrial and human challenges, while also constituting a race against time to meet the operational schedule of the Strategic Oceanic Force. Depending on the stage and the nature of the work, operations take place either at Île Longue or in Dock 8 at the naval base. These infrastructures must maintain a high level of availability, safety and security in order to accommodate ships in accordance with their operational cycle. "The stakes are enormous because they concern nuclear deterrence, a cornerstone of France's strategic posture on the international stage and a guarantee of national security," explains Renaud Poyet.

ENSURING INFRASTRUCTURE AVAILABILITY

It is therefore no surprise that the Brest site has developed strong expertise in naval infrastructure, hosting a large share of engineering activities for the group's infrastructures. Also present in Toulon and Cherbourg, this activity plays a key role in the availability of the fleet by contributing to the safety, reliability and optimisation of nuclear and industrial facilities. Port

infrastructure (quays, dry docks), handling equipment, heavy-load transfer systems, energy and utilities production and distribution facilities, secret basic nuclear installations, and specialised tooling to support nuclear reactors: together they form a state-of-the-art industrial complex that must be constantly maintained, adapted to new generations of vessels and kept compliant with safety and security requirements, all under the project authority of the Atlantic Defence Infrastructure Department (SID). At Brest, Naval Group is notably responsible for installations engineering studies, maintenance and modernisation of Dock 8. Between FCDs, teams carry out preventive and corrective maintenance, modernisation and compliance monitoring of all installations. "Our mission is to ensure that the industrial facility is ready on time to receive the next SSBN. No disruption can be allowed in the maintenance cycle, because there is absolutely no flexibility in the operational schedule," stresses Renaud Poyet. Between the departure of the SSBN *Le Vigilant* from Dock 8 in July 2025 and the arrival of the next SSBN in 2027, Naval Group and the SID will work together for around eighteen months with the shared objective of ensuring that the basin and its facilities are ready to accommodate the most complex industrial object in the world.]

BREST IS ALSO:

- a centre of expertise for several strategic systems, including:
 - refrigeration systems (air conditioning and food storage refrigeration),
 - submarine atmosphere regeneration systems,
 - naval operational communication subsystems,
 - simulators and training platforms for crew training;
- a support base for overseas and international support programs;
- engineering and construction capabilities for new-build programs.

Brest in figures

3,300

employees working across the naval base, the operational base at Île Longue, and the tertiary hub to the north-east of the city.

300

professions.

125,000 m²

occupied on the naval base.

Dock 8

Built in 1910 and completed in 1916, it originally measured 250 metres long and 36 metres wide. After the Second World War, major works were required and the dock was extended. Today, it measures 303 metres.



“With the SID, our relationship is close, daily, based on trust and focused on a shared objective.”

RENAUD POYET, DIRECTOR OF THE NAVAL GROUP SITE OF BREST

“NAVAL GROUP IS A MAJOR PLAYER IN NUCLEAR INFRASTRUCTURE AND LAND-BASED SUPPORT FOR NAVAL DEFENCE”



Catherine Coublanc,
Head of the Technical
Engineering and
Infrastructure Expertise
Department, Brest

“The Infrastructure Engineering Department includes around 200 employees (engineers and technicians), including about forty specialists and around fifteen experts recognised at the Technical Department level, across the Naval Group sites in Toulon, Brest and Cherbourg. This department carries out studies for the design, modernisation and maintenance of the infrastructure required for the construction and upkeep of ships and submarines. In France, infrastructural projects mainly involve adapting sites and facilities to accommodate new generations of nuclear-powered vessels and to support ships currently in service. At Brest, for example, our key challenges concern the maintenance and modernisation of installations and equipment in Dock 8, the dock areas at Île Longue, and the SBNI facilities. For international customers, Naval Group’s offering generally includes an infrastructure component, providing solutions tailored to the specific needs of naval vessels while integrating local shipyards, naval bases and the country’s industrial ecosystem.

Within the Infrastructure Engineering Department, I am responsible for the Technical Engineering and Infrastructure Expertise Department. This entity brings together a broad range of disciplines, including civil engineering, mechanical engineering, secure handling, fluid systems, ventilation, electrical engineering, control and command systems,

automation, operational safety and logistical support. The capabilities we have developed in numerical simulation, particularly in fluid mechanics and electrical networks, allow us to model ‘ship-infrastructure’ systems. This makes it possible, for example, to visualise the increase in water temperature in a dock during a submarine steam trial, or to model an entire electrical network from onboard installations to the shore connection. Beyond supporting design work, these global models help reduce and control the risks associated with accommodating nuclear-powered vessels alongside or in dry dock.

Infrastructure engineering also manages seismic risk for the entire group. In this field, a senior expert together with a team of specialists and experienced structural engineers has developed advanced expertise in structural calculations, enabling simulation of the effects of an earthquake on a vessel resting on its keel blocks in the dock. Finally, we conduct numerous research, development and innovation projects to address emerging operational requirements for navies (development of digital twins, modular infrastructures, and support installations close to operational theatres), as well as other challenges including optimising infrastructure availability, strengthening resilience to climate-related threats, and supporting the energy transition.”



ROLAND BOUTIN

General Maritime Works
Engineer (IGTM),
Director of the Atlantic
Defence Infrastructure
Service (SID ATL)

As the project owner for the construction, renovation and maintenance of military infrastructure, SID ATL oversees operations carried out at the Brest-Lorient defence base. It has entrusted Naval Group with carrying out the maintenance work on Dock 8. A complex project, not without its difficulties, but one whose strategic stakes unite the teams. Read on to learn more in our interview with Roland Boutin.

What types of installations are found in Dock 8?

Dock 8 is one of the docks used for the maintenance of SSBNs; two others are located at the Île Longue operational base. Dedicated to FCDs, Dock 8 accommodates the SSBN, after its weapons and nuclear fuel have been removed, for a period of around eighteen months, before it returns to Île Longue for the third phase of the major technical stop. The dock includes a covered cradle system, lifting equipment including a 99-metre-high crane and overhead gantry cranes, a pumping station, electrical installations, specific facilities such as SBNI facilities for nuclear-related operations, a dock gate, as well as workshops and offices. It is a complex system of industrial-port installations that enables work to be carried out on the entire submarine while supplying the site with electricity and fluids.

