

Feature NATO naval centres of excellence

Expert guidance

NATO's naval centres of excellence are evolving against a changing strategic backdrop, with militaries increasingly focused on the potential for peer conflict. **Gerrard Cowan** reports



Areas of more 'traditional' naval concern are growing in importance against the backdrop of rising fears over peer conflict. Left: US marines march to the beach as part of preparation for an amphibious assault during exercise 'BALTOPS 2019'. USN: 1761191

As NATO reorients to a renewed focus on the potential for 'peer' conflict, so the networks of institutions and organisations that support the alliance are adapting their own activities. This trend can clearly be seen in the alliance's three naval centres of excellence (COE).

NATO's COEs aim to support the alliance in a range of areas, from education, training, and exercises to doctrine development, concept development, and experimentation.

The COEs are national or multinational military organisations that offer recognised expertise and experience that benefits the alliance and supports NATO innovation. While they are accredited by the alliance, they are not part of its command structure, a NATO official told *Jane's*. There are 25 in total covering a wide range of topics. While many of

these conduct work relevant to the naval domain, there are three that particularly concentrate on maritime issues: Combined Joint Operations from the Sea (CJOS COE), Operations in Confined and Shallow Waters (COE CSW), and Naval Mine Warfare (NMW). A fourth maritime-focused centre – Maritime Security (MARSEC COE) – is being established, with NATO accreditation expected in 2020.

The COEs provide training and education to leaders and specialists from NATO members and partner countries, while assisting with doctrine development, identifying lessons learnt, improving interoperability and capabilities, and testing and validating concepts through experimentation or during exercises. They are hubs for the enhancement of interoperability among allies and partners, maximising efforts in joint and/or combined operations, while serving as the custodians of various NATO publications and supporting alliance panels, working groups, and committees through functioning as the co-chair, secretary, or contributing members.

The official noted that the alliance has renewed its focus on the North Atlantic in recent years as a key enabler of security and as the sea lines of communication for strategic reinforcement, a transatlantic connection that depends on the ability to influence and when necessary control the maritime environment.

“The face of maritime warfare can be dynamic and challenging to predict; a sound maritime strategy not only provides an effective collective defence but serves as a force multiplier for individual nations in addressing maritime risks and threats,” the official said. “NATO’s maritime-oriented COE’s contributions are integral to the alliance’s maritime strategy.”

COE CSW is based in Kiel, Germany. It supports a number of endeavours, such as certifications, evaluations, joint operations training, and maritime standards. The centre’s work has evolved in recent years against the backdrop of the changing situation in the maritime domain, said Commander Andreas Kutsch, acting staff co-ordinator at the COE CSW.

“We are moving from a focus on general transformational issues to concentrate more on the ‘core warfare’ areas – this is related to global security developments,” he told *Jane’s*.

The COE CSW conducts its work in various ways, Cdr Kutsch explained. First, it conducts academic or think tank-type work, studying papers, conducting investigations into particular topics, and issuing recommendations. It reviews NATO doctrine on different levels, responding to requests from alliance headquarters or other organisations within NATO and its member states.



COE CSW: 1736134 The COE CSW – based in the above building - supports a number of endeavours, such as certifications, evaluations, and joint operations training.

The second strand is more practical, with the centre working to find solutions to certain problems, such as harbour protection. This involves activities like reviewing or drafting doctrine through to conducting more practical evaluations, in co-operation with other entities.

However, while the centre conducts different types of analysis, it is not a research centre, Cdr Kutsch said. It is largely staffed by serving naval officers and aims to consider the practical impact of naval developments on operations in confined and shallow waters. This means that while it does not conduct technical research, it does provide input into such projects (being carried out by industry, for instance), focusing on the practical demands or obstacles in a certain project.

The centre is involved in a wide array of projects, many of which focus on adapting to new developments in the maritime environment. For example, it is examining the potential of autonomous underwater vehicles (AUVs), with a particular focus on support for amphibious operations.

