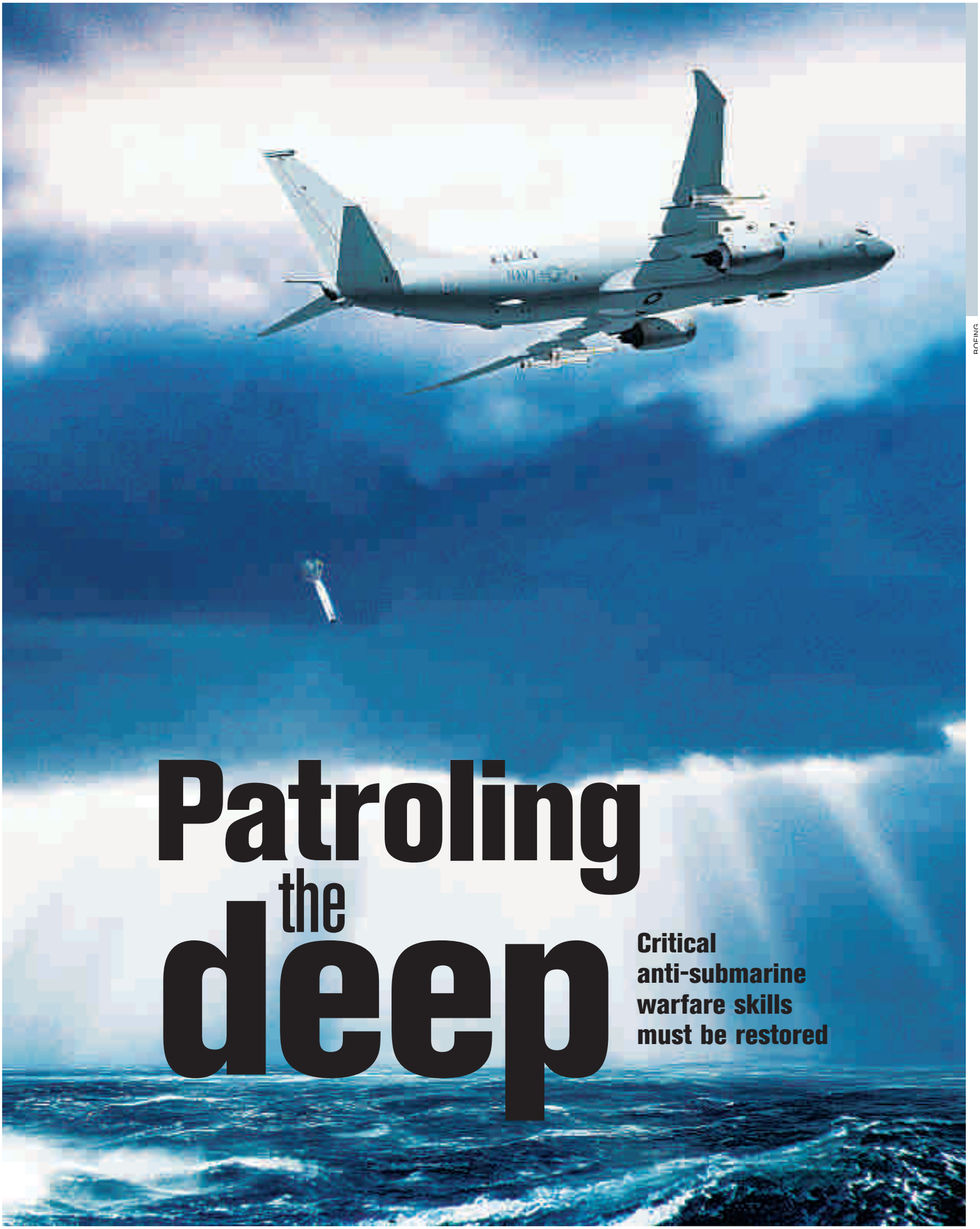

BOEING

Patroling the deep

Critical anti-submarine warfare skills must be restored

BOEING

BY MILAN VEGO

After the end of the Cold War in 1991 and until recently, anti-submarine warfare (ASW) was generally neglected by the Navy. One reason for this was the widely held view that with the absence of the Soviet submarine threat there is not really a need to maintain robust ASW capabilities. Another reason was the competing warfare requirements and budgetary constraints.