What are the challenges related to dock in-service support (ISS)?

Since nuclear deterrence is the cornerstone of national security, ensuring the availability of Dock 8 so that the four SSBNs can be accommodated in rotation lies at the heart of France’s defence strategy. Because the ISS of the dock directly affects the FCD schedule, we must deliver on time, together with Naval Group and the other industrial partners supporting us. The countdown begins as soon as an SSBN leaves the dock: all maintenance and modernisation operations must be completed before the arrival of the next SSBN for its FCD roughly eighteen months later.

What type of work is carried out?

The work involves all trades related to industrial port facilities. Together with Naval Group, we have implemented a dynamic action plan for the maintenance and modernisation of installations. Some operations span several refit cycles, such as the upgrade of the covered cradle system. Other interventions include upgrading the secure overhead cranes, which are used for handling operations around the SSBN, as well as equipment in the pumping station and the dock gate. On this site, close attention

is paid to the reliability of electrical systems, which is essential for the smooth execution of the FCD and for fire risk control.

What modernisation work has been carried out?

The focus is on replacing or upgrading ageing or obsolete equipment. Cybersecurity, safety and resilience of the site’s industrial installations are central concerns. The cyber dimension is now fully integrated into our activities to ensure systems are robust against potential attacks. It is also necessary to adapt electrical distribution systems to meet the growing power requirements of industrial operations during FCDs.

Who are the main stakeholders involved in the project?

Naval Group acts as the prime contractor, working with numerous subcontractors: Marc SA for scaffolding and civil engineering, Cegelec for electricity, Lassarat for painting, etc. The construction of Dock 8 therefore has a very positive impact on the local industrial and economic fabric.

How is the work organised?

From project preparation to quality control, we work in close collaboration with Naval Group, whether in defining the tasks to be carried out or the means required to achieve them. Regular meetings take place with Naval Group teams and the Fleet Support Service (SSF), which is responsible for the facilities, in order to identify areas for improvement, highlight positive outcomes and refine our processes. This is a very complex project due to the scale of the work, nuclear safety constraints, strict scheduling requirements and the configuration of the site. Managing this complexity, particularly in terms of qualifications and organisation, is precisely what we expect from Naval Group. Things are not always easy, but difficulties are overcome through constant dialogue and a shared awareness of our contribution to the operational availability of SSBNs. We are satisfied with the mindset and the renewed working dynamic with Naval Group at Dock 8!

MEETING THE LOFTING SPECIALISTS IN CHERBOURG

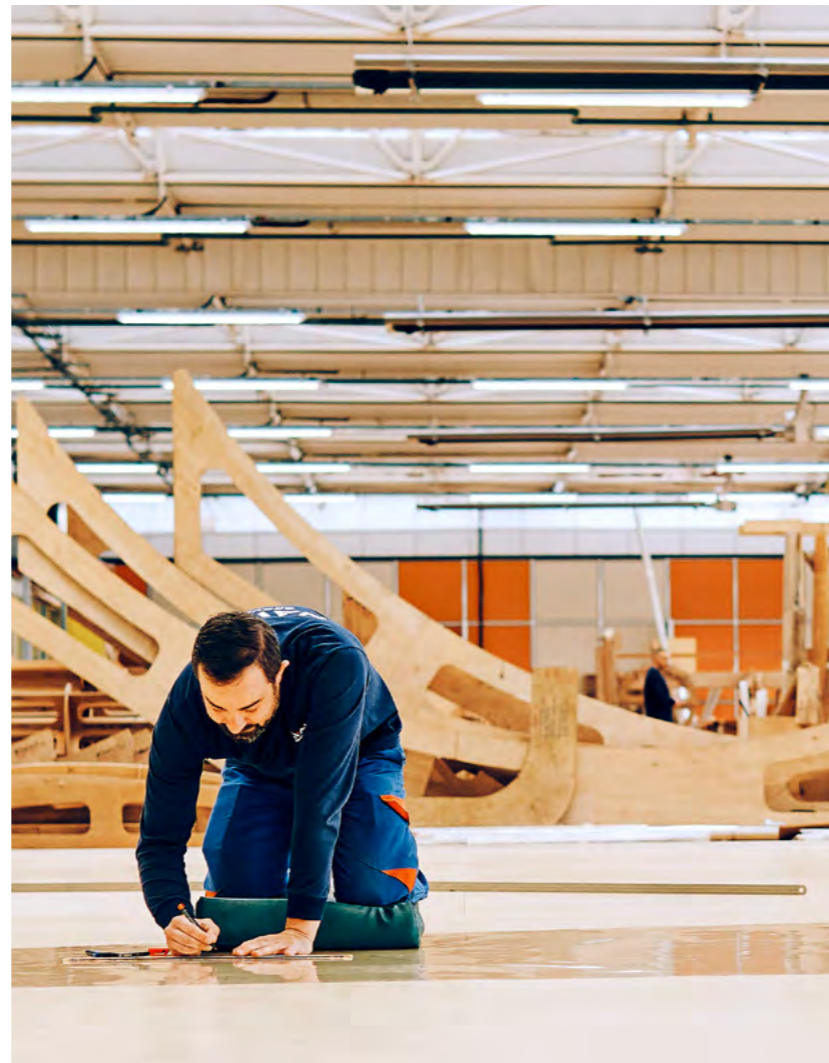
KEEPING THE ART OF LOFTING ALIVE

WE ARE IN CHERBOURG, ON THE FIRST FLOOR OF THE LEGRIS BUILDING. HERE, THE LOFTING TEAM PERPETUATES A TRADITIONAL CRAFT, ONE THAT REMAINS SURPRISINGLY LITTLE KNOWN. YET THE LOFTING SHOP HAS BEEN HERE FOR MANY YEARS... LET'S TAKE A CLOSER LOOK.



This photo report was produced in October 2025, before the deployment of the new personal protective equipment (PPE) standard, which came into force on 2 March 2026. Some employees depicted in these images do not therefore wear compliant clothing. The PPE standard now applies to all employees, as well as to customers, partners, suppliers and visitors.

