



Keep  
**Securing**  
the Future

*Accelerating Submarine Procurement*

*The Case for Nuclear Submarines*

# Why Submarines?

In the five domains in which our military forces operate—on land, in the air, on the sea, beneath the sea, and in space—it is undersea operations that are the least visible. This makes submarine operations extraordinarily valuable. They offer the ultimate in stealth and surprise while influencing events in all five domains. Therefore, they can have the highest impact at the least risk. Unfortunately, because they are the least visible and highly secretive in nature, these operations are least understood and most frequently undervalued.

## Because Access Matters

The United States depends on the forward presence of the U.S. Navy to protect and defend its global economic and security interests.

Experience since the end of the Cold War and current weapons proliferation trends indicate that potential adversaries can obtain inexpensive, technologically sophisticated weapons systems, such as:

- ultra-quiet diesel submarines
- low-cost mines
- information warfare technology
- tactical ballistic missiles
- coastal and anti-ship cruise missiles, and
- chemical and biological weapons of mass destruction.

Modern U.S. attack submarines possess inherent characteristics, such as stealth, endurance, mobility, firepower, and multi-mission flexibility, to operate against all of these threats.

These submarines can operate in both open-ocean and littoral regions with relative impunity while monitoring, assessing and, when necessary, destroying an enemy's ability to wage war.

# U.S. Nuclear Submarine Missions

## Conventional Operations Capability

Regardless of air defense, precision missiles, or weapons of mass destruction, submarines can enter the marine battle space and deliver conventional strikes every time.

## Special Operations

Submarines can insert and extract special operations teams in many of the most dangerous and critical environments.

## Surveillance and Reconnaissance

Unpredictability, proximity, endurance, and stealth make submarines ideal surveillance and reconnaissance platforms. They can see what no one else can.

## Intelligence

Stealth and high-technology components on submarines collect unique and critical intelligence about America's adversaries during times of peace and war.

## Sea Control

The vast blend of submarine capabilities make it the linchpin in America's ongoing struggle to assure trans-oceanic and littoral sea control during times of tension and conflict.

## Mine Warfare

Submarines are adept at both laying mines, and detecting and reporting mines.

## Nuclear Deterrence

Many nations maintain significant nuclear warfighting capabilities. Submarines can provide unique early indications and warnings regarding deployment of these assets.

## Conventional Deterrence

Potential adversaries cannot know where U.S. submarines are, increasing risk in any operations, such as an invasion of Taiwan.



# The Current U.S. Submarine Force Can Not Meet Mission Requirements

## Total U.S. Attack Submarine Force

**April 2008**

46 Los Angeles Class

3 Seawolf Class

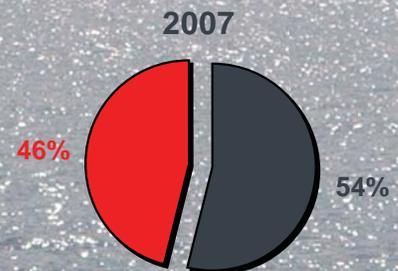
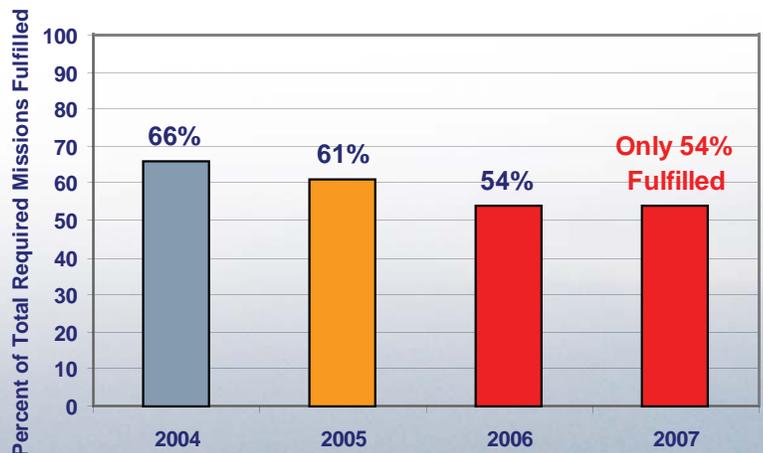
4 Virginia Class

**53 Total**

## This Submarine Force Is Already Too Small

The Navy reports that in 2007 the U.S. Submarine Force met just 54 percent of mission days requested by the Combatant Commanders, down from 66 percent in 2004.