Gradually, the operational perspective was reduced to a purely tactical and technological approach to ASW. In the almost blind belief that efficiency is far more important than combat effectiveness, the number of ASW platforms has been steadily reduced. At the same time, the remaining ASW platforms, maritime patrol aircraft and nuclear attack submarines were given multiple missions unrelated to or distantly related to ASW. Predictably, the frequency and quality of ASW training steadily deteriorated.

Historically, ASW was a prerequisite for projecting power onto hostile shores and ensuring the safety of commercial and military traffic on the open ocean and in the littorals. Today, the scope of ASW is much broader because modern submarines pose a great threat not only to the survivability of warships and merchant vessels, but also to naval bases, ports, coastal installations and military and political-economic centers.

In a high-intensity conflict, control of subsurface waters is achieved by destroying or neutralizing the threat posed by submarines and mines. Control of the subsurface is in turn integral to and inseparable from control of the surface and the air. Full control of the sea invariably implies a sufficient degree of control in all three mediums. Obtaining and maintaining sea control in a certain part of a theater or in the entire maritime theater is the first and the most important prerequisite for conducting all other tasks by the U.S. Navy in case of a high-intensity conflict. It is also clearly an offensive objective.

A P-8C Poseidon patrols for enemy submarines in an artist's concept of the new multimission maritime aircraft. The Navy plans a fleet of no more than 50 P-8s to do the job formerly performed by 200 P-3C sub hunters.

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Yet for some reason, ASW in the Navy's Sea Power 21 concept is included as part of the Sea Shield component together with mine warfare, air and missile defense, anti-surface warfare and force protection. Only for the weaker side at sea, ASW is a defensive objective and is an integral part of sea denial strategy. Even at the tactical level, regardless of a navy's capabilities, ASW is usually a combination of offensive and defensive actions, such as protecting a convoy or carrier strike group and defense of approaches to U.S. naval bases and ports.

THE THREAT

Instead of a large number of Soviet nuclear-powered submarines on the open ocean, advanced conventional submarines operating in the littorals have emerged as the most serious threat to U.S. forwardly deployed forces, military sealift and merchant shipping. Although the overall number of submarines declined in the past two decades, their capabilities in terms of range, endurance, quietness and diversity of weapons have increased considerably. The emerging threats to forwardly deployed U.S. forces and naval bases are minisubmarines, swimmer delivery vehicles, remotely operated vehicles and autonomous underwater vehicles.

In 2008, there were an estimated 500 submarines worldwide, including 135 in Asia and 45 in the Middle East. A particularly difficult problem for the U.S. Navy is the proliferation of advanced conventional submarines. More than 40 nations possess diesel submarines. About 140 submarines in the Pacific are deployed within striking distance of critical maritime trade chokepoints. The most serious threat to U.S. forces in the Western Pacific is posed by the growing number and sophistication of China's submarines. The Chinese Navy is rapidly converting from an operational force of about 50 older, noisier submarines to a comparable force of modern and quiet submarines.

ASW FORCE

Attack submarines are the Navy's principal ASW platforms. They can also carry out other missions, such as covert surveillance/reconnaissance, anti-surface warfare, offensive mining, strikes against land targets and insertion of Special Forces teams. By the end of fiscal 2007, the attack submarine force stood at 53 boats: 47 Los Angeles-class subs and three each of the Seawolf and Virginia classes.

The number of land-based Navy maritime patrol aircraft

Destroying or neutralizing hostile, quiet, conventional submarines in the littorals will be much harder and more time-consuming.

has been steadily reduced since 1991. Today, the Navy can deploy only three P-3C squadrons with a total of 24 aircraft. The average age of the P-3Cs is approaching 28 years and some aircraft are more than 40 years old.

The P-3's replacement, the Boeing P-8A Poseidon multimission maritime aircraft, will carry out ASW, anti-surface warfare, and broad area maritime and littoral armed surveillance. The first P-8As are scheduled to enter service in 2013, with the last P-3C replaced in 2019. The Navy will have no more than 50 P-8s to do the job formerly done by 200 P-3Cs.