The COE CSW works across the strategic, operational, and tactical levels, said Captain Thorsten Mathesius, branch head staff organisation and external relations at the COE CSW. On the strategic level, he pointed to the centre's work with the Munich Security Conference, an annual high-level gathering of security policymakers. The COE CSW co-hosts and supports the conduct of two roundtables during this conference. The 'Maritime Security Roundtable' presents critical strategic aspects connected with maritime security and safety, while the Arctic Security Series is a contribution to the emerging debate regarding security aspects in the region, with a strong link to maritime security.

On the operational level, Capt Mathesius highlighted the COE CSW's work on operational maritime law, an important and easily overlooked area. The centre notes on its website that "experience shows that legal views and opinions are not necessarily shared amongst the experts and nations. On the contrary, differing legal positions constitute not only an eternal and natural phenomenon, but also a potential for controversial discussions in the international community, including within NATO member states." This is particularly relevant to the COE CSW, as legal issues become more complex when a theatre of operations is situated near a coast.

The centre organises conferences focused on issues in the legal area, Capt Mathesius said. These have a strong international dimension, bringing together experts not just from NATO members but from Australia, the Middle East, and other regions. These experts are both naval officers and legal advisors, along with specialists from universities and similar institutions. The legal work also has important ramifications on the tactical level, Capt Mathesius noted. The centre does a range of other work on the tactical side, he added,

aimed at addressing “the challenges and problems we see in the normal working day of naval officers”.

The centre also conducts work with industry. For example, it is working with a number of companies and other military organisations on the FIT FOR CSW project. As confined and shallow waters are an extremely complex operational environment, they demand a broad set of scalable capabilities to meet the full range of military operations across the entire spectrum of missions. The aim of FIT FOR CSW is to produce a set of compatible components that would enable countries to maintain a broad set of affordable and effective capabilities. The focus is on developing sensors and effectors that would not be integrated into a ship’s combat system, but instead be self-sustaining and ‘plug and play’, requiring just basic services like power supply. The idea is to develop certain standards that would be followed by manufacturers of sensors and effectors, so that their systems can be easily connected to a network. The centre is concentrating on flexible, agile, sustainable systems that can be easily interchanged.

FIT FOR CSW aims to bring together sensors and effectors in a simple way, making them accessible for all nations that operate in CSW, said Capt Mathesius. The goal is to address the affordability challenges associated with equipment that is often complex and expensive, he explained. The project is focused on producing a conceptual study outlining what is required, with industry then providing feedback.

The COE CSW conducts a range of work with other centres, such as the CJOS COE, with which it works on maritime situational awareness and co-operates on conferences and in other activities, said Cdr Kutsch. One of the principles of the COE concept is that the centres do not replicate each other’s work, so such co-operation is necessary. It also conducts work with the NMW COE. However, the centre also works with COEs outside the naval domain. For example, it is working with the NATO Modelling & Simulation COE on the NATO Maritime Synthetic Collective Training Concept, which aims to develop virtual environments for maritime training.

The NMW COE evolved from the Ecole de Guerre des Mines (EGUERMIN), which is a Belgium-Netherlands school but also provides courses to other NATO nations. EGUERMIN’s focus was on the education and training side, said Cdr Herman Lammers, director of the centre. However, it has since expanded to include a number of new focuses as these have grown as priorities for the alliance. As well as education, these pillars include concept development and experimentation, doctrines and standardisation, and lessons learnt and analysis.



The COE CSW supports two roundtables during the Munich Security Conference, including one focused on Arctic security. Pictured above at the most recent such roundtable are (from left): Singapore Minister for Defence Ng Eng Hen; Bill Hayton, an associate fellow at Chatham House; and Rear Admiral Christian Bock, director of the COE CSW. COE CSW: 1736135

Cdr Lammers said the NMW COE is currently analysing a number of organisational dimensions, considering the service it already provides, while looking into new projects that could benefit NATO in general and the nations that support the COE. It will then look to refine and expand its programme of work, Cdr Lammers told *Jane's*.

