Submission for cie.def@tweedekamer.nl, Round Table Discussion on the vision of the future of the Netherlands Submarine Service, March 16, 2016

Rear Admiral Hank Ort, NLD N (retd.)

La Spezia, March 9, 2016

Expertise: Chief of Staff NATO Maritime Command (2009-2013), Director NATO Centre for Maritime Research and Experimentation (2013-current)

I Strategic developments

The world is confronted with a multi-polar world order, where Euro-Atlantic security and international law and order are increasingly under pressure. Conflict and destabilising influences manifest themselves to the East and South borders of Europe and the flanks of NATO’s area of responsibility. These developments are of direct relevance to the Netherlands with its open economy.

Against this backdrop, the significance of the maritime domain is clear. Indeed, some of the security challenges play out in sea areas, like the Arctic, where economic interests are increasingly contested. For the Netherlands, protection of sea lines of communication and safeguarding of economic interests, also in the Caribbean, are a vital concern. To give credibility to diplomatic and economic means of securing these interests, robust maritime forces provide military response options.

As part of any maritime force, the submarine is a highly effective and very cost-effective weapon system. With its capacity to remain undetected for long periods, it provides the possibility to approach opposing forces and operate in otherwise contested areas. The presence of the submarine with its long range information collection capability and weapon systems (including the potential for covert landing of special forces) can be used to influence situations at sea and on the land. The submarine is also a very capable anti-submarine platform in its own right, because it operates covertly in the same environment. These capabilities constitute a powerful force protection and area denial potential. Proven flexibility also exists for beneficial use of submarines in low-violence operations like counter-piracy or counter-drugs.

II Military strategic developments

International proliferation of submarine capability is a concern. Notably, Russia is investing in this area, leading NATO commanders to report “more activity from Russian submarines than we've seen since the days of the Cold War”. Not only are we back to Cold War levels of operational activity, but Russian submarines have made a major jump in technological performance, with NATO seeing “a level of Russian capability that we haven’t seen before, through an extraordinary investment path not mirrored by the West”. [[1]](#footnote-1)

In NATO, three of the largest navies operate only nuclear submarines (USA, GBR, FRA). Four navies operate modern diesel-electric submarines (Italy, Germany, Spain and Portugal), two navies have ordered new submarines (Greece, Turkey) and three navies are considering replacement (Netherlands, Norway, Poland). One navy has not expressed replacement intents (Canada). Outside NATO, two relevant navies are considering replacement (Sweden, Australia). Australia provides an interesting case in favour of submarines since the Australian government has announced the intent to increase the number of submarines from six to twelve by 2025. The Dutch, Canadian and Australian submarines have demonstrated expeditionary reach commensurate with their larger size.

The Netherlands Submarine Service is held in high esteem internationally. This is illustrated by the fact that the Netherlands Submarine Command Course has provided command training for Australia, Canada, Germany, Norway, Great Britain and the United States. Historically there has always been close cooperation with the Royal Navy, which has intensified as the Netherlands continue to provide complementary diesel-electric expertise to the British nuclear service. With the diesel-electric Walrus submarines, their capability to operate close to the coast and their expeditionary reach, the Netherlands Navy provides a valued niche capability to NATO.

III Developments regarding submarines worldwide

Whenever a weapon system comes up for replacement, it is relevant to examine the projected future capabilities. Two areas of research and development hold relevance for the underwater domain: underwater detection and underwater autonomy.

Classically, diesel-electric submarines were most vulnerable for counter detection whilst charging the batteries, with the boat just below the surface but some masts visible just above. With air independent propulsion this disadvantage is a thing of the past. But there is development in the area of detection of underwater objects, involving passive acoustic means, non-acoustic means and cost effective, unmanned vehicles. Although there is promise in these developments, low signature platforms like modern submarines will continue to be difficult to detect. In any case, even with yet undeveloped means, the statistical challenge of detecting in vast sea areas will remain.

In the military environment progress has been made with unmanned capabilities with varying degrees of autonomy and more is expected. In the air and ground domain unmanned aerial and surface vehicles have become ubiquitous and indispensable for military operations. In the maritime domain the challenge is that much harder because of underwater detection and communication difficulties, but also there, autonomy is developing fast. Although this development is proceeding apace, it is not expected in the next decades that unmanned, autonomous systems will take over the full functionality, the endurance and the inherent flexible scalability of operations of manned submarines. Apart from the complexity and the sheer size required, perhaps the greatest challenges would be moral, ethical and legal.

Making use of the advance in the development of unmanned systems, there is a rich potential to extend the range and coverage of submarines through the use of external unmanned systems. With the design of any new platform, it would definitely be advisable to build in sufficient flexibility for future modification of sensors, weapons and self-defence capabilities throughout the expected life time (where possible in the form of ‘provisions for’).

Conclusion

In the strategic security context, it makes sense to operate a navy, and submarines are an effective and cost effective weapon system in any navy. There is an undisputed NATO requirement for a capable submarine force. The Netherlands currently provides a highly regarded niche capability with the Walrus submarines.

In the next decades, scientific and technological developments are not expected to either replace submarines or to render them too vulnerable for detection. It is advisable to build sufficient flexibility for adaptations into the design.

1. Commander MARCOM, Vice-Admiral Clive Johnston (IHS Jane's Defence Weekly, 02 February 2016). [↑](#footnote-ref-1)