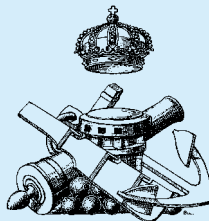


Littoral OpTech – West

Edited by Mårten Granberg



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Day One

Welcome addresses were made by The Royal Swedish Navy Chief of Staff RADM Jan Thörnqvist, Dr. Kalev I. Sepp, Director of the Littoral Operations Center at the U.S. Naval Postgraduate School, RADM Thomas Engevall (RSwN) President of the Royal Swedish Society of Naval Sciences, and CAPT Clark O. Troyer (USN), Commanding Officer of the U.S. Office of Naval Research-Global.

The keynote address was presented by the Honorable RADM Jay Cohen (USN, ret.), former Chief of the Office of Naval Research and Under Secretary of Science and Technology at the Department of Homeland Security. RADM Cohen highlighted the challenges of operating in the global littorals, and in particular the "extreme littorals" of the Baltic Sea. RADM Cohen made a closing remark that "The future are The Littorals, the world has changed. Blue waters will always be important for world trade but green and brown water will be more important. The combined length of world Littorals are the same as the distance from the Earth to the Moon".

Dr. Kalev I. Sepp, Director of the Littoral Operations Center at the U.S. Naval Postgraduate School gave a presentation about "The Littorals – Shifting from Blue to Green". Dr. Sepp gave a brief historical review of the US experience of green water operations from the Civil War. Dr. Sepp also mentioned other examples of complex green water operations from WWI and WWII and the difficulties during these littoral battles. During the Pacific campaign the US and Allies gained knowledge and capability in conducting amphibious battle. The capability was important a few years later in

the Korea War. Dr. Sepp mentioned The Falklands, the Iran/Iraq war and the operational difficulties. In the littoral battle scene noncombatants are present. It becomes confused in cluttered littoral regions.

Dr. Sepp addressed the question, "What can we learn from Sweden and their extreme littoral?" For Sweden it is natural to combine land-, sea- and air forces to work integrated in the Littorals. Dr. Sepp mentioned Swedish experience in adopting Littoral capabilities from historical Soviet threat in the cold war. US and Sweden has worked together earlier with the submarine Gotland exercise in 2004 - 2005, then USN bought and implemented 16 CB-90:s. Dr. Sepp expressed a wish for more cooperation and that we shall remember what we have learnt and not forget.

Dr. Sepp gave brief information about U.S. Naval Postgraduate School, NPS. NPS is a very good environment to develop littoral concepts. 54 different nationalities among the students that participate in courses, programs and projects. Many different projects regarding littoral combat ship, scenarios etc are studied. NPS has the strength and can turn to the problems, Dr. Sepp concluded.

CDR Ingo Eilts, German Navy, NATO Centre of Excellence for Operations in Confined and Shallow Waters, COE CSW, at Kiel, gave a presentation about how the center is organized and their partnering countries in NATO.

Dr. Lee Wilett, Editor HIS Jane's Navy International gave a presentation "Overview of Littoral Operations and Technologies". Dr. Wilett gave a summary of subjects and littoral trends that IHS and Jane's have been covering in recent years.

The workshop consisted of panel discussions, interspersed with informal

networking, with a number of senior military and civilian subject matter experts from Finland, Germany, India, Norway, Sweden, Turkey, the United Kingdom and the United States.

Panel discussions

Panel One: The Littorals – Why do we care

The panel was moderated by CDR Steve Benson (USN, ret.), Saab PM Littoral Operations Center. He made the opening remarks: “Very little in the world today escapes the involvement of the Littorals. The Global Littorals are and have been since time in memorial dominant geographic feature in human existence. As an increasingly interconnected world becomes increasingly reliant on stable conditions. In the future we have to prepare well for joint and combined operations in the complex Littorals. On the sea, under the sea, in the air, on land, in space and in cyber space. This preparation across allies and partners will serve from presence to deterrence and on through war-time. We have highly qualified experts in this panel”.

The Panel consisted of CAPT Yueksel Can, Turkish Navy, NATO, COE-CSW, Kiel., Dr. Eric Berglund, Swedish Defence Research Agency, FOI, Dr. Martin Murphy, Naval analysts & Senior Research Fellow, Dalhousie University and CAPT Jeff Kline (USN ret.) U.S. Naval Postgraduate School.