The NMW COE – and the COE concept in general – aims to address several shortfalls in NATO capabilities that arose in the postCold War period, said Cdr Lammers. This saw defence budgets being scaled back and a reduced focus on more traditional naval warfare disciplines. The NMW CEO recently supported a study group that aims to develop a new vision on naval mine warfare for NATO, Cdr Lammers added. “This will guide the nations on the directions that NATO thinks the development will go and what is needed for the future, so that NATO members can concentrate on these capabilities,” he said.

According to the NMW COE, the globalised economy that has evolved since the end of the Cold War has created “an unprecedented interdependence among all nations”. The number and types of military threats to NATO have grown alongside this economy. While the alliance’s focus during the Cold War was on the Warsaw Pact, it must now prepare for regional conflicts and asymmetric threats, as well as major joint operations.

“The transportation of goods as well as combat power via the sea is crucial for both commercial and military concerns,” the NMW COE states. However, it notes that while the challenges facing the NMW community have changed, its capacity has reduced significantly, a reduction that has been masked by advances in technology. Sonars have improved and AUVs have been introduced but there has been a reduction in the number of robust mine countermeasure exercises and focus on unit-level training outside of exercises. “Mine stocks have significantly decreased and some NATO nations no longer even maintain this capability,” the NMW COE states. “Focused intelligence gathering in support of NMW missions has been curtailed. Consequently, the community’s warfighting mentality has been diminished.”

A clearer NATO NMW vision is needed, the centre argued, pointing to four elements that will support this development. First, effective co-operation, which “yields more than the sum of its parts”; second, is the belief that quantity and quality deliver flexibility; third, that sustainability requires innovation; and finally, that investment in human capital is essential.

Co-operation through bodies like the NMW COE are essential in achieving the benefits of these four goals, said Cdr Lammers. While complete standardisation – including equipment types – will not occur, as nations wish to independently develop and sustain their own capacities, there are a range of areas in which co-operation is essential: for example, in data exchange.

In terms of technological focus, Cdr Lammers said the NMW COE is increasingly concentrating on areas related to unmanned systems, which have clear advantages in mine warfare, notably the benefit of removing personnel from the minefield. Unmanned systems also have the potential to speed up the mine countermeasure process, he said.

“At the moment, it’s a very time-consuming process. With these new systems, we will be able to explore wider areas in shorter periods of time, which will speed up naval mine warfare operations.”

However, he said there is a need for further doctrinal development in deploying such systems and overseeing their operations. This is the goal for the NMW COE, rather than technological development per se. “That is one of our focal points within the COE – making sure that nations have adequate planning tools and evaluation tools for these new capabilities.”

The CJOS COE, based in Norfolk, Virginia, is the only US-based centre. It traces its history back to Striking Fleet Atlantic, a US-based command that was deactivated in 2005 and has a wide range of focuses, from logistics support for amphibious operations in the Atlantic to future maritime threats.

Captain Todd Bonnar, warfare analysis branch head at CJOS COE, said the centre’s priorities have evolved over the years. With the shift in focus from Russia and the Soviet Union at the end of the Cold War, there was a growing emphasis on maritime security, he said. “That really had us focusing on issues like maritime interdiction operations, providing support to operations in the Middle East, as well as counter-piracy and the other, constabulary-type roles that navies were taking on.”

However, the past five years have seen renewed consideration given to the potential for peer conflict, particularly since Russia’s annexation of Crimea in 2014.

“We’ve moved back to that near-peer competition, hard warfare emphasis,” Capt Bonnar told *Jane’s*, adding that the CJOS COE is taking steps to provide direct support to the new Joint Force Command Norfolk (JFCNF).