As for ASW from aircraft carriers, in 2004 the Navy began retiring its S-3B Vikings after changing their primary mission to anti-surface warfare. The last S-3B is scheduled to be decommissioned in 2010. There are no plans to replace the S-3B with a new aircraft dedicated to long-range ASW missions from carriers. That will further weaken the Navy's already inadequate ASW broad-area surveillance. The S-3B's long range, combined with the high mobility and operational reach of the carrier strike group, and with land-based maritime patrol aircraft, considerably enhances theaterwide ASW.

The Navy's force of ASW helicopters consists of SH-60B/F Seahawks carried on board carriers and large surface combatants. The Navy plans to convert these helicopters into truly multimission platforms, called the MH-60R. The Navy plans to have about 200 MH-60Rs within 10 years. However, the MH-60R is being given too many missions with potentially serious consequences for the crew's proficiency in ASW.

In mid-2007, the Navy's force of surface combatants with ASW capabilities consisted of 22 guided-missile cruisers, 49 guided-missile destroyers and 30 guided-missile frigates. Destroyers and cruisers currently being built or planned to be built are too large; none of them is optimally suited for operations in the littorals. The 3,500-ton Littoral Combat Ship (LCS) will rely heavily for its ASW capabilities on off-board systems, including distributed sensors such as an advanced deployable system, the MH-60R helicopter and unmanned vessels. The LCS is too large to conduct ASW in the littorals. A 1,500-ton corvette would be much better suited for hunting quiet conventional submarines in shallow waters.

DETECTION SYSTEMS

The Navy lacks a modern equivalent of the Sound Surveillance System (SOSUS), the theaterwide acoustic detection system developed in the 1950s to detect Soviet submarines. The new submarine technologies required faster processors and higher-capacity storage devices. This led to the development of today's Integrated Undersea Surveillance System, consisting of the Fixed Surveillance System (FSS), Fixed Distributed System (FDS) and the Advanced Deployable System (ADS). The fixed, mobile and deployable acoustic arrays are the primary means of detecting both nuclear and diesel-electric submarines. However, the system provides only tactical cueing to ASW forces.

Undersea surveillance systems developed during the Cold War have limited effectiveness today. SOSUS and the first generation of FDS are not positioned in areas most likely to see conflict, such as the Persian Gulf. The FSS can be useful in the littorals but it must be installed in advance. Ocean surveillance ships fitted with the surveillance towed array sensor system cannot deploy their arrays or active sources in shallow waters. Also, the system's low-frequency active sonar has only recently renewed testing after a more than five-year moratorium caused by environmental concerns. The ADS — the one surveillance system designed expressly for use in shallow water and littorals — is still years away from being operational.

TECHNOLOGY FOCUS

The Navy is attempting to enhance its sorely lacking ASW capabilities by upgrading existing sensors and weapons and developing new ones. However, all the new initiatives are focused overly on technology and tactical ASW. The Navy's ASW concept of operations issued in 2004 envisioned the near-term fielding of enhanced signal processing, bistatic towed arrays, low-frequency arrays, advanced deployable systems, advanced sonobuoys, periscope detection systems, open architecture torpedoes and torpedo countermeasures. In the long term, the Navy plans to develop distributed netted sensors, rapid-attack weapons, advanced data relays and integrated weapons systems.

Navy leaders believe, if their rhetoric is taken literally, that new technologies will allow the service for the first time to conduct decisive operations against enemy submarines. The concept of operations, for example, stated that "independent action will allow us to seize and exploit fleeting opportunities, thereby compressing the 'kill chain' of locating, identifying, tracking and engaging targets. In this manner, we will greatly increase the rate of which enemy submarines are destroyed."

In 2005, a four-star admiral reportedly stated, based on his experience as a fighter pilot, that "we're going to change ASW

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— awfully slow warfare — to a time-centric context." Such statements are contrary to ASW's true nature. While the importance of technology should not be underestimated, it is doubtful that technological advances will change the very characteristics of ASW. Destroying or neutralizing quiet, conventional submarines in the littorals will be much more difficult and time-consuming than the open-ocean ASW against large and relatively noisy nuclear-powered submarines.

NETWORKED SENSORS

The Navy's ASW research and development in the future will focus on sensors rather than weapons, and networks rather than platforms. In networked ASW, acoustic sensors on board surface ships and submarines are a part of a much wider network of sonars dispersed over a large geographical area. A group of widely dispersed off-board sensors would operate as a single sonar system organic to a group of ships rather than as an individual platform. The use of networked ASW is largely an unexplored area. Moreover, it has never been tested in combat. One problem with the use of networked sensors is their large bandwidth requirement, because of the need to transmit a huge amount of data that are processed by the humans on board ASW platforms.