The scent of wood fills the air, lending the room a calm, reassuring atmosphere. On the right, an initial model of a structure with massive, rounded forms, cut into small honeycomb-like cells, looks almost like a designer bookcase. Further on, templates, compasses (pinnules), rules and marking gauges lie waiting on the floor. Before the digital age, it was here that submarines first took shape, entirely drafted in wood. At the time, no less than forty lofting specialists worked here. Today, there are seventeen, along with two carpenters. Computer-aided design (CAD) has supplanted hand-drawn plans, but manual manufacturing remains. “We have kept both facets of the profession,” explains Maximilien Thomas, Head of the Methods and Production Engineering Department for hulls and structures. “We design and manufacture three-dimensional templates (weighing up to one tonne) and ‘blason’ templates (lighter and easier to handle) to help production teams with plate-forming operations and quality control. In addition, manufacturing full-scale models is extremely useful for validating certain design choices. We have just completed one that will also be used by our customer, the French Defence Procurement Agency (DGA), for training and evacuation exercises. Whether small or large, we are responsible for the entire design and manufacturing process for every piece we supply – a rather unique feature of our work, and one that I find fascinating,” he adds. No specific training program leads directly to the lofting specialist profession. Those who enter the field often have boilermaking backgrounds. They are not initially familiar with wood, cutting or chamfering machines, or carpentry tools. Over time, they must develop manual skills while also mastering CAD software. Achieving full autonomy as a lofting specialist requires five years of constant and patient mentoring, provided by the most experienced members of the team, whose expertise often exceeds ten years. Recruitment is currently under way to strengthen the team, driven by new programs for both France and international customers. In the meantime, the team must also be ready to handle unexpected situations. “After the fire onboard the nuclear attack submarine (SSN) *Perle*, we were asked to produce a model of an intermediate section to support the cable splicing operations required when joining the forward and aft sections of two SSNs,” explains Maximilien Thomas. Assignments range from a few hours to several months of work, which means the lofting team never lacks variety. As a result, downtime is rare among the lofting specialists, who share a remarkable team spirit across generations.]

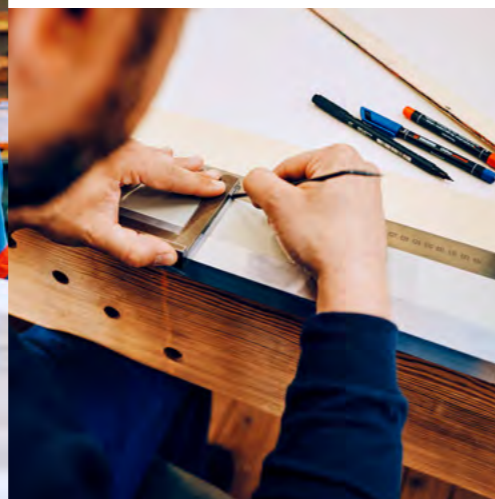


Manual craftsmanship, mathematics, and advanced software: the added value of Naval Group’s lofting team lies in its complete mastery of its templates, from design to manufacture.





Maximilien Thomas, Head of the Methods and Production Engineering Department for hulls and structures. In total, seventeen lofting specialists and two carpenters work daily in this workshop.



“OUR DISTINCTIVE STRENGTH AND ADDED VALUE LIE IN OUR COMPLETE CONTROL OVER OUR TEMPLATES FROM START TO FINISH.”

Rigour, precision, and patience... Nicolas Ridel, Hull Lofting Specialist since 2023, Clément Gosselin, Hull Lofting Specialist since 2008, and Anthony Castille, Hull Lofting Specialist since 2009, embody the qualities required to practise this profession.

What qualities are required to become a lofting specialist? What are the risks of losing this expertise?

Nicolas: Since 2006, when I joined Naval Group in Cherbourg as a plate former, I frequently went to the lofting room to collect templates. When I told them I wanted to join the team, they all said it would be difficult. According to them, the essential qualities were rigour and precision.

That proved to be true. During the two years I have been here, I have experienced some real moments of doubt and reassessment. But I have a very good mentor who trains me in computer-based design, production, and inspection of wooden templates. The most important thing is spatial awareness – being able to visualise the finished part. If the template is not compliant, the part produced from it will have to be scrapped. Being able to read both 2D and 3D plans, and having patience, precision and rigour, are also essential. In Cherbourg, our particular strength, and what makes us valuable, is that we control our templates from start to finish, and we are located directly on site. We handle both the design and the manufacture of these templates.

What is the role of the lofting specialist in the submarine manufacturing chain? At what stage do you intervene? Which other experts do you work with?

Clément: Lofting specialists intervene very early in the production chain, just after the designers and before the plate formers. Designers define a shape, a component, or a structure. The lofting specialists then take over, using the design models to produce the developments required for manufacturing the various parts, which also includes producing the templates and lighter 'blason' templates.

Once the design has been validated on the computer, we send the files (templates, lighter 'blason' templates, etc.) to the carpentry workshop, where a machine cuts them in 2D. We then assemble them in 3D. The plate formers use them to shape the metal plates and check their curvature. We also work directly with grinders, welders and machinists, always in support of production, which must never stop. Like a Swiss Army knife, we provide solutions to production. We can supply dimensions, design tools such as pipe templates, positioning templates for frames, specific grinding templates for bevels, and we can even perform laser marking operations....

Why use wood? What is the advantage of this time-honoured technique, despite all the modern technologies available?

Anthony: Wood is preferred because it is lighter and less expensive than steel. It also allows for greater flexibility when modifications are required. I am thinking in particular of the full-scale model of an entire compartment that we could not have modified if it had been made of steel. A wooden template may seem archaic, but there is currently no more effective method to control the final shape of a plate. Digital control by 3D scanning is far too time-consuming to be integrated into production and would significantly delay the process. Virtual reality can help visualise the architecture of a space, but how can you verify that a submariner will be able to exit a compartment quickly? Only the hands-on experience of a full-scale wooden model provides that level of control. Most of the time, we use plywood, which remains extremely stable over time and under varying climate conditions. We also work with oak, fir and beech. All wood offcuts are recycled into battens for assembling new templates.