## The U.S. Navy's Ability to Fulfill Required Submarine Missions Is Already Declining



■ Requirements Met ■ Requirements Unfulfilled

# The Planned U.S. Submarine Force

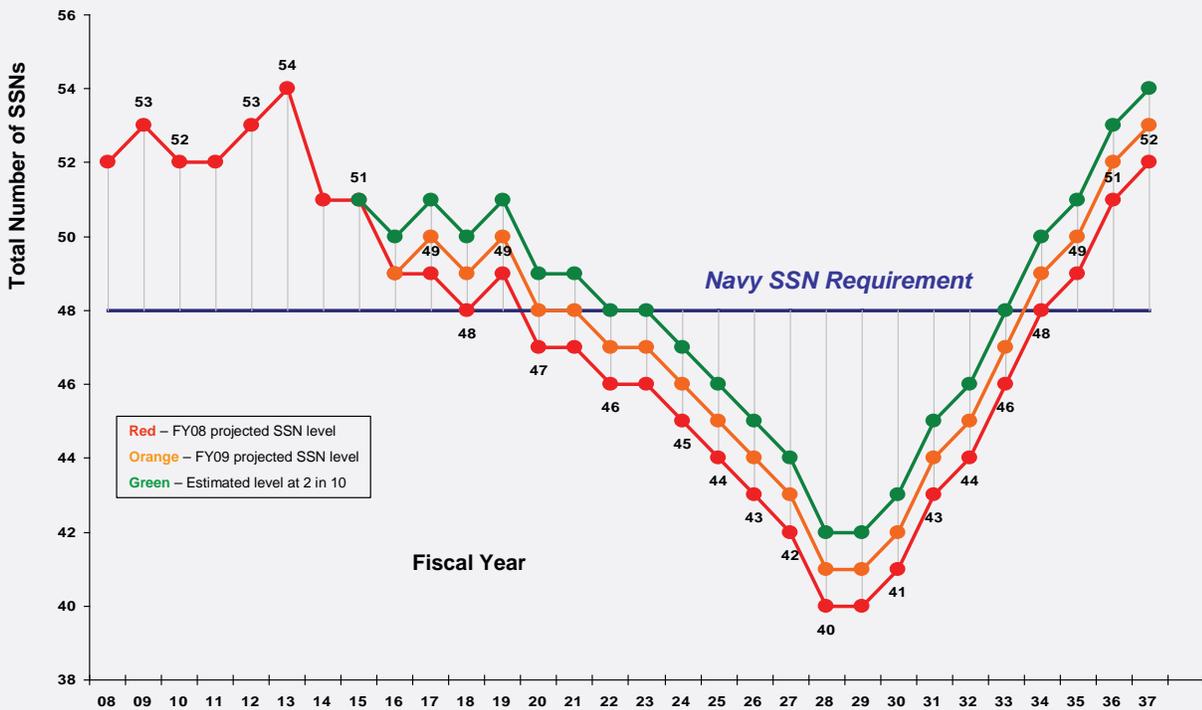
## Falls Below Stated Minimum Requirements

The Navy says it requires 48 attack submarines to fulfill its requirements, but it cannot even meet its current mission requirements at today's force level of 53 submarines, and cannot maintain 48 submarines in the future. Under the Navy's shipbuilding plan, with two pre-year procurements starting in 2011, the attack submarine force will eventually drop to 41 ships. In reality, the situation will probably be worse, as the Navy's plan counts on every ship remaining in service for the full duration of its expected service life. That has not happened in decades.

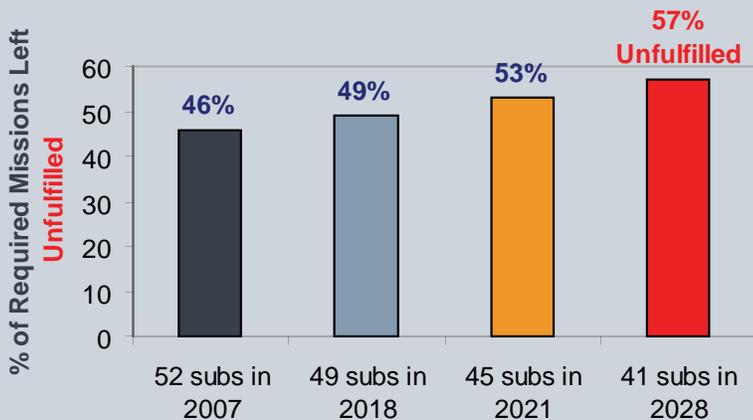
### ATTACK SUBMARINE FORCE LEVELS, FY2008 – FY2037