The NMW COE/EGUERMIN hosts the annual ‘Dynamic Move’ exercise. The above image is from the 2018 event. NMW/EGUERMIN: 1736133

Capt Bonnar said the CJOS COE is examining many of the emerging technologies in the military domain at present, from big data to automation. For example, it is looking at the ways in which the further development of unmanned capabilities could support NATO’s maritime strategy, he said. However, Capt Bonnar stressed that – in keeping with the COE approach in general – his centre takes a conceptual approach. While it works alongside

technological experts, the COE's focus is on the operational side, considering "how we would employ a certain technology, how it would work, the type of command-and-control relationships that would have to be in place to utilise and employ it," Capt Bonnar said.

Such work is often conducted in collaboration with other groups, including other COEs, he added, and particularly the other naval-focused centres. It also works closely with the NATO Maritime Interdiction Operational Training Centre, based in Crete, Greece, and with the NATO Centre for Maritime Research and Experimentation (CMRE) in La Spezia, Italy. Additionally, the centre works with a range of universities in Europe and North America, among other bodies.

"A lot of the work we do is conceptual, looking at the trends that are potentially coming in the next 20–40 years and the military application of those," he said. "What does [a particular] trend mean and how does NATO have to transform in order to stay ahead? How do we maintain a technological edge or a conceptual edge on our competitors, to ensure that deterrence is maintained and that we're able to provide collective security for the 29 nations?"

The CJOS COE has a natural relationship with Allied Command Transformation (ACT). Capt Bonnar said CJOS COE aims to "provide a lot of support to their activities and projects", providing a maritime point of view. He said CJOS COE had contributed to ACT's Strategic Foresight Analysis (SFA) Report of 2017, while it has also worked on the Framework for Future Alliance Operations (FFAO). Additionally, the centre has provided input in several specific areas of expertise, such as building knowledge on operations in the Arctic. It also works closely with Maritime Command Headquarters (MARCOM), based in the UK.

The CJOS COE will host a Future Maritime Warfare Symposium in October 2020, aimed at officers from NATO and partner nations. This will analyse the standing up of JFCNF and the re-establishment of the US Second Fleet in August 2018, looking at "how we will execute operations and if there are themes, gaps, and frictions that haven't been identified yet," Capt Bonnar said. This will also include wargaming and a tabletop exercise, he added.

Such work is all part of the centre's mandate to support NATO's transformational efforts. The value of the COE concept is its ability to provide an extra set of eyes and ears and a reviewing function, acting as supporters for NATO in the maritime and other domains while also providing a kind of external, third-party viewpoint.

"I think they definitely appreciate the fresh perspective we provide," Capt Bonnar concluded.

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Comment

NATO's COE concept provides a set of useful institutions to the alliance. While the organisations are not part of NATO's command structure, they do provide it with fresh, in-depth perspectives on an array of subjects. Their semi-detached position is actually a positive for the alliance in some respects, providing a third-party, objective perspective on pressing issues from experts who nonetheless clearly place NATO's long-term success at the heart of their work programmes.

This work takes various forms, although there is a general emphasis on areas like training, education, and doctrine development, rather than a specific focus on technological development – something that is already well covered by industry and by navies themselves. However, the centres play a useful role in analysing the ways in which new technological developments can be applied operationally. This is boosted by the presence of serving officers in their ranks, which makes the COEs almost hybrids of think tanks and military organisations.

The evolving focus of the COEs in recent years is illuminating, as it underscores the ways in which the alliance itself has shifted perspective. While each COE has a distinct set of particular specialities, a broad shift in emphasis can be discerned: a move over the past five years or so from areas like counter-insurgency or 'constabulary' work to a resurgence of interest in the potential threat of peer conflict. This trend is clearly identifiable in the three naval-focused COEs.

The range of naval COEs is set to expand over the next year or so as the new MARSEC COE is stood up, a sign of the importance ascribed to maritime issues in the broader COE concept. However, naval-relevant themes and issues are discussed across the centres, including those that are not exclusively focused on the maritime domain. This seems likely to increase in the years ahead, particularly as areas of more 'traditional' naval concern grow in importance against the backdrop of rising concerns over peer conflict.