How can a wooden model optimise the reactor of the future third-generation SSBN?

Last October, Naval Group and TechnicAtome, responsible for the design, construction, commissioning and in-service support (ISS) of the onboard nuclear reactors, carried out tests with representatives from the French Defence Procurement Agency (DGA) and the French Navy. The tests took place in a full-scale wooden model of a compartment from the future third-generation ballistic missile submarine (SSBN 3G), outfitted by TechnicAtome.

For Margaux Baechel, Human Factors Technical Lead on the program at TechnicAtome, "Putting future users in a full-scale mock-up is part of a user-centred design approach. It allows us to anticipate how they will work and to analyse the movements and postures they will adopt. If access is difficult, we can quickly test optimisation options with all participants." Jean-Loup Noël, Head of Reactor Room Outfitting for TechnicAtome, emphasises the complementarity with digital modelling: "Most options were already validated using computer-aided design (CAD). The wooden model confirms our choices and validates the interventions and operations planned for construction and operational use." The model also restores a sense of spatial volume, sometimes lost in simulations. For the sailors, it was a revelation to see the maturity of the studies through this model, more than ten years before the first third-generation SSBN enters active service.

From plans to volume: when 3D models become reality. Thanks to their perfect mastery of descriptive geometry and spatial projection skills, lofting specialists interpret the plans provided by the design office and bring them to life.

cortAlx

ACCELERATE AI

Thales and Naval Group, leading trusted AI actors, have pooled their AI capabilities within cortAlx France.

Together, the two groups aim to address the major challenges of integrating AI into critical defence systems. This new collaboration will accelerate the deployment of AI technologies and their adoption within armed forces, while ensuring algorithmic sovereignty and protection of sensitive data.

AI experts from Naval Group, particularly at the Digital Excellence Centre in Ollioules (Var), will join cortAlx France, bringing their naval-specific expertise.

As an AI accelerator, cortAlx aims to provide secure AI solutions for sensitive industries.



On 19 February, Éric Papin, Naval Group Technical Director, and Mickael Brossard, Vice-President of cortAlx, appeared on Frédéric Simottel's daily show *Tech & Co* on BFM Business to present cortAlx. The episode is available as a podcast.



Team spirit

WELDED LIKE NEVER BEFORE: THE INDONESIAN WELDERS TOOK PART IN AN INTENSIVE TRAINING COURSE IN CHERBOURG... FOLLOW THIS FASCINATING STORY [PAGE 36](#). THE NUCLEAR FIELD: UNIQUE EXPERTISE. SEVEN KEY WORDS THAT SAY IT ALL [PAGE 44](#). GENDER DIVERSITY: AN OPERATIONAL ASSET. READ THE PERSPECTIVE OF COLONEL CORINNE ROBILLART, SENIOR OFFICIAL FOR EQUAL RIGHTS AND GENDER DIVERSITY AT THE FRENCH MINISTRY FOR ARMED FORCES AND VETERANS [PAGE 50](#). DIVERSITY AND INCLUSION: NAVAL GROUP REAFFIRMS ITS COMMITMENT [PAGE 52](#).

Indonesian welders training at the Naval Group Welding Training Centre (CFS) on the Cherbourg site.

INDONESIA'S SCORPÈNE® EVOLVED

SET TO LAUNCH

NAVAL GROUP STRENGTHENS ITS STRATEGIC PRESENCE IN INDONESIA:
THE CONTRACT THAT ENTERED INTO FORCE ON 23 JULY 2025 PROVIDES
FOR THE CONSTRUCTION IN SURABAYA, BY THE INDONESIAN SHIPYARD PT PAL,
OF TWO SUBMARINES MEETING THE EXPECTATIONS OF THE INDONESIAN NAVY
IN FULL, THANKS TO A COMPREHENSIVE TRANSFER OF SKILLS.

With 17,000 islands, Indonesia's maritime space is one of the largest in the world, covering nearly 6 million km² of exclusive economic zone. In a context of growing threats, the country is seeking to strengthen both its sovereignty at sea and its industrial autonomy. Naval Group has responded with the Scorpène® for the Republic of Indonesia (SRI) program, dedicated to the construction of two Scorpène® Evolved submarines.

"By partnering with Naval Group in an ambitious skills transfer program, Indonesia aims to boost its local economy and strengthen the capabilities of its industrial ecosystem. The

agreement signed with PT PAL, an experienced shipyard, will turn these ambitions into reality," states Vincent Vimont, SRI Program Director.

A TESTED AND ADAPTED DESIGN

While making the most of a tried and tested design, the Indonesian Scorpène® Evolved features a number of innovations, including a new engine system and lithium-ion batteries. It also incorporates the Subtics® combat system.

A SMOOTH COLLABORATION

The agreement between the Indonesian Ministry of Defence and the Naval Group-PT PAL consortium ensures optimal collaboration. With a team of eight experts currently



The PT PAL shipyard in Indonesia, where the Scorpène® Evolved submarines for the SRI program will be built.

(rising to fifty), all acting as reference operators, Naval Group provides skills transfer and continuous technical support. To strengthen collaboration, French-Indonesian pairs have been formed. Learning the Indonesian language, *Bahasa Indonesia*, is also part of the French team's program, as linguistic proximity has already proven effective with other international partners.

In France, several Naval Group sites will contribute their specialised expertise: Cherbourg for the hull and platform; Lorient and Nantes-Indret for propulsion and lithium-ion batteries; Ollioules for the combat system; and Angoulême-Ruelle for masts, weapon launch systems and shaft lines. The future submarines will be built in Surabaya, with PT PAL responsible for the hull, equipment integration and testing, up to the handover of the vessels to the Indonesian Navy. The Indonesian shipyard will purchase the majority of the materials, but some specialised components will be supplied from France.

HULL AND WELDING: TOP-LEVEL REQUIREMENTS

When it comes to submarine hulls, the standards are extremely high. The future Indonesian Scorpène® submarines will use the same steel as French attack submarines. This steel requires special parameters, particularly for welding: there are numerous inspection stages, and acceptance criteria are extremely strict to achieve a

flawless weld. To meet the challenge, twenty Indonesians from PT PAL underwent two to three months of training in Cherbourg on welding, preheating and quality control, taught by the best experts in the field (see report on the following page).