3 Scenarios: FY08 Baseline, FY09 Baseline at 2 in 11, estimated FY10 baseline at 2 in 10

Source: Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2008; Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY2009



### Percentage of Required Missions Left Unfulfilled Rises as Number of Submarines Declines



“In 2007, the attack submarine force was only able to meet 53 percent of missions requested of it—and it will be asked to continue to “do more with less” as the demand for their unique stealth and intelligence capabilities increases while force levels decline.”

21 Members of Congress, in a letter to the Defense Subcommittee of the House Appropriations Committee, June 17, 2008

## The U.S. Force Is Shrinking

# While The Threat Is Increasing



Iranian leader reviews the Noor, a long-range anti-ship cruise missile based on China's C-802 Saccade missile—one of the world's most lethal. Submarines are the only naval ships immune to these weapons. Photo: Iran Military Forum



Chinese submarine-launched cruise missile

### Rising China Threat Unmet If U.S. Navy Doesn't Seek Funds To Counter It, Analysts Say

—Defense Daily, 11 January 2008

"...Questions have arisen in Congress, in the Navy and among analysts as to what sort of response the United States should be making to counter Chinese moves. But not much will happen, on the U.S. side, if the Navy doesn't request needed funds. 'I think it would help the Navy if they actually asked for more money, which the Navy has spent most of the last seven or eight years studiously not doing,' [a CRS analyst] said. 'So if you're not actually asking for more money, it really doesn't matter what to publish or not publish in terms of your strategy.'"

## The Cruise Missile Threat Is Real

Advanced anti-ship cruise missiles specifically designed to defeat U.S. defenses are proliferating world-wide, particularly in the Middle East and Asia Pacific. U.S. attack submarines are best equipped to address the rising threat of anti-ship cruise missiles launched by enemy submarines, aircraft, surface ships, patrol craft, and coastal batteries.

## Advanced Electric-Diesel Subs Are Proliferating

"The proliferation of diesel submarines in the Pacific is one of the major factors behind the Navy's decision to move six submarines from the Atlantic Fleet to the Pacific Fleet, says Rear Adm. Joseph Walsh, commander of the Pacific Submarine Force. Because more than 140 diesel subs are within reach of critical "choke points" in the area, anti-submarine warfare is Pacific Fleet's top war-fighting priority, he adds."

*National Defense, April 2008, "Quiet But Deadly, Diesel-Electric Submarines, The U.S. Navy's Latest Annoyance," by Grace V. Jean.*

New diesel subs employ advanced technologies, such as cavitation-reducing propellers and acoustic tiles, which make them ultra-quiet and hard to detect.

## Russia Is Reinvigorating Its Shipbuilding Industry By Selling Kilo-Class Subs

"Russia has exported 30 Kilos around the globe and 26 are still in active service. It will deliver two more submarines to Algeria by 2010, five to Venezuela by 2020, and six to Indonesia by 2018. China received its 12th and final Kilo last year. The number of Kilos that are being sold is particularly concerning because many of the submarines are equipped with Klub anti-ship cruise missiles."

*National Defense, April 2008, "Quiet But Deadly, Diesel-Electric Submarines, The U.S. Navy's Latest Annoyance," by Grace V. Jean.*

# China's Submarine Capability Is Expanding Rapidly

## Chinese Subs Already Outnumber U.S. Subs In Pacific

"They have 65 submarines. They're building more. That's nearly two and a half times the number of submarines that we have in the Pacific."

### Admiral Timothy Keating

Commander, U.S. Pacific Command  
Before the Senate Armed Services Committee, March 11, 2008

## China Building Six Subs For Every U.S. Sub Built

"China is outstripping us in production by more than three to one. And if you add the boats that they're acquiring, the Kilo purchases from Russia, it looks like it's five or six to one in terms of building their force as opposed to ours."

