[eBooks] Submarine Design And The Development Of The Astute Class

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*Submarine Design and Development* - Norman Friedman 1984

*Soviet Submarines* - Jan S. Breemer 1989
Discusses the strategic role of Soviet submarines and provides technical information on each class of sub

*Concepts in Submarine Design* - Roy Burcher 1995-10-27
Explores the engineering and architectural aspects of submarine design.

The requirements for evaluating alternative conceptual submarine designs are presented. The morphology of a conceptual design evaluation tool is established and its basic components developed. Digital computer programs are used to facilitate analysis of design parameters. Representative parameters required by the design tool are determined for an existing submarine. A review of current research in the major areas of submarine design is presented. The effects of several of these technological advances are predicted for the example vessel through use of the design tool. (Author).

*Cold War Submarines* - Norman Polmar 2004
Submarines had a vital, if often underappreciated, role in the superpower navies during the Cold War. Their crews carried out intelligence-collection operations, sought out and stood ready to destroy opposing submarines, and, from the early 1960s, threatened missile attacks on their adversary's homeland, providing in many respects the most survivable nuclear deterrent of the Cold War. In Cold War Submarines, Norman Polmar and K. J. Moore provide the definitive history of the design and construction of these undersea fleets.

*Sustaining U.S. Nuclear Submarine Design Capabilities* - John Frederic Schank 2007
Nuclear submarine design resources at the shipyards, their suppliers, and the Navy may erode for lack of demand. Analysis of alternative workforce and workload management options suggests that the U.S. Navy should stretch out the design of the next submarine class and start it early or sustain design resources above the current demand, so that the next class may be designed on time, on budget, and with low risk.

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Submarine Torpedo Tactics-Edward Monroe Jones 2014-11-04 Never-before-published, first-hand accounts of undersea action presented with a summary of torpedo tactics illustrate how a submarine's crew can hit a target that is determined to avoid being hit. Legendary figures in American submarine history come to life in actual logs of undersea warfare, and in accounts of sailors who were in the van of torpedo tactics development. The technology is explained in detail, offering insight into how American subs have been so successful in their hundred-year history. Outlandish gags and pranks of submarine skippers are included, showing just how brazen this elite group of super-competent sailors could be. The reader travels through World War II and the Cold War as submarines and torpedoes enter the nuclear age. Filled with diagrams and illustrations the narration carries the reader into the attack center as "battle stations torpedo!" resounds through a submarine's compartments.

The Fleet Submarine in the U.S. Navy-John Doughty Alden 1979 This book has long been considered the definitive study of the fleet submarine, one of the most successful types of warships ever built. It presents a comprehensive analysis of the submarine's design, construction, and development. The author traces its metamorphosis from the T and V classes through wartime boats and postwar Guppy and other conversions up to the 1980s. Dozens of rare photos, profile line drawings, a detailed type plan, and statistical appendices complement the text in this large format book. The book's wealth of technical data is offered in a frame of historical reference that will appeal to the general reader and World War II history buffs as well as serious students of the submarine.

Navy Attack Submarine Procurement-Ronald O'Rourke 2011-04 Contents: (1) Intro.; (2) Background: Types of Subs. in the U.S. Navy; Attack Sub. Force Levels; Virginia (SSN-774) Class Program; Past and Planned Procurement; Changes in Planned Procurement Rates; Joint Production Arrangement; Cost-Reduction Effort; Sub Construction Industrial Base; Design and Engin. (D&E) Portion; Projected SSN Shortfall; Navy Study on Options for Mitigating Projected Shortfall; (3) Issues for Congress: 48-Boat Force-Level Goal and Planned SSN Procurement; (4) Options for Congress; (5) Legislative Activity for FY 2010. Appendices: Past SSN Force-Level Goals; Views Regarding 48-Boat SSN Force-Level Goal; Options for Funding SSNs; Maintaining Sub. D&E Base. A print on demand pub.