Panel Two – Operations in the Littorals – With Allies and Partners.

The panel was moderated by RADM Bertil Björkman (RSwN ret.) and Royal Swedish Society of Naval Sciences. He made the opening remarks: The intention with this panel discussion is to present

ideas and views how to operate in the littorals. Do we have common definitions, how about extreme littorals, what define littorals and challenges of tasks matched with decreased budgets.

The Panel consisted of RADM Jonas Haggren RSwN, CAPT Magnus Jönsson, RSwN, Commander 3. Naval Warfare Flottila. CAPT Chris Hodkinson, RN, Deputy Asst. Chief of Staff – Land & Littoral Manoeuvre, CDR Carl-Magnus Wasenius, Chief of Staff, Uusimaa Brigade, Finland.

RADM Bertil Björkman thanked the participants for their presentations and led the panel discussion and took questions from the audience. RADM Björkman made a final remark for panel two: “We will manage in the future, we will have the capacity. We have the ambition to joint operations and combined exercises. In total we have the capacity and we will do the job”.

Panel Three – Underwater Operations in The Littorals

The panel was moderated by CAPT Bo Rask (RSwN ret.), Secretary Royal Swedish Society of Naval Sciences.

The Panel consisted of RADM J.J. Waickwicz (USN ret.), former CO, Naval Mine and ASW Ops, 3d Fleet, CAPT Anders Järn RSwN, FXM, Swedish Defence & Security Export Agency, CAPT Jens Nykvist, RSwN, Commander 1. Submarine Flottila, CDR Jonas Hård af Segerstad, RSwN, Commander 42. Mine Countermeasures Squadron.

After opening remarks by the moderator, RADM J.J. Waickwicz made the first presentation for panel three.

RADM Waickwicz told the background from the submarine Gotland that took part for exercises during two years



Panel Two- Operations in the Littorals - With Allies and Partners.

in the US. The exercises were vital for USN to maintain antisubmarine skills and capability.

It is essential to reinvent training and bring it to the forefront in order to maintain capability and know-how.

RADM Waickwicz expressed that in the future there is a need of mutual development of units and capabilities in order to save costs. Units can still be adjusted to the own nations need and with own software and weapon systems. So instead of develop own ships for ten years at high costs, are there similar ships on the market today? RADM Waickwicz made a final remark, "Lesson learned, increase training".

CAPT Bo Rask made final remarks: "Identify lessons, then implement them, otherwise it is not lessons learned. It is important to keep on training everything, especially daily tasks. A good idea could be to invite the crew to innovative sub-

jects to train. International exercises are good, but always evaluate".

Day two

The keynote address was presented by BGEN Ola Truedsson, Commander, Swedish Maritime Component Command, Swedish Armed Forces, Joint HQ. He explained the Swedish view on Littoral environment and Littoral Operations. The terrain in which Swedish Navy conducts its operations is very complex. The complex multidimensional operation area where the Swedish Navy has to have control and situational awareness in four dimensions: Air, land, surface and sub-surface.

BGEN Truedsson briefed about the current situation in The Baltic Sea. He also explained current trends and challenges for the Swedish Navy. National geographical position and national interests will be the foundation. Once again

the Swedish Navy is back to more traditional naval tasks like protecting shipping and show presence in own regional waters. Cooperation and interoperability in order to maintain operational capability is a key factor for future success. Signing the Host Nation Support agreement with NATO for instance. Cooperation for cost sharing regarding capability development is another necessary path for Sweden. BGEN Truedsson concluded his brief with explaining the importance with the Swedish Finnish Naval Task Group, SFNTG.

CAPT Wayne Hughes (USN, ret.), Professor and Dean Emeritus at the U.S Naval Postgraduate School, author of *Fleet Tactics and Coastal Combat*, gave a presentation with the headline “The Deadly Littorals”.

CAPT Hughes theme is that the littorals are different and difficult and have been since a turning point in 1905. For over a century coastal waters has not only become increasingly more dangerous but the special region of influence on both sides of the coast are much bigger and more intricate. Coastal waters has always been important but for different reasons. Since the earliest history as of Greece and Romans time many battles has been fought close to land. The reason for that is that there is were people live. 1904-1905 mark a special turning point, that is the year with one hand that the decisive battle of Tsushima was fought between Japanese and Russian fleets, but on the other hand it was the year when the famous Russian Admiral Makaroff went down with his battleship *Petropavlosk* when it struck a mine. A cruel irony because five years earlier before that he wrote a classic book on naval tactics mentioning that coastal waters was dangerous for battleships.

