

NATO plays it by ear

During the past year, Russian submarines have been lurking in the fjords of Norway and Sweden, provoking a storm of protest from the normally apathetic Scandinavians.

Norway and neutral Sweden are increasing their defence spending and all talk on the Soviet-sponsored "Nuclear free zone" in Scandinavia has ended. Why have the Russians risked so much trouble in the north?

One likely answer has to do with submarine warfare. If Russia were to invade Western Europe, victory or defeat in a conventional war would probably be decided on and under the icy waters of the North Atlantic. NATO cannot hope to hold out in the face of a massive Russian attack without a steady stream of ships bringing troops, heavy weapons and supplies from the U.S. and Canada.

Poised to block this NATO lifeline are 283 Russian submarines, the majority based along the Kola Peninsula on the White Sea and in the Baltic. The enormity of this threat to NATO may be seen when we consider that 39 German submarines in the North Atlantic almost brought the Allies to their knees early in World War II.

But the Russians are faced by a major geographical problem. In order for their attack submarine fleet to reach the North Atlantic shipping lanes, Russian U-boats must traverse the narrow waters between Greenland, Iceland, Norway and Britain — a killing zone where combined NATO anti-submarine forces lie in wait.

If the Russians were to send the bulk of their underwater fleet into the Atlantic before the outbreak of hostilities, such action would put NATO on full alert and rob the Soviets of the element of surprise which they consider essential.

Another fascinating and little known threat awaits the Russians. Over the past 30 years, the U.S. has created a vast network of underwater listening devices known as SOSUS. Each SOSUS unit is almost as large as a three-storey house — and there are thousands deployed to cover all strategic areas of potential naval warfare.

According to intelligence sources the SOSUS hydrophones — really giant underwater ears — extend along the Atlantic and Pacific coasts of America, across the Greenland-Iceland-Norway-U.K. gap, off the Norwegian coast and, reportedly, near the Russian Kola Peninsula. In addition, SOSUS systems are also deployed along the narrow choke points off Japan and Korea through which units of the Soviet Far Eastern fleets must pass.

These SOSUS units pick up the movement of Russian submarines, identifying them by type using the sound "signatures" peculiar to each sub; anti-submarine aircraft are then targeted against these intruders.

Based on what little information is available on this top-secret system, it is estimated that nearly all Russian submarines operating in the SOSUS zones can be monitored and tracked — and thus targeted for immediate destruction in time of war.

Of course, the SOSUS system would be a prime

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target in the event of a Russian attack and might not survive the opening phase of a war. But such an attack would again deprive the Russians of the element of surprise.

But the SOSUS system has a major weakness: It has great difficulty in tracking submarines in shallow coastal waters because of "bounceback" and distortions caused by underwater terrain features.

In addition, the complex mixture of warm and cold waters along coastal regions tends to further mask the position of enemy submarines. Naval sonar systems are also confused and degraded by shallow, turbulent waters, such as are found off the coast of Norway and Sweden.

The Russians, who have the world's largest hydrographic fleet, are well aware of these weaknesses. Their recent probing along the coasts of Norway and Sweden are likely experimental attempts to find passages toward the Atlantic which cannot effectively be monitored by the SOSUS system.

The utter failure of the Norwegians and Swedes to trap the intruding Russian submarines demonstrates the effectiveness of these new tactics.

The tiny midget submarines detected by the Swedes, some of which can crawl along the ocean floor, are probably designed to attack and destroy the underwater SOSUS installations. The impunity with which these Russian submarines operated, in spite of the best efforts of the Swedes and Norwegians, was also mirrored during last year's war in the Falklands.

We now know that an Argentine submarine tried to attack the British and then lay in the shallow waters of the Falkland Sound. The Royal Navy, which prides itself on its great expertise in anti-submarine warfare, spent almost two days searching in vain for this enemy craft.

According to reports, over 100 anti-submarine torpedoes, costing about \$30,000,000 were fired against this intruder — not one scored a hit. The Royal Navy's vaunted anti-submarine detection devices and torpedoes proved ineffective in shallow water.

As a result of these recent events, the Russians appear to have devoted a great deal of effort to developing shallow-water operations along the coasts of northern Europe. NATO is responding by a crash program to develop towed array sonars and new systems that can, hopefully, prove more effective in these coastal waters.

But, for the moment, the Russian submariners are demonstrating an alarming ability to circumvent NATO's vital underwater defences.

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