This training aimed to enable the team to manufacture and qualify a first "pilot" hull sub-section. The start of fabrication for this qualification section was celebrated on 12 December 2025 in Surabaya.]

"By partnering with Naval Group in an ambitious skills transfer program, Indonesia aims to boost its local economy and strengthen the capabilities of its industrial ecosystem."

VINCENT VIMONT, SRI PROGRAM DIRECTOR.

FORGING TIES



INTERVIEW WITH **JUPRI**, WELDER AT PT PAL

“WELDING IS A UNIVERSAL LANGUAGE”

Jupri, 48, has been a welder at PT PAL for twenty-eight years. Together with his team, he left Indonesia at the end of summer 2025 for several weeks of training at the Naval Group Welding Training Centre in Cherbourg. We met him in October, a few weeks before his return to Surabaya to apply his new skills to the SRI program.

Jupri, could you describe your professional career?

I learned welding at PT PAL's training centre in Indonesia. Admission was highly selective and required excellent results. After graduating, I had the opportunity to train for a year in Japan and six months in South Korea. This allowed me to perfect my skills and learn new techniques. In 2025, as part of the SRI program, PT PAL selected the best welders from its teams for intensive training at the Naval Group site of Cherbourg in France. I volunteered immediately – it was an opportunity I couldn't miss. I'm delighted to have been selected!

How was your training?

We alternated between theoretical and practical sessions. With guidance from the trainers, we learned new welding techniques and how to use very high-tech equipment. At the Naval Group Welding Training Centre, the standards are extremely high. Clément (see page 40) helped us reach our full potential. The bar was set very high, and we managed to reach it. That gives us confidence: if we succeeded here in Cherbourg in meeting these standards, then out in the field, we will be able to rise to the challenge as well.

Did language barriers hinder your learning?

It may seem surprising, but no, this wasn't an issue. We were assisted by interpreters (see page 41) throughout our training. Welding is a universal language! We taught each other words along the way. The teams at Naval Group University (see page 42) had planned our training program down to the smallest detail. They even arranged visits to Paris and the Cité de la Mer in Cherbourg for us. Everything was organised to ensure our training took place under the best possible conditions.

What is your overall impression of the experience?

I am proud to apply my new skills to the SRI program and pass them on to my team in Indonesia. I look forward to the French team visiting Surabaya. In just a few weeks, we forged very strong ties. Every day was characterised by dedication, excellence and good humour. I hope I'll have the chance to attend the delivery of the first Scorpène® from the SRI program before I retire!

Bersama: “together” in Indonesian. Jupri, a welder at PT PAL, and Clément, a trainer at the Cherbourg Welding Training Centre, forged a strong bond over their weeks together.





THE PERSPECTIVE OF
CLÉMENT DUPUIS,
WELDING TRAINER

FROM CHERBOURG TO SURABAYA: SHARING EXPERTISE

In India, Brazil, and now Indonesia, Naval Group has developed a rare expertise: transferring critical skills to support the operational sovereignty of navies at sea. Welding is among these high-level specialities. The most advanced training school in the field is based in Cherbourg, the historic cradle of French submarines. Between September and November 2025, Clément Dupuis trained eight Indonesian welders in processes and techniques that require absolute precision. The goal: to provide them with the qualifications necessary to build the hull of the future Indonesian submarines – Scorpène® Evolved – locally, in Surabaya.

THE NAVAL GROUP STANDARD OF EXCELLENCE

As a master welder, Clément works with 80 HLES steel, a very high yield strength material already used in the French Suffren-class nuclear attack submarines. “A nuclear submarine,” he reminds us, “is essentially a power plant that descends hundreds of metres underwater. That means hull welding perfection is a prerequisite.”

MASTERY AND TRANSMISSION

Clément joined Naval Group in 2007 as part of a work-study contract and has worked since 2017 as an instructor at the Cherbourg Welding Training Centre (CFS). In this role, he guides trainees until every movement is perfectly mastered, going beyond technical skill: “We transmit a way of working, a culture of rigour unique to Naval Group.” At the heart of the training is a signature technique: shielded metal arc welding, a hallmark of Naval Group.

INDONESIAN WELDERS: A BESPOKE TRAINING PROGRAM

The training for the eight Indonesian welders from PT PAL, which ran from September to December 2025, was built around this specialised expertise. To bring them up to Naval Group’s standard of excellence, the CFS implemented a program tailored to their needs and to the requirements of the Scorpène® for the Republic of Indonesia (SRI) program,

which involves building two Scorpène® Evolved submarines at PT PAL’s shipyard in Surabaya, Indonesia.

The program features eight specially equipped workstations, with trainees working in 2x8 hour shifts to maximise hands-on time while respecting biological rhythms. Accurate monitoring makes it possible to measure progress and quickly correct deviations, while continuous inspections (visual and dimensional) ensure flawless quality.

Nothing is left to chance: every weld is observed, analysed, and reviewed, and every flaw becomes a learning opportunity. Through this close relationship between experts and trainees, the Indonesian welders gradually build trust and a true esprit de corps, grounded in discipline, mutual respect, and a shared determination to rise to the challenge.

PASSING THE TORCH TO INDONESIA

For the SRI program, the intensive Cherbourg training is a key step in a broader plan. Once back in Indonesia, the trainee welders become reference points for PT PAL’s local teams. Their mission: apply learned procedures and movements, support colleagues in skill development, and help them achieve autonomy. Over time, these mastered skills will give Indonesia a durable local industrial base, capable of supporting future naval or industrial projects.]



Fey Mokoginta,
Bahasa Indonesia Translator
and Interpreter

“My job entails ‘welding’ social bonds”

Fey Mokoginta, translator and interpreter, temporarily left her home in Dordogne to settle in Cherbourg for the duration of the Indonesian welders’ training. Her mission involved translating exchanges between welders and their trainers from one language to another to facilitate the smooth transfer of skills. Precision, speed and discretion are her guiding principles. “I’m both visible and invisible – kind of like a ninja! When you’re an interpreter, people only notice you if you do your job poorly. I was a bit nervous at first, but my apprehensions quickly disappeared. The Naval Group team in Cherbourg helped me learn all the technical terms, and the excellent atmosphere at the training centre made the assignment really enjoyable.”