The battle of Tsushima straight was typical of being an important battle through out history similar to decisive ones like Lepanto, Nile, Trafalgar and Jutland. Sir Julian Corbett specified three components of the Royal Navy: the battle fleet to defeat any challenge to command of the sea; “cruisers” to patrol the sea lanes and protect British trade; and “the flotilla” of small combatants capable of fighting inshore, where battleships, with all their offensive firepower, could not venture because torpedo boats, submarines and mines. Early in WWI Makaroff and Corbett was proven right when three UK cruisers were sunk near the Netherlands coast by German submarines. 1915 the British ignored Corbett’s advice in the Gallipoli campaign by the Dardanelles. In a very short time three British and one French battleship struck mines. In the North Sea cruisers and destroyers carried out many operations and the battleships were kept far out at sea. During the WWII smaller units like P/T-boats were very effective against enemy shipping and trade routes in littoral environments.

If one is defending his own coast the vessels in his flotilla must be small, lethal and numerous, like for instance Swedish *Visby*’s, Chinese *Hubei*, Israel’s *Sa’ars*, Singapore *Victory* class and other nations equivalents.

Also submarines and coastal mines should be taken to account, a coastal mix. Fishing boats and small aircrafts can be a scout to detect enemy movements. Until recently USN has not needed small combatants in coastal waters, no need because USN has not needed to fight for control over littoral seas. But many of our losses since WWII from mines and torpedoes has been in these confined waters. But now we will have to increase our ca-



pability, especially if we would join operations in confined waters like the Baltic Sea, the North Sea, the Mediterranean Black Sea and other areas like that.

CAPT Hughes also briefed about the Pacific campaign during WWII, Solomon Islands with the landings on Guadalcanal and neighboring islands late 1942. The first six months in the campaign the better-trained Japanese performed better, even though the US had first detection with radar. We failed because we used column tactics for gunnery battle. Then Admiral Burke arrived commanding Destroyers with new successful tactics. Radar gave a decisive advantage and complemented with torpedo salvos USN started to win battles in the Pacific War. The clue that the Solomon campaign gives us to use today is that small deadly missile ships makes the difference in the littorals.

CAPT Hughes concluded his brief with

a summary. In short, bigger ships can be ambushed by smaller in the littorals. Aircrafts, missiles, torpedoes and mines make the littorals even more deadly and have vastly enlarged the region of danger. USN has not been out to a test inshore since 1950 and it is time to rebuild capability. When our warships are intended to fight in the littorals, an affordable flotilla of relatively inexpensive single-purpose ships is preferable to expensive multimission warships.

There is more likely that it will be many smaller battles like the Solomon campaign rather than a big decisive battle in the littorals. When ships must sail in dangerous waters, a single-purpose vessel is far superior to an open-ocean multipurpose one. USN has to learn from Sweden, Norway, Israel and other countries that have practice how to fight in extreme littorals and rebuild capability. The world today is truly different.

Panel Four – Technology - Seeing Through The Clutter: On the Surface and Over the Shore (Sensors & UUVs)

The panel was moderated by Col. Patric Hjort, Swedish Defence Materiel Administration.

The Panel consisted of Mr. Mats Elofsson, PM Surface Warfare, Swedish Defence Materiel Administration, Mr. Andy Biss, PM ANSPS 77 in the U.S. Saab EDS and Dr. Björn Larsson, Above Water Research Leader, Swedish Defence Research Agency, FOI.

Panel Five – Technology - Seeing Through The Clutter: Below the Surface and in Shore (Sensors & UUVs)

The panel was moderated by RADM Jay Cohen (USN, ret.), former Chief of the Office of Naval Research and Under Secretary of Science and Technology at the Department of Homeland Security.

The Panel consisted of CDR Pontus Krohn, Swedish Armed Forces HQ, Directorate of Plans and Policy and Mr. Linus Fast, Under Water Research Leader, Swedish Defence Research Agency (FOI) and Dr. Kevin Brinkman, Atlas Elektronik GmbH.

