

USS Zumwalt (DDG 1000... or BB 65?)





Background





Naval Revolution



- HMS Dreadnought (1906)

- New weapons system
- New fire control system
- New propulsion system
- Modified hull form



- USS Zumwalt (2013)

- New weapons system
- New fire control system
- New propulsion system
- **New hull form**
- **New C2 system**
- **New crew concept**
- **New maintenance concept**
- **New Logistics concept**





DDG 1000 History

- 1992 *Iowa* class battleships de-activated
- 1994 SC-21 (Surface Combatant for the 21st Century) Program
- 1998 DD 21
- 2001 DD(X)
- 2006 DDG 1000 Named "Zumwalt"
- 2008 Construction Contracted with BIW
- 2009 Nunn-McCurdy review
- 2009 Construction Begins at Bath, ME
- 2011 Keel Laying
- Feb 2013 PCU Established (Crew begins to assemble and train)
- Oct 2013 Launched
- May 2014 Christened
- Dec 2015 Sea Trials
- May 2016 Delivered
- Oct 2016 Commissioned (Baltimore)
- Dec 2016 Arrived San Diego
- Nov 2017 Re-Missioned for Surface Strike
- 2018-2019 Fleet Introduction & Trials





Building Leviathan



340,000 work orders
6,900 tons of steel
230 tons of welding rod
475 miles of cable
45 miles of pipe
78,000 gallons of paint

\$4.1 Billion





Capability Overview

Hull

Wave-Piercing Tumblehome

Sensors

- SPY-3 X-Band Multi-Function Radar (MFR)
- HF & MF Bow Sonar Arrays
- Multi-Function Towed Array
- EO/IR System
- ES System
- EXCOMMS – Alternative Navy C4I POR

Weapons

- (80) Peripheral Vertical Launch (PVLS) cells for Tomahawk, ESSM, SM-2, VLA
- (2) Advanced Gun System (AGS) 155 mm guns
- (2) MK 46 Close In Guns Systems (CIGS)

Characteristics

Overall Length	610 ft	Displacement Full Load	~16,500 tons
Maximum Beam	80.7 ft	Installed Power	78 MW
Navigational Draft	27.6 ft	Crew Size	147
Speed	30 kts		(plus 28 person aviation detachment)

Aviation

(2) MH60R and UAVs

Integrated Power System (IPS)

- (2) Main Turbine Generators (MTG)
- (2) Auxiliary Turbine Generators (ATG)
- (2) 34.6 MW Advanced Induction Motors

Boats

(2) 11m SOF RHIBs



Key Design Concepts

Reduced Signatures

- *Radar cross section, sound levels, infrared, magnetic*

Increased Survivability

- *Robust structure, redundancy (4 Fire Zones), automated damage control*

Increased Efficiency

- *Electric propulsion, streamlined hull form, optimized electrical distribution*

Excess Capacity

- *Electrical generation, computing power, space, weight, cooling*

Reduced Crew Size

- *147 Sailors (~320 on DDG 51 class)*

Multi-Mission Warship...Very Different From Previous "DDG" Classes

Inherently Offensive by Design





People Changes



Training

- Established processes
- Well defined roles
- Mature support infrastructure

Education

- Dynamic processes (pseudo-AI)
- Fluid roles
- Limited support infrastructure



Re-Missioning & Fleet Introduction



Land Attack

**Surface Strike
SOF Support
Flag Command Ship**





ADM Elmo Zumwalt



Youngest CNO (1970-1974)

- Promoted over 40 seniors
- Revolutionized Navy Tech & Culture
 - High Low Mix
 - Concentrated Fires
- 121 "Z Gram" Policies
 - Racial & Gender Equality
 - Navy Families/Ombudsman
 - Sailor QoL
 - CMC Program
 - Meritorious Advancement
- Agent Orange Victim Advocate

"I have a good many friends and a good many enemies. I'm equally proud of both."

[The Legacy of Admiral Zumwalt \(navy.mil\)](http://navy.mil)



Q & A



“If Batman had a ship, it would be USS Zumwalt”

- ADM Harry Harris, DDG 1000 Commissioning