Welding training: a key step

Skills transfer for submarine construction is one of the flagship components of the Scorpène® for the Republic of Indonesia (SRI) program. Led by Fabrice Leduc, its first stage focuses on the qualifying training of eight Indonesian welders in Cherbourg. A stage in which the involvement of Naval Group University, the entity responsible for designing and delivering training programs for Naval Group employees and customers, proved crucial.

Tasked with overseeing all operations related to skills transfer in France and Indonesia, where he will be based from mid-2026, Fabrice Leduc entrusted Naval Group University with the mission of designing and managing the training programs for twenty Indonesian PT PAL employees. What do they have in common? All will be involved in building a qualification structure and then the submarines themselves, in Indonesia. In total, four supervisor-inspectors, two hull and welding reference engineers, five preheating workers, and eight welders (plus their team leader) were hosted in Cherbourg between September and December 2025 to learn Naval Group's methods and procedures.

WELDING: A CORE SKILL

The first cohort of eight welders was trained at Naval Group's Welding Training Centre in Cherbourg, a choice driven both by the program schedule and Cherbourg's exceptionally high standards. In advance, Naval Group University and the program developed a bespoke training pathway, combining three key elements: professional expertise, Naval Group University's instructional design and lessons learned from previous export programs.

THEORY, PRACTICE AND SAFETY

"Organisation, coordination, expert involvement: Naval Group University met the SRI program's requirements by combining theoretical instruction with hands-on workshop practice," explains Géraldine Letellier, Export Training Coordinator.

The result? In addition to around ten days of theory covering materials, processes and technical instructions, the training offered intensive hands-on practice in cabins specially equipped for each trainee. The program aimed to qualify welders (who were already professionals in their field) on Naval Group's processes. "Safety is also an integral part of the program, with strict compliance to standards, personal protective equipment (PPE), individual and collective ventilation, and good practices," explains Géraldine.

COORDINATING, HOSTING, ENSURING SAFETY: A COLLECTIVE CHALLENGE

Beyond the technical content, Naval Group University had to manage a significant administrative component: the status of "employees seconded for training," legal requirements, and agreements with PT PAL. Furthermore, logistical considerations also needed to be managed: site access routes, document management,

daily monitoring of the trainees, and support for accommodation and transport choices made by PT PAL.

This first stage of training highlights the richness and complexity of the SRI program's skills-transfer component, which relies on a careful combination of technical expertise, rigorous management and daily human support. This dynamic will undoubtedly further strengthen professional and personal ties between the two countries.

SKILLS TRANSFER: A FULL-FLEDGED PROGRAM!

Nearly three months of training in Cherbourg: for the eight Indonesian welders hosted there, this immersion marked the very first stage of the skills-transfer

program for the design and construction of Indonesia's Scorpène® submarines.

The next phase will take place in Indonesia. Since early 2026, on-the-job training on a hull sub-assembly has been qualifying local teams so they can begin fabricating the first submarine's hull, with support from Naval Group experts. By mid-2026, production of the first submarine will begin, backed by the technical assistance team, which serves as an essential period of guidance and support. At the same time, an independent supervision team will ensure that all requirements are rigorously followed throughout the ships' construction and up to delivery, with Naval Group remaining the design authority and responsible for the submarines' performance.]

With around ten days of theoretical courses, plus countless hours of intensive hands-on practice alongside the best trainers, everything is designed to ensure the Indonesian welders leave with a top-level qualification.



WORDS FROM...

Nuclear expertise

NAVAL GROUP'S NUCLEAR ACTIVITY INCLUDES 2,000 EMPLOYEES WORKING ON ONBOARD NUCLEAR REACTORS AND ASSOCIATED NUCLEAR PROPULSION SYSTEMS. INVOLVED THROUGHOUT THE ENTIRE LIFE CYCLE OF VESSELS, FROM DESIGN TO DECONSTRUCTION, THESE TEAMS HAVE DEVELOPED UNIQUE EXPERTISE THAT THE GROUP IS DETERMINED TO PRESERVE AND DEVELOP.

SOVEREIGNTY

France has chosen to use nuclear power for its submarines and aircraft carriers because this energy provides unmatched autonomy at sea: it allows submarines to remain submerged for long periods and prevents aircraft carriers from needing frequent refuelling at sea. Combined with onboard nuclear weapons, the nuclear propulsion of aircraft carriers and ballistic missile submarines (SSBNs) gives these vessels absolute operational superiority over any country that does not master the technology. France is part of this exclusive circle and has maintained its nuclear deterrent posture continuously since the launch of the SSBN *Le Redoutable* in 1971. The expertise developed in nuclear technology allows the country to safeguard its sovereignty and defend its vital interests.



PROGRAMS

Naval Group manages the design, construction, in-service support (ISS), dismantling and deconstruction of nuclear-powered vessels. Programs involving our nuclear expertise span the long term: a generation of ships can last a century when the phases of design, construction, operation (nearly forty years), dismantling and deconstruction of each unit are added together. The group simultaneously carries out activities in each of these areas across different programs:

- Design of the third-generation SSBNs and the new-generation aircraft carrier (PA-NG)
- Construction of three Suffren-class nuclear attack submarines (SSNs);
- Maintenance of two Rubis-class SSNs, three Suffren-class SSNs, and four Le Triomphant-class SSBNs; preparation for the third major technical stop of the aircraft carrier *Charles de Gaulle*;
- Dismantling of Rubis-class SSNs and deconstruction of Le Redoutable-class SSNs.

[Head over to our website to learn more about Juliette, ISS Operations Director.](#)



Marc Francis,
SSBN 3G
Program
Manager at
TechnicAtomeme

Highly integrated and interfaced roles and responsibilities

“TechnicAtome brings its know-how as designer and prime contractor of onboard nuclear reactors to the SSBN 3G program. We are responsible for the design, construction, and commissioning of the reactors, as well as their maintenance until the submarines enter active service.