Moderator RADM Cohen made some opening remarks: “Under the water data goes by the speed of sound, on the surface it goes with the speed of light. How do you translate the speed of sound data to the battle commander so it will be meaningful?”

Panel Six – Technology - Seeing Through The Clutter: Ships, Vessels, Craft & Submarines for the Littorals: Experimentation & Innovation

Panel six was moderated by Dr. Henrik

Friman, Strategic Solutions.

The Panel consisted of CDR Mats Nordin, SME Submarine Design, Swedish Defence Research Agency, FOI, Dr. Roger Berg, SME Submarine and Surface Ship Design, Saab Kockums, Mr. J. Scott Shipman, B.B. Hoss, Inc., Dr. Chris Bassler, Team Leader for Future Surface Combatants, U.S. NSWC Carderock, Mr. Derrick Marcus Tepaske, ONR Science Advisor – II Marine Expeditionary Force & Acting ONR SciAd – Marine Forces Command.

Moderator Dr. Henrik Friman made some opening remarks: “We are going to talk about ships, vessels, crafts and submarines. We are also going to talk about field experiment. I think this workshop Littoral OpTech-West is so important. If we could take the challenge raised and solve these things that we can identify in that domain, a lot would be won. The complexity in the littoral terrain is the biggest challenge we can find. Public and private partnership and cooperation is necessary to solve the equation. Littoral Operation Centers, LOC, where private and government come together and create something unique. International cooperation is essential and it is very important to find your friends before you need them”.

Closing remarks

CAPT Bo Wallander moderated the closing remarks:

“Some of the speakers did touch something essential, the importance to win, in a duel situation you must win. During the workshop we have discussed the importance of the littorals. We have heard a number of historical arguments, 90 – 95 % of all sea battles have been in the littorals, we must train more there. All the weapon- and sensor systems must be able

to work in the littorals, not only designed for blue water. When developing new systems above water specialists can benefit from communicating with below water specialists and vice versa. The workshop has given many answers but also raised new ones. Together we can solve problems and create synergies. I would like to thank all participants”.

RADM Thomas Engevall (RSwN) President of the Royal Swedish Society of Naval Sciences made a remark: “I hope that all discussions, both formal and informal, as well as the new contacts that have been established, will be valuable in the future regarding our important subject, the littorals. From the Royal Swedish Society of Naval Sciences perspective, we have through this workshop lived up to the purpose of the Academy. Thank you all for participating!

CAPT Troyer made a final remark: “I would like to express my gratitude to the organizers and all participants. It has been a successful workshop. It was very good to have a regional workshop and I look forward for the coming workshops in other regions and learn from others experience. We shall take what we built

here in Stockholm and use in the future. Thank you very much”.

Dr. Sepp made a final remark: The purpose for coming here was to have a regional workshop to explore operational and technological challenges. I would like to thank the Royal Swedish Society of Naval Sciences, Senior Officers from the Royal Swedish Navy, Officers of the Navy Research Global for support, it has been two years since we created this concept, to Saab for funding research at NPS, to all distinguished visitors, panelists. I would also like to mention two individuals, Bo Wallander and Steve Benson of Saab, they have done a tremendous work ahead of this workshop and making it happen. The successful Littoral OpTech – West will be followed by another workshop, Littoral OpTech – East, then Littoral OpTech – South. What we did during OpTech – West will be the model for coming workshops. ”. Dr. Sepp concluded with some memorable quotes from earlier presentations.

For further information Littoral OpTech – West and the presentations; please contact CAPT Bo Wallander: bo.wallander@saabgroup.com

This abstract from the workshop was written by Mårten Granberg, Fellow of the Royal Swedish Society of Naval Sciences.

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Editor-in-chief: Rear Admiral Thomas E. Engevall

Editors address: Junibacken 9, S-135 54 TYRESÖ, SWEDEN

Telephone: +46 8 798 7139, alt. + 46 70 588 7589, E-mail: editor@koms.se

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Address for the Royal Swedish Society of Naval Sciences:

**Kungl. Örlogsmannasällskapet, Teatergatan 3; 1 tr,
S- 111 48 STOCKHOLM, SWEDEN**

Telephone: + 46 8 664 7018, E-mail: akademien@koms.se

Address for the Society's library:

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