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Norman Polmar. *The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet: Eighteenth Edition*. Annapolis MD: Naval Institute Press 2005, 662 pp.

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It might be asked what a historian would expect to find in an up to the minute guide to the world's only superpower navy, and if this book was no more than the title implies, then the answer could be little enough. However, *Ships and Aircraft* does not do justice to the scope and ambition of this volume, or of its predecessors. This large-scale analysis of the US Navy is only based around the key indicators of naval policy, the procurement of capabilities, represented by hardware and human systems. Norman Polmar opens the books with the argument that informs his assessment: 'the US Navy is undergoing probably the most extensive changes since the post-World War II era.' This will be most obvious to those with earlier editions of the book. Comparison with Reagan era 13th edition of 1985 reveals just how extensive the changes have been. This process is encompassed in the current jargon of 'transformation', with Littoral Combat Ships, the loan of an advanced Swedish diesel electric submarine for realistic Anti-Submarine Warfare training, and other new weapons enabling "Sea Power 21" to maximize American advantages in high end technologies, information warfare and global reach. This Navy is changing course, from naval warfare to expeditionary strategy, but the process is far from simple.

All navies are built on people. The US Navy has 365,000 of them, with 290 combat ships. The Marine Corps has another 175,000, and the Coast Guard 40,000. To put things in perspective the Marine Corps alone has more people than the Army, Navy and Air Force of the United Kingdom. An increasing percentage of US Naval personnel are women, currently 15%, and rising, and they feature prominently in pictures of sailors going about their duty.

Before assessing the current and future order of battle Polmar provides the reader with a thorough analysis of the defence organisation of the United States, the place of the Navy within that structure and the fleet and command arrangements of the contemporary fleet. These start with 14 *Ohio* class SSBNs, reduced from 18 by arms limitation agreements. These all carry the D5 missile,

although independent warhead numbers are being reduced. The first four boats are being converted in cruise missile and special forces platforms, with up to 154 Tomahawk missiles. The new *Virginia* class SSNs are now in series production, to replace the ageing *Los Angeles* class. Like all other significant combat and support ships the concept is for a long production run of essentially identical units, to keep costs down. The new SSNs will have a 30 year life for the core for their nuclear power plant, avoiding the need for costly refuelling. SSNs carry significant cruise missile batteries.

The core of the current surface fleet is provided by 12 large deck aircraft carriers carrying 70 aircraft and helicopters. Ten of them are nuclear powered. The *George H W Bush* completing in 2008 will be the last of the *Nimitz* class, ten ships of approximately 100,000 tons built over the past forty years. The durability of the design reflects both the basic soundness of the original, and the enormous cost of change. It is estimated that the largely revised CVN 78 will cost \$12 billion, double that of the older class, largely for the design and development effort. The plan is to halve the current level of personnel, some 3,000 without the air group. This new ship is scheduled for 2014 to replace the *Enterprise*, which would then be 54 years old. The carrier air wings are being rationalised, with the F/A18 carrying all combat tasks until the F-35 Joint Strike Fighter enter service. Similarly the helicopter fleet is being rationalised down to a single type. These choices are cost driven.

By contrast the continued presence of the *Iowa* class battleships on the List is pure sentiment. Two of the four ships have been retained by Congressional demand, but it would require years to re-activate them from their current service as museum ships. This may be the last hurrah for the Dreadnought in a modern work of reference, a remarkable testament to the emotional power of the big gun battleship.

The surface escort force comprises 26 *Aegis* cruisers and 51 destroyers, with total of 62 *Arleigh Burke* class destroyers projected. A new class of destroyers, the 14,000 ton DD(X) class is planned as the follow-on, with greater emphasis on land attack than their Cold War designed predecessors. However, this mission will be conducted from well over the horizon, the experience of the USS *Cole* being only the latest reminder that the littoral is a dangerous place. The frigate force is shrinking rapidly, many of the Oliver Hazard Perry class have been struck off, the rest have had their missile system removed, reducing their military capabilities to a small gun and a helicopter. There are no plans to procure new ships of this type. Instead the Littoral Combat Ship project will provide between 30 and 60 new high speed, low manning assets that can be deployed in the littoral battlespace, where the large, high value surface warships, (and submarines) currently in service would be too vulnerable. This may be a naval attempt to stake a claim in the expeditionary era. However, they are still all but 3,000 tons, and will cost up to \$500 million. The concept provides for 140-ton mission modules to meet inshore ASW, Mine Counter Measures, fire support, and special forces insertion. In reality these are high cost solutions to the problem, and