TechnicAtome is also integrated into the overall ship project management, working directly with Naval Group on program management, scheduling, risk management, quality and oversight, and ship-to-reactor interfaces. Our work is fully interlinked, and we produce joint deliverables for the joint project owners, the DGA and CEA. Architects from both groups collaborate to ensure a high level of interface integration, as do systems engineers, cybersecurity engineers and nuclear safety specialists. Each industrial partner contributes, within their scope, to the cybersecurity approval file and the preparation of safety files.

We also work closely on the main capabilities of the reactors, which Naval Group designs and builds at the Nantes-Indret site according to specifications provided by TechnicAtome.”



NUCLEAR SAFETY

How do we ensure the overall nuclear safety of our activities and products? Nuclear safety (NS) encompasses radiation protection as well as all technical and organisational measures taken to guarantee safety, prevent accidents, or limit their impact. Its requirements apply at every stage of a nuclear product's life cycle. Spread across the Brest, Lorient, Toulon, and Cherbourg sites, Naval Group's nuclear safety teams carry out safety studies ahead of operational and maintenance phases, both on ships and on naval base infrastructure. They then present their analyses to the state authorities responsible for issuing operating permits. Nuclear safety also relies on nuclear inspection, which aims to prevent any risk of incident on our products and sites, and to ensure our activities comply with the standards of the Nuclear Safety and Radiation Protection Authority and the Defence Nuclear Safety Authority. Inspection also helps maintain technical control (coordinating networks of experts) and preserves the wide range of skills required to uphold nuclear safety.

EXPERTISE

The expertise of our teams is the result of nearly seventy years of experience with successive generations of nuclear-powered vessels. It goes far beyond the design and maintenance of its reactors, covering architecture, safety, resistance to external hazards, materials, and the layout of operational zones. This expertise continues to grow over time, meeting the increasing requirements of new ships and evolving nuclear safety standards. Naval Group preserves the technological and human expertise developed for vessels built in the 1980s while also cultivating the skills needed for the ships of tomorrow.

INNOVATION

Naval Group works with TechnicAtome, Framatome and the French Alternative Energies and Atomic Energy Commission (CEA) on reactor components, onboard systems and functional architecture to enhance the nuclear safety of ships and improve reactor performance. Improvements can involve component design, materials, manufacturing and inspection processes, maintenance, or operational procedures. But innovation is not only technical. Since 2012, the group has supported research through a partnership with the Research in Safety, Organization, Humans (RESOH) teaching and research chair. The aim is to better understand the human and organisational aspects of high-risk activities and to draw valuable lessons.

Check out our "Dive into Tech" series and the episode on nuclear propulsion on our YouTube channel.

INFRASTRUCTURE

Exceptional infrastructure is required to build and test the various components of the reactor and nuclear propulsion system. With an operational capacity greater than its predecessor, the new-generation aircraft carrier (PA-NG) will be larger, and we are investing across all our sites to meet this challenge. The containment structures for its new reactors are manufactured at our Cherbourg site, which also builds nuclear submarines. The components of these ships' propulsion systems, including the reactor itself, are produced and assembled at the Nantes-Indret site. In addition, dedicated infrastructure is needed for the maintenance and decommissioning of nuclear reactors. Cherbourg, Toulon, Brest and Île Longue's secret basic nuclear installations (SBNI) include the tools and services necessary for the removal, storage and loading of fuel within the cores of the reactors. These facilities are subject to very strict regulations and regular inspections to ensure the safety of employees and nearby populations. Naval Group operates and helps maintain the SBNI to guarantee their availability.

Head over to our website to learn more about Estelle Joly, Chemical Technician at the Toulon SBNI.



► **CORPORATE APPEAL**

Naval Group runs numerous initiatives aimed at students to inspire young people to join the naval defence sector. In 2024 and 2025, events were held in Brest and Toulon to showcase and promote careers in nuclear technology through conferences, videos, virtual reality simulations, job fairs, and more. In addition, partnerships have been established with leading schools – such as the National Institute of Nuclear Science and Technology (INSTN) and Institut Mines-Télécom Atlantique – to support the recruitment of young engineers in the nuclear field. Several group employees teach in these programs, and some students are hosted on our sites for internships or final-year projects. Each year, Naval Group presents itself to students in the nuclear engineering program at INSTN, where it sponsors all three campuses (Saclay, Cadarache and Cherbourg) for 2025–2026. Last October, Pierre Éric Pommellet, Chairman & CEO of Naval Group, addressed the new cohort. The previous spring, he also spoke at the scientific days of the *École des applications militaires de l'énergie atomique* (EAMEA, or Atomic School). Finally, Naval Group is a member of the *Groupement des industriels français de l'énergie nucléaire* (GIFEN, or Group of French Nuclear Industry Professionals), which increases its visibility within the sector.



Check out our website for job opportunities.



“WE HAVE BUILT RELATIONSHIPS OF TRUST, THE RESULT OF A LONG HISTORY.”



FLORIAN

Project Manager, onboard nuclear reactors (CNE) for SSBN 3G at the French Alternative Energies and Atomic Energy Commission (CEA)

“As project owner and design authority for naval propulsion onboard nuclear reactors, the Military Applications Department of the French Alternative Energies and Atomic Energy Commission (CEA-DAM) oversees the design, development and delivery of nuclear reactors for French Navy vessels: SSBNs, SSNs and aircraft carriers. We rely primarily on two major industrial partners, TechnicAtome and Naval Group.

Our relationship with these industrial actors is not just contractual – it is also collaborative. We have built relationships of trust, the result of a long history. While our duties and responsibilities are clearly defined, we discuss choices together, openly addressing difficulties, and share the same objectives. This constructive collaboration contributes to better project control. The first area of this collaboration concerns new nuclear-powered ship programs, conducted jointly between the CEA and the French Defence Procurement Agency (DGA), which acts as the overall project owner: Suffren-class SSNs, SSBN 3G and the new-generation aircraft carrier (PA-NG).