The Navy did not begin to revive its interest in ASW until 2003, when then-Chief of Naval Operations Adm. Vernon Clark established an ASW Task Force. In April 2004, the Fleet ASW Command was established in San Diego. Its main purpose was to consolidate all Navy ASW training. The new command was also responsible for providing uniform Navy-wide guidance for ASW as codified in the ASW concept of operations.

In October 2006, Mine Warfare Command and Fleet ASW Command were merged and renamed Naval Mine and Anti-Submarine Warfare Command.

Fusing of mine warfare and ASW into a single command was a bad decision. It might have increased efficiency, but to the detriment of the effectiveness. Although both mine warfare and ASW are integral parts of undersea warfare, they are not identical in their main purpose and methods. The result of this decision will most likely be that too much attention is given to either anti-submarine or mine warfare, and there will be competition between the two warfare communities for sorely needed resources.

The Navy has published a relatively large number of doctrinal documents providing guidance for the employment of its ASW forces. A great majority of these documents pertain to tactics of ASW platforms and sensors. None of them provides an overall concept of employing subsurface, surface and airborne ASW forces in combination. The most important naval warfare publication is NWP 3-21, "Fleet Anti-submarine Warfare," which provides an overarching framework for all other documents in the series. NWP 3-21 describes ASW command structure from the theater to joint task force and joint force maritime component commander level. However, its main focus seems to be strike group ASW

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commander or tactical level instead of numbered and theater fleet level ASW. NWP 3-21 does not clearly describe employment of attack submarines, maritime patrol aircraft and ASW surface combatants in combination. The NTTP 3-21.1 "Anti-submarine Warfare Commander's Manual" deals with what is called "Navy tactics, techniques and procedures" and is mainly focused on ASW command of a task group or task force.

NEW OPERATIONAL CONCEPTS

An operational level ASW doctrine should focus on the employment of the Navy's ASW forces as part of the struggle to obtain sea control or contesting the enemy's sea control (sea denial). This, in turn, would require development of an operational concept — a generic outline of employing subsurface, surface and airborne ASW to accomplish desired control of the subsurface as part of sea control. A sound ASW doctrine should not be based on a single operational concept; multiple concepts would ensure flexibility. The Navy needs to develop two separate but interrelated ASW operational concepts — one for sea control and the other for sea denial. The focus in each should be on conducting ASW in the littorals, although the possibility of conducting ASW on the open ocean should not be ignored. Also, the Navy should take a lead and include in its ASW operational concepts the use of combat arms of its sister services. For example, the Air Force can be helpful in the littorals for striking the enemy's submarine bases and related facilities and C4 nodes, and the Army might support ASW efforts by seizing enemy submarine bases.

A major problem in developing a sound ASW doctrine is the lack of the Navy's service or operational doctrine. The original Naval Doctrine Publication 1 (NDP 1) issued in 1994 was supposed to provide guidance for the employment of the Navy's forces at the operational level of war. A revised edition to fill that gap is not yet officially approved, despite eight years of on-and-off work. The new maritime strategy, "A Cooperative Strategy for 21st Century Seapower," is predominantly focused on peacetime operations and those short of high-intensity conflict. It refers to the problem of obtaining sea control as more nations turn to advanced diesel-electric and nuclear-powered submarines. Yet , it does not discuss ASW in detail; indeed, it never mentions the term.

PEACETIME TRAINING

The focus in ASW training, which must be constantly practiced in peacetime, should be in the littorals and shallow water, while not neglecting deep water. Until recently, the Navy's ASW training was drastically reduced because of the declining number of ASW platforms, high tempo of deployments overseas, and the neglect of ASW in general. ASW is still the primary mission for the P-3C crews' annual training. However, the training conducted at the squadron level is about a third of that conducted 20 years ago. Because of the reduction of the P-3C force, there is almost a complete lack of training when a squadron

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returns to home base from deployment.