reflect a concern with acquiring the quality that is incompatible with quantity. These ships will not be expected to operate without air superiority, and almost all their capabilities could be acquired at far lower cost in single role vessels of conventional design. The idea that these ships will be used for Mine Counter Measures, an area where the USN has consistently undervalued a vital enabling asset, seems far-fetched. The USN remains remarkably resistant to simple, effective ships and systems, which it has a history of striking and selling. Furthermore Polmar is concerned that these ships are entirely novel, in hull form, propulsion, weapons systems and concept, and that as any historian of technology will admit, this is a recipe for problems and delays.

This concern with perfection has led to a projected 69,000 ton Helicopter Landing Ship, (LHA), capable of landing 2,000 Marines by MV -22 Osprey type tilt rotor aircraft and flying support missions with F-35 fighters at the same time. This ship would be bigger than any warship planned by any other nation, and cost up to \$4 billion. Together with the current *San Antonio* class dock landing ship procurement this type would renew the American amphibious warfare fleet, and ensure global reach for the Marine Corps into the third quarter of this century. Yet 'The U.S. Navy's leadership continues to be mostly ambivalent about mine warfare. In the 1990s the Navy attempted to discard most Mine Countermeasures (MCM) ships, but was stopped by the Secretary of Defence.' Attempts to create deployable platforms for this mission will remain little more than placebos while effective training and deployment is not undertaken. Historically the USN has paid other navies to conduct the slow, boring business of looking for needles in haystacks. The end of the Cold War changed the dynamics, and in 1991 only the British turned up in time for the conflict. The new USS *Avenger* broke down, leaving the Royal Navy to open up the coastal waters of Kuwait and Iraq. It would seem that the mindset of the USN is far from the 'Littoral'.

The changing pattern of deployment and basing has greatly reduced the auxiliary force, and seen many ships given over to civilian crews run by Military Sealift Command. By contrast Sealift ships, ranging from high-speed Incat type wave piercing catamarans to colossal pre-positioning ships are increasing. Similarly the Coast Guard is increasingly deployed as a constabulary force outside American waters, cooperating with many Third World Navies in missions that do not require advanced weapons.

Polmar does not restrict himself to matters of fact and record. As an experienced defence analyst he has a great deal to say about the longer-term context and the areas where there is room for improvement. Political interference in the naming of ships, and a degree of carelessness in has reduced the once coherent and clear policy of using certain names for certain types to chaos. The SSN 21 class of three submarines contains one named for a fish, one for a state and one for a President. More serious political interference has seen the major programme to procure *Virginia* class SSNs split between two yards, which keeps both active, but at considerable cost in efficiency and taxpayers dollars. That the

SSN 21 class was stopped at three units is highly significant. With the demise of the Soviet Union there are no potentially hostile fleets operating large SSN forces, the real submarine threat is conventional.

The position of the Navy in American defense is hinted at by fascinating 50 year overviews of the strength and procurement of the service since 1945 at the end of the book. Before the Korean War the USN was in trouble, the one major programme was cancelled, and active forces fell to very low levels. The Department of Defence invested heavily in the air borne nuclear deterrent as the answer to all problems. Korea saved the Navy, and as of 2005 the picture, for all the prognoses of doom that remain fashionable, is remarkably strong. National strategy remains expeditionary, and only the Navy can guarantee the ability of the United States to act wherever the threat emerges. The amount of money being spent on new carrier, destroyer, submarine amphibious and littoral programmes dwarfs that of all other navies on the planet, and the size of the fleet is equally striking. The only enemy that could bring down this mighty force in the foreseeable future is internal, and economic. It would be wise to read this testament to naval might alongside the latest figures on the budget deficit.



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