Xr-36 Anti-submarine Rocket Fuze Terminal Design and Development-J. S. BARTOS 1956


Joint Industry Project-1985

United States Congressional Serial Set, Serial No. 15009, Senate Reports Nos. 238-267-United States. Congress. Senate


U. S. Submarines Since 1945, Revised Edition-Norman Friedman 2018-08-15 In the tradition of his acclaimed warship design histories, Norman Friedman describes the forces-technical, political, and operational--that shaped a vital element of U.S. sea power. For example, he examines the evolution in missions, such as forward-based antisubmarine warfare and strategic deterrence, that transformed the submarine from its former subsidiary role to the center of national power. U.S. Submarines Since 1945 is also the story of a technological revolution: first the emergence of fast diesel-electric craft, then the shock of nuclear power, followed by the appearance of submarine-launched ballistic missiles. Nowhere else can a reader find so complete or sophisticated an account of the development of the U.S. submarine force, including not only the hulls, but also the weapons and sensors they carry. The book details what submarines were ordered, what weapons and propulsion systems they had, how they performed, and what sonars and combat systems were developed. This illustrated design history contains more than 100 photographs and more than 100 line drawings, including specially commissioned artwork from technical illustrator James L. Christley. These exclusive illustrations, along with the incisive text, capture the excitement of a revolutionary period in submarine development. Enthusiasts and professionals alike will welcome the abundance of information offered. In this revised edition, Norman Friedman explores what has happened since the Cold War, which means both new classes and new technology (some of it applied to existing submarines). New material includes weapons and sensors as they have developed since 1995. This new technology is explained in the context of very different post-Cold-War priorities. In addition, Friedman includes new information that has become available on submarines described in the earlier edition.

US Submarines 1941-45-Jim Christley 2006-01-31 Naval warfare in the Pacific changed completely with the Japanese attack on Pearl Harbor in 1941. The strategic emphasis shifted from battleships to much more lethal, far-ranging weapons systems; one of these was the submarine. This book details the design and development, classes, weapons and equipment, tactics and operational history of the US submarine in World War II. Detailed tables, photographs, and superb color plates depict the...
force that had an effect far beyond its size - the submarine accounted for 55% of all Japanese shipping losses, despite suffering the highest percentage loss of any unit of the United State Armed Forces in World War II.

**British Submarines in Two World Wars**

Norman Friedman 2019-03-30 Although the Royal Navy did not invent the submarine, Norman Friedman’s new book demonstrates how innovative the service was, to an extent which few will recognize. Its submarines performed well in combat in both world wars, and often in unheralded ways. Few will be aware that in 1914 Britain had the largest submarine fleet in the world, and that at the end of World War I it had some of the largest and most unusual of all submarines – whose origins and design are all detailed. During the First World War they virtually closed the Baltic to German iron ore traffic, and they helped block supplies to the Turkish army fighting at Gallipoli. British submarines were a major element in the North Sea battles, and they helped fight the U-boat menace. These roles led on to British submarine operations in World War II. Readers will be aware of the role of US submarines in strangling Japan, but perhaps not how British submarines in the Mediterranean fought a parallel costly but successful battle to strangle the German army in North Africa. Like their US counterparts, interwar British submariners were designed largely with the demands of a possible Pacific War, although that was not the war they fought. And the author shows how the demands of such a war, which would be fought over vast distances, collided with interwar British Government attempts to limit costs by holding down the size (and numbers) of submarines. It says much about the ingenuity of British submarine designers that they managed to meet their requirements despite enormous pressure on submarine size. As in other books in this series, the author demonstrates how a combination of evolving strategic and tactical requirements and evolving technology produced successive types of design. The Royal Navy was always painfully aware of the threat enemy submarines posed, and British submariners contributed heavily to the development of British anti-submarine tactics and technology, beginning with largely unknown efforts before the outbreak of World War I. Between the Wars British submariners exploited the new technology of sonar (Asdic), both to find and attack enemies and to avoid being attacked themselves. As a result, they pioneered submarine silencing, with important advantages to the US Navy as it observed the British. And it was a British submarine that pioneered the vital postwar use of submarines as anti-submarine weapons, sinking a U-boat while both were submerged. This feat was unique. Heavily illustrated with photos and original plans, this new volume from Norman Friedman, incorporating so much original analysis, will be eagerly awaited by naval historians and enthusiasts everywhere.

**Soviet Cold War Attack Submarines**

Edward Hampshire 2020-09-17 In this highly detailed book, naval historian Edward Hampshire reveals the fascinating history of the nuclear-powered attack submarines built and operated by the Soviet Union in the Cold War, including each class of these formidable craft as they developed throughout the Cold War period. The November class, which were the Soviet Union’s first nuclear submarines, had originally been designed to fire a single enormous nuclear-tipped torpedo but were eventually completed as boats firing standard torpedoes. The Alfa class were perhaps the most remarkable submarines of the Cold War: titanium-hulled (which was light and strong but extremely expensive and difficult to weld successfully), crewed with only thirty men due to considerable automation and 30% faster than any US submarines, they used a radical liquid lead-bismuth alloy in the reactor plant. The Victor class formed the backbone of the Soviet nuclear submarine fleet in the 1970s and 1980s, as hunter-killer submarines began to focus on tracking and potentially destroying NATO ballistic missile submarines. The Sierra classes were further titanium-hulled submarines and the single Mike-class submarine was an experimental type containing a number of innovations. Finally, the Akula class were being constructed as the Cold War ended, and these boats form the mainstay of the Russian nuclear attack submarine fleet today. This book explores the design, development, and deployment of each of these classes in detail, offering an unparalleled insight into the submarines which served the Soviet Union throughout the Cold War period. The text is supported by stunning illustrations, photographs and diagrams of the submarines.