The second area of our collaboration focuses on R&D. We conduct studies with our industrial partners to ensure the availability of mature future technologies. The ongoing four-year R&D contract covers topics such as additive manufacturing, improved manufacturing inspection methods, material ageing and simulation.

The third area concerns the monitoring of operational reactors, with the CEA supporting the Fleet Support Service (SSF) for onboard nuclear reactor maintenance in its role as design authority for the reactors. For all three areas, the Nuclear Propulsion Department (DPN) relies on the Joint Technical Department for Naval Propulsion Reactors (STXN), which brings together experts from the CEA, the French Defence Procurement Agency (DGA), French Navy, and Defence Infrastructure Service, based in Paris and at the naval ports. Hosted by the CEA and led by the DPN, this department maintains continuous, constructive technical dialogue with Naval Group.”

GENDER DIVERSITY PLAN

SERVING OPERATIONAL PERFORMANCE

SIX YEARS AFTER THE LAUNCH OF THE FIRST GENDER DIVERSITY PLAN BY THE MINISTRY FOR THE ARMED FORCES, IT IS TIME TO TAKE STOCK OF THIS COLLECTIVE EFFORT AIMED AT ACHIEVING A MORE BALANCED GENDER REPRESENTATION TO STRENGTHEN THE OPERATIONAL PERFORMANCE OF THE ARMED FORCES.

With women making up 17.3% of military personnel* (rising to 22.7% when including civilian staff), the French Ministry for the Armed Forces and Veterans is one of the most gender-diverse in the world. While France is considered a leader in this area, maintaining this proportion requires constant attention and effort. These results reflect, in particular, the proactive policy championed by Florence Parly, former Minister of the Armed Forces, who launched the first Gender Diversity Plan in 2019. Her observation was clear: "The Armed Forces cannot afford to exclude half of the available talent. Attracting and retaining women is a crucial challenge, all the more so for the years ahead." Progress had already been made previously. In 1998, annual

recruitment quotas that limited the number of women in the armed forces were removed. Yet a more collective, structured push was needed. This need is addressed by the Gender Diversity Plan. The plan is built around three pillars (recruitment, management and perceptions) and implemented through twenty-two concrete actions designed to better support women in fully realising their careers while balancing their professional and personal life. The first pillar focuses on attracting French women to the armed forces by broadening the recruitment pool. To address premature departures, the second pillar, "management", aims to improve service conditions. Finally, the third pillar, "perceptions", promotes awareness and training on gender diversity, enhancing



the image of women in the armed forces and fostering a lasting culture of inclusivity. Among the tangible results is a gradual but steady increase in female representation within the armed forces, accompanied by the removal of restrictions on women accessing certain posts and roles. As proof, today, the crews of ballistic missile submarines (SSBNs) are becoming more gender-diverse.

A network of 1,400 "diversity and equality" advisers has been deployed nationwide (including overseas territories) and abroad. Each team consists of a gender-balanced, civilian-military pair, trained and accessible to identify early warning signs: sexist behaviour affecting inclusivity and cohesion, discrimination, sexual or gender-based violence.]

* Source : Ministry for the Armed Forces, 2025.



Joining the operational reserve is often motivated by a desire to serve one's country and contribute to its defence. Check out the interviews of our reservist colleagues on our website!



Colonel Corinne Robillard, new Senior Official for equal rights and gender diversity at the French Ministry for the Armed Forces and Veterans

"Gender diversity is an operational asset"

"Six years after its 2019 launch, the first Gender Diversity Plan has provided a solid foundation for all HR departments in the Ministry, offering a clear framework. The twenty-two actions implemented have helped spread a better-understood and integrated culture of gender diversity. Gender diversity is an operational asset that strengthens cohesion, creativity, and the effectiveness of the armed forces. On the question of equal rights, in which I am also invested, this principle – based on trust and the courage to overcome stereotypes and habits – is built daily through decisions and behaviours. When everyone feels legitimate and respected, the armed forces gain in performance, cohesion and collective strength."

A second plan is currently under review, featuring new priorities while remaining focused on strengthening the operational performance of the armed forces.

D&I

Diversity and Inclusion

10 years SIGNATURE

At Naval Group, Diversity and Inclusion (D&I) is neither a new topic nor a passing trend: it has been a priority for over ten years. The group is committed to fostering an inclusive, respectful and caring work environment for all employees, regardless of their sexual orientation or gender identity. Naval Group reaffirmed its commitment in this area by yet again signing the LGBTQIA+ charter of the L'Autre Cercle association, on 11 December. The key objectives of this agreement are to attract and integrate a diversity of profiles, develop employees' careers and skills, promote inclusion within work teams, and to integrate diversity and inclusion into societal commitments and relationships with the ecosystem.

In renewing our signature of the charter on 11 December, Naval Group under takes to:

- ensure equal rights and treatment for all employees, regardless of sexual orientation and gender identity;
- support employees who are victims of discriminatory comments or acts and punish LGBT-phobic behaviour;
- measure progress and share best practices in order to improve the working environment.

Across all of the group's sites, a network of contacts – composed of an HR representative and an operational staff member – ensures the coordination of actions to achieve the set objectives.

“Renewing our commitment to this LGBTQIA charter is a source of pride. At Naval Group, we are dedicated to supporting each and everyone’s professional development in an inclusive and supportive environment, because the diversity of profiles is a real asset for the company.”

JEAN-LUC FRANCE, NAVAL GROUP EVP, HUMAN RESOURCES

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As an international naval defence player, Naval Group is a partner for countries seeking to maintain control of their maritime sovereignty. Naval Group uses its extraordinary know-how, unique industrial resources and ability to establish transfers of technology and strategic partnerships. The group designs, builds, integrates, provides in-service support, deconstructs and dismantles submarines and surface ships. As an industrial prime contractor, equipment supplier, designer and integrator of whole warships and combat systems, Naval Group is innovating in the domains of autonomous systems, underwater weapons and drones. The group also offers services for naval shipyards and bases. Ever mindful of the issues of corporate social responsibility, Naval Group is a signatory to the United Nations Global Compact.

For further information:
[NAVAL-GROUP.COM](https://www.naval-group.com)