### Congressman Duncan Hunter

Ranking Member of the House Armed Services Committee, at a hearing on the Posture of the Pacific Command, March 12, 2008

## By 2020 China Will Have 75 Modern Subs

"[China] fielded 12 new submarines in 2004-2005.... New boats, nuclear boats as well as modern diesels, are entering the fleet sooner than originally predicted.... And they are looking at building six SSBNs and 12 SSNs by the year 2020. Equally alarming is that they have built recently a very modern and the largest modern diesel fleet in the world.... At this pace, China will have at least 75 modern submarines by the year 2020."

### Vice Admiral (Ret) Albert Konetzni, Jr.

USN, Former U.S. Pacific Fleet, before the Projection Forces Subcommittee of the House Armed Services Committee, March 28, 2006

## China's Current Sub Fleet:

4 Attack Submarines (SSN)

2 Ballistic Missile Submarines (SSBN)

~58 Diesel Submarines

**~64 Total**



Two Jin Class (Type-094) ballistic missile nuclear submarines at Bohai Shipyard in Huludao, China. When equipped with the JL-2 missile, capable of delivering nuclear warheads over 8,000 kilometers, the Type-094 can hold parts of the United States at risk from Chinese waters. If patrolling off the Russian coast, the Type-094 could target about three-quarters of U.S. territory. Photo: Chinese Internet

In 2028, when China will have more than 75 modern subs in the Pacific, the U.S. will have only 24 subs in the Pacific Fleet.

# What does the Navy say?

## Submarines Are The Navy's Most Important Tool



"I'm not a submariner, but I tell you that submarines are the most important tool that I have, and anti-submarine warfare is my number one warfighting priority."

### Admiral Gary Roughead

*Seapower Magazine, August 2006 Then Commander, U.S. Pacific Fleet, (Current Chief of Naval Operations)*

## China's Submarine Force Is A Concern

"[The Chinese] are developing technologies that indicate a strategy that goes beyond harmonious integration and peaceful rise....[T]hey are developing submarine technology that is of concern to us....They're quiet. They're stretching or they're expanding the areas of blue water Pacific. They're coming outside their littoral waters."

### Admiral Timothy Keating

*Commander, U.S. Pacific Command*

"[The] People's Liberation Army Navy have about 65 submarines. Half a dozen of them are nuclear powered. Of those, two of them are ballistic missile carrying nuclear submarines. So four attack boats, two nukes, about 58 or so diesel boats. **They're good and getting better.**"

### Admiral Timothy Keating

*Commander, U.S. Pacific Command*

*Before the House Armed Services Committee, March 12, 2008*

## As The U.S. Submarine Force Shrinks, Enemy Capabilities Will Improve

**Congressman Gene Taylor:** "If I may, Admiral, I can't believe that any of our foes get weaker between '13 and '20...."

**Rear Admiral Joseph Walsh,** Director, Submarine Warfare Division: "Right. In fact, the Navy believes that the capabilities of potential competitors will improve between 2013 and 2020. So we agree with you that the capabilities of some of these Pacific nations will improve, particularly in the area of undersea warfare."

- March 28, 2008

## The Navy Needs More Submarines To Address Shortfalls Between 2020 and 2034



"If you look at that 30-year shipbuilding plan, you can see that from about 2020 to 2034 or so...we will be below 48 submarines."

### Admiral Michael G. Mullen

*Then Chief of Naval Operations (Current Chairman of the JCS) Hearing of the House Armed Services Committee, March 1, 2007*



"As the submarine force commander...of course I would love to have two additional submarines, as you suggest. We could use them. They would greatly mitigate the problem that we'll have between 2020 and 2033."

### Vice Admiral John Donnelly

*Commander, Submarine Force, Hearing on Submarine Force Structure and Acquisition Policy, House Subcommittee on Seapower and Expeditionary Forces, March 8, 2007*

"I could use more submarines, and ships for that matter."

**Admiral Timothy Keating,** *Commander, U.S. Pacific Command Before the House Armed Services Committee, March 12, 2008*

# What does Congress say?

## Planned Submarine Numbers Are High-Risk

**Congressman Roscoe Bartlett:** Mr. O'Rourke, at which risk level are we when we get to 40 submarines, if the four choices are red line, high, moderate, and low?

**Ronald O'Rourke, Congressional Research Service:** "...At 40, I think we are flirting with high risk."

March 28, 2006

## China's Submarine Force Is A Concern



"[T]he growing size of China's attack submarine fleet is a continuing concern, particularly in light of the fact that only 65 percent of PACOM's presence requirements for attack submarines are being met with a U.S. force of what is today 52 submarines, but which will fall over the long term to only 41 attack submarines."