The Navy uses ASW simulators extensively, yet the simulators cannot replicate the real environment in which ASW platforms would operate in combat. Attack submarines are used to simulate hostile quiet conventional submarines, but they can never truly simulate the capabilities of foreign quiet conventional submarines. Moreover, the number of submarines for training exercises is limited. The Navy's ASW training problems are compounded by the legal interpretations of the Marine Mammal Protection Act by federal courts, especially in California and Hawaii. The law requires permits for activities that may affect marine mammals, and when the Navy trains off Southern California and Hawaii, it must follow a set of some 30 measures governing the use of active sonars whenever marine mammals such as whales and dolphins are spotted.

Despite some significant gains in recent years, the Navy's ability to successfully counter the growing threat of enemy nuclear-powered attack submarines and quiet conventional submarines, especially in shallow water, is sorely lacking. One major problem is that the Navy is overly focused on technology as a solution for ASW. The Navy's efforts to upgrade the existing and develop new ASW sensors and weapons are aimed at enhancing its ability at the tactical, not operational, level. While tactical excellence is critical for success, the struggle for control of subsurface waters cannot be won without a broader and much more important operational framework. Not surprisingly, the lack of the operational perspective resulted in the absence of overarching operational concepts for the combined arms tactics of ASW forces.

The Navy's pervasive and relentless emphasis on combat efficiency instead of combat effectiveness led to the decline in the number of ASW platforms. Moreover, this policy also led to the weakening of certain critically important capabilities. The Navy's belief that new technologies resulted in a significant increase in the combat potential of various ASW platforms is open to debate. What is indisputable is that no matter how advanced, ASW platforms cannot be at several places simultaneously. In any sustained ASW effort, some of these platforms will be destroyed or damaged or put out of service. Another consequence of overemphasizing efficiency is assigning too many missions to ASW platforms.

Because ASW is largely an art and not a science, the human element is the most important element for ultimate success. No machine, no matter how advanced, can replace the human in making a decision that is often based on imprecise and inaccurate data. The skills for successful conduct of ASW must be maintained; otherwise, they will quickly atrophy. The Navy needs to make a much more systematic and broad effort to integrate the theory and practice of ASW into the curricula of all its leading educational institutions. **AFJ**

STRUGGLE *continued from Page 11*

consult with the committee before sending troops to combat operations that are expected to last longer than a week. If there is a reason the president must send troops into combat immediately, he must consult with the committee within three days, the act says. Once the committee has been consulted, Congress must vote within 30 days on a resolution to authorize the use of military force.

If Congress votes against authorizing the use of force, any member of Congress can introduce a resolution of disapproval. If that passes, the president can either sign it or veto it. If the president signs, the war is called off. If, as is more likely, the president vetoes the resolution of disapproval, Congress can try to override the veto, which requires two-thirds of the House and Senate to vote against the president. If Congress overrides the veto, the war ends. If the veto stands, the war goes on, but Congress can resort to other measures, such as cutting off war funds, the commission said in its report.

Owens said members of the Constitution Project are unimpressed.

In its attempts to correct deficiencies in the 1973 War Powers Resolution, the War Powers Commission made mistakes of its own, he said. Unlike the Jones bill, which requires congressional approval before troops can be sent to war, under the War Powers Consultation Act, as long as the president consults, he can send troops to war without receiving permission from Congress. If Congress objects, it must pass a resolution of disapproval and overcome a veto to halt the war — major hurdles.

The War Powers Consultation Act even "provides a number of exceptions to consulting Congress," Owens said, including pre-emptive strikes and response to terrorist acts.

"The commission risks undermining the Constitution's checks and balances by asking Congress to serve as the president's consultant, rather than the other way around," said Mickey Edwards, co-chairman of the Constitution Project's War Powers Initiative.

"The United States Constitution makes it perfectly clear that the declaration of war is the exclusive responsibility of the people's branch" of government, said Edwards, a former Republican House member from Oklahoma.

The framers of the Constitution "thought it essential that those who would do the fighting and dying should have some say through their representatives in the decision to go to war," Edwards said.

While the War Powers Resolution of 1973 is ineffective, the War Powers Consultation Act would likely be no better. The consultation act "is more likely to be useful in reframing a debate" over war powers, "not as actual legislation," Owens said.

Is a debate imminent? "I think so," Jones said. "I think this Congress feels that it did not do its due diligence leading up to the war in Iraq." **AFJ**