**Defense Issues**

1996
Control of Ships and Underwater Vehicles-Khac Duc Do 2009-08-09 Most ocean vessels are underactuated but control of their motion in the real ocean environment is essential. Starting with a review of the background on ocean-vessel dynamics and nonlinear control theory, the authors’ systematic approach is based on various nontrivial coordinate transformations coupled with advanced nonlinear control design methods. This strategy is then used for the development and analysis of a number of ocean-vessel control systems with the aim of achieving advanced motion control tasks including stabilization, trajectory-tracking, path-tracking and path-following. Control of Ships and Underwater Vehicles offers the reader: - new results in the nonlinear control of underactuated ocean vessels; - efficient designs for the implementation of controllers on underactuated ocean vessels; - numerical simulations and real-time implementations of the control systems designed on a scale-model ship for each controller developed to illustrate their effectiveness and afford practical guidance.


Submarines-Rebecca Stefoff 2006-09 "An examination of the origin, history, development, and impact of the submarine and related underwater exploration and transport technology"--Provided by publisher.


New Attack Submarine-United States 1996


Energy and water development


The Grand Fleet-D. K. Brown 2010-07-30 "Indispensable for any naval historian . . . charts the evolution of warship design and development in the years 1906-1922 in the United Kingdom."—International Journal of Maritime History The launch of HMS Dreadnought in 1906 ushered in one of the most rapid periods of warship development in history; and only ten years after this all-big-gun, turbine-powered battleship was completed, two entire fleets of Dreadnoughts would meet at Jutland and put the work of the prewar designers to the ultimate test. The renowned warship author, D. K. Brown, examines the development of these vessels and looks at how wartime experience affected warship design. As well as battleships and battlecruisers, for the first time the developmental history of smaller vessels such as minesweepers, monitors and escort vessels, built in direct response to wartime needs, is described, as is that of the submarine and aircraft carrier. A detailed study is made of battle damage, including the role played by ammunition explosions in the loss of three British battlecruisers at Jutland. Also described are the postwar capital ship designs, killed off by the Washington Treaty, which are among the most fascinating "might-have-beens" of naval history. A classic work again available for historians and enthusiasts, detailing the development of all those ships that enabled the Royal Navy to rule the waves supreme and defend country and empire. "The author has managed to make the technical detail accessible to the layman and consequently it is easy to read as well as being authoritative. Deserves to be on the bookshelf of any nautical enthusiast. Very highly recommended."—Marine News

Visible Costs and Invisible Benefits-Gunnar Eliasson 2017-11-16 This book examines the historic role of professional and demanding military customers in industrial development. Particular emphasis is paid to public procurement of military equipment as a catalyst for innovation; and the civilian commercialization of military technologies (from gunpowder and cannons to submarines, missiles and aircraft) is documented by many case illustrations that show
how macro-level productivity advance has been generated. A complementary volume to Advancing Public Procurement as Industrial Policy (2010), which focused on the spillover effects of the Swedish combat aircraft, Gripen, in this book Gunnar Eliasson widens the perspective to cover product development across the Swedish defense industry, with an emphasis on regional economic development and macro-economics, inter alia through the involvement of Saab (aircraft) and Kockums (submarines) in partnership ventures in Australia, Norway and Brazil. The volume is organized into four parts. Part one examines the historical transformation of the Swedish economy over the past three centuries from agriculture and raw materials to an advanced industrial economy. Part two presents detailed case studies to illustrate the spillover effects of procurement projects and military-industrial partnerships. Part three explains the spillover phenomenon theoretically within a dynamic micro- to macro-economic perspective. Particular emphasis is placed on the empirical credibility of model-based economy-wide and dynamic cost-benefit calculations. The book concludes with a section on fostering industrial development through public procurement. The result is a book that will appeal to economists in the industrial economics and management fields; to technical, marketing and purchasing executives in business; and to policy makers in public procurement concerned with innovation and long-run industrial development.

Development of a Six Degree of Freedom Motion Simulation Model for Use in Submarine Design Analysis

- John Thomas Hammond 1978