**Congressman Duncan Hunter**

*Ranking Member of the House Armed Services Committee, at a hearing on the Posture of the Pacific Command, March 12, 2008*

## U.S. Submarine Shortfalls Create an Opportunity for Enemies

"Although the deepest part of the SSN shortfalls lasts only a few years, potential adversaries can know years ahead of time when this period will occur and make preparations to take advantage of it."

**Ronald O'Rourke**

*Specialist in National Defense, Congressional Research Service, Before the House Armed Services Committee Projection Forces Subcommittee, March 28, 2006*

"As we look at our current national security needs and the long-term challenges ahead, it is clear that one of the most important actions that we can take now is to increase attack submarine procurement to at least two a year as soon as possible."

**Congressmen Joe Courtney, J. Randy Forbes, James R. Langevin, Robert J. Wittman and Brad Ellsworth,**  
*Commander, in a Dear Colleague letter to Congress, urging support for the House FY2009 Defense Authorization bill, May 2008*

# Shortfalls in Top-Level Funding Are Forcing the Navy to Sacrifice Its Most Successful Programs

According to the Congressional Budget Office, **the Navy’s shipbuilding plan** requires twice the funds allotted for shipbuilding, and even if executed as planned, **leaves significant shortfalls** in certain ship classes.

“Executing the Navy’s most recent 30-year shipbuilding plan will cost an average of **about \$25 billion a year** (in 2009 dollars), or double the \$12.6 billion a year the Navy has spent, on average, since 2003.

“...the Navy’s 2009 plan would fall short of the service’s stated goals for a number of the components of the fleet. The Navy would experience **shortfalls** in **attack submarines** (41 in 2028–2030 versus a stated requirement of 48), **guided-missile submarines** (none after 2028 versus a stated requirement of four), **ballistic missile submarines** (12 after 2030 versus a stated requirement for 14), one **LPD-17** amphibious transport dock, and two **T-AKE** logistics ships for the service’s future MPF squadron.”

*Statement of Eric J. Labs, Senior Analyst, Congressional Budget Office, Current and Projected Navy Shipbuilding Programs, before the Subcommittee on Seapower and Expeditionary Forces, House Armed Services Committee, March 14, 2008*



## CBO Projected Shortfalls By Ship Type

Ship Type	Shortfall
Attack Submarines (SSN)	7
Guided Missile Submarines (SSGN)	4
Ballistic Missile Submarines (SSBN)	2
LPD-17	1
T-AKE	2

## Congress Has Recognized These Shortfalls



**Congressman Gene Taylor:** “The current shipbuilding plan for the 313 ship fleet is pure fantasy. It is totally unaffordable with the resources the Department of Defense allocates to the Navy for ship construction.

...As I analyze the shipbuilding plan I see **four programs that are building ships on time and on budget. Those are the LPD 17 class amphibious assault ships, the Arleigh Burke Class destroyers, the Virginia Class submarines, and the T-AKE Dry Cargo Ammunition Ship.** And what is the Navy answer to programs which build ships on cost and schedule?

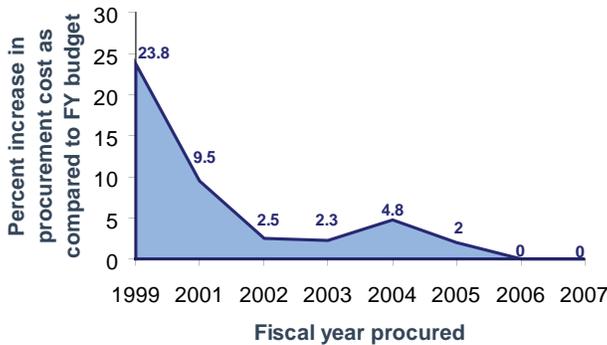
- Cancel the LPD 17 before the minimum Marine Corps requirement of 11 ships is achieved;
- Cancel the DDG 51 Burke destroyers in favor of a brand new ship with 10 major technological innovations that may end up costing five times what an Arleigh Burke costs;
- Continue to delay construction of two submarines a year until 2011; and
- Cancel the last two ships of the T-AKE class.”

*HASC Seapower and Expeditionary Forces Subcommittee Chairman Gene Taylor, Hearing on the Fiscal Year 2009 Budget Request for Ship Construction, March 14, 2008*

# The Virginia-Class Submarine Is The Navy's Most Successful Shipbuilding Program

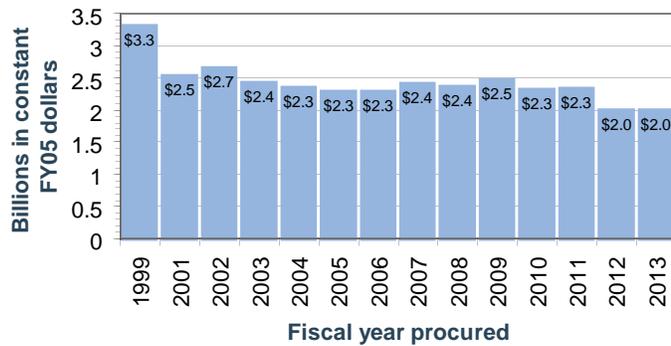
**Fact: Virginia Class is the Only Naval Ship Program Declining in Cost**

Virginia-Class Submarine Costs Meet Budget Expectations



**Fact: Increasing Sub Production Will Further Lower Unit Cost**

CRS Data: Average Estimated Procurement Cost, Two Subs Per Year Starting in 2012



## Congress Can Accelerate Submarine Procurement

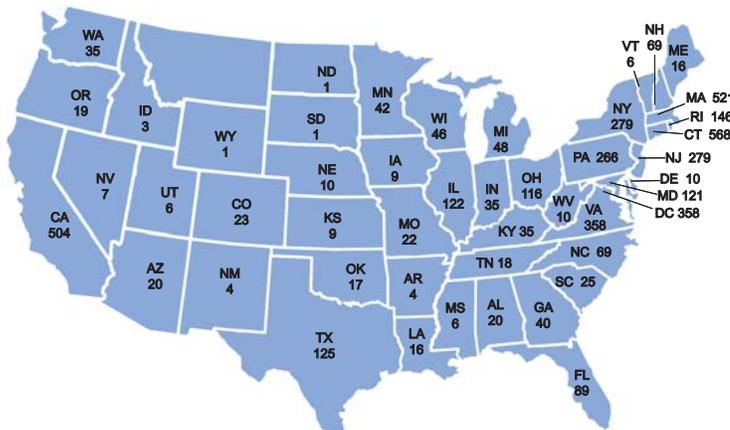
In 2007, national security supporters in Congress took crucial action to address the Navy's shortfall of attack submarines. Congress resolved to increase Virginia Class submarine production by funding one year of advanced procurement— the propulsion system, reactor components, and other “long-lead” materials and parts for one additional sub. Navy leadership responded decisively, and as a result, the Navy's shipbuilding plan now includes two subs per year starting in 2011. This reduced the projected submarine shortfall to seven boats, and reduced the duration of the shortfall to 12 years.

“Congress has the option of accelerating the full funding of this additional submarine from FY2011 to either FY2010 or FY2009. Doing so could make it **possible to fund another one or two additional submarines in FY2011 and/or FY2010**, which would further reduce the projected depth and duration of the shortfall.”

### Ronald O'Rourke

Specialist in National Defense, Congressional Research Service, Before the House Armed Services Committee Subcommittee on Seapower and Expeditionary Forces Hearing on the Navy Shipbuilding Budget Request, March 14, 2008

Congress can now continue to accelerate submarine procurement by funding \$722 million in advanced procurement in Fiscal Year 2009. This will provide the Navy the procurement flexibility to support an additional Virginia-Class submarine in 2010, reducing the projected submarine shortfall to six boats.



Source: Submarine Industrial Base Council

*Accelerating submarine procurement will also provide stability to the submarine industrial base. Eighty percent of the United States' submarine sub-vendors are sole-source suppliers.*

# We Must

Build Our Submarine Force Today



## Conventional Submarines-Multi-Purpose Assets for Expeditionary Warfare

—Naval Forces, 1 September 2007

"Today's modern submarines are versatile assets in security policy. This is achieved by using state-of-the-art technological solutions in real-time communications, unmanned underwater vehicles, propulsion and weapons. Future submarines will become even more flexible platforms by means of applying an even more modular design, which allows the units to be specifically tailored for a wide range of missions across the operational spectrum. Therefore modern submarines are and will remain multi-purpose platforms and premier naval units for the foreseeable future...."

# If We Want

An Effective Force Tomorrow

