Sea Shadow
1983 to 2006
Program History

DARPA / Navy Sponsor

• Designed & Built in 23 Months CY 83-85
• At-sea Signature Testing CY 85-86
• Reactivated & Modified CY 92-93
• Signature & Performance Testing CY 93
• Fleet Exercise CY 94
• Analysis & Applications CY 86-87 & 93-97
• Fleet & Industry Test Ops in San Diego CY 97-06
**Dimensions & Outline**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>560 LT</td>
</tr>
<tr>
<td>Overall Length</td>
<td>164 Ft</td>
</tr>
<tr>
<td>Beam, Maximum</td>
<td>68 Ft</td>
</tr>
<tr>
<td>Draft</td>
<td>14.5 Ft</td>
</tr>
<tr>
<td>Lower Hull Dia, Max</td>
<td>10 Ft</td>
</tr>
<tr>
<td>Upper Hull Clearance</td>
<td>8 Ft</td>
</tr>
<tr>
<td>Propulsion</td>
<td>Diesel Electric</td>
</tr>
<tr>
<td>Sea State</td>
<td></td>
</tr>
<tr>
<td>Operate</td>
<td>SS-4</td>
</tr>
<tr>
<td>Survive</td>
<td>SS-5</td>
</tr>
<tr>
<td>Range*</td>
<td>1000NM @ 10 Kt</td>
</tr>
<tr>
<td>Payload Capability</td>
<td>51 LT</td>
</tr>
</tbody>
</table>

* Required range; tank volume accommodates 2250 NM
Improved Seakeeping

HEAVE MOTION RESPONSE CANTED STRUTS

Wave Period in Seconds

Heave Amplitude vs Wave Height

0° 15° 30° 45°

Strut Cant
Power & Propulsion System

- 600/440V XFMR
- SWITCHGR SCR'S
- 750 KW 600V GEN
- PORT
- DIESEL
- STBD
- OIL LUBE S.T. BRG
- PROP
- FLEX COUPLING
- TILT PAD THRUST BRG
- 800 HP DC PROP MOTOR
- 4:1 REDUCTION GEAR
- COMMON BEDPLATE RESILIENT MOUNTS
- BRIDGE CONTROL
Reduced Manning Bridge
Reduced Manning Engineering Station
Ship Monitoring & Control System

- RTU-1, RTU-2, RTU-3, RTU-4, RTU-5, RTU-6
- DGDU-1, DGDU-2, DGDU-3, DGDU-4
- FXTU-1, FXTU-2, FXTU-3, FXTU-4
- PUMP RM
- PASSAGE
- CANARD RM
- SWITCH GEAR RM
- DIESEL GENERATOR RM
- PROPULSION/STABILIZER ROOM
- BRIDGE
- UPPER HULL
- LOWER HULL (PORT)
- LOWER HULL (STBD)

- COMPUTER A
- COMPUTER B
Manufacturing
Hughes Mining Barge
Modified to support Sea Shadow at-sea Ops
Hughes Mining Barge (former life)
Hughes Mining Barge
Modular Construction

- 4 Separate Hull Module Fabrication Facilities
- HTS Frames
- HY 100 Shell
HMB with Construction Structure
Propulsion Systems
Bridge Development & Test Bed
January 1985
February 1985
STBD Bow
Port Stern
Stern
Payload Bay
Ready for Sea Testing
Transit Under Bay Bridge
Under Golden Gate Bridge
Headed to Santa Cruz Island
Santa Cruz Operations
SCARF
Santa Cruz Acoustic Range Facility
SCRIF
Santa Cruz Radar Imaging Facility
SCRIF
The Radars
Testing on the Santa Cruz Range
Crew Access from SC Island to HMB

Transit Boat Access Dock

386 Stairs and Trail to Bunk House
Small Boats replaced by Helo

Small Boat Docking to side of HMB

Helo Landing on HMB
HMB and Single Point Moor at SCI
Helo Landing on the HMB
San Francisco Bay Operations
Sec Def Dr William Perry 1993
Dr Perry Receiving Gratuitous Advice
San Diego Operations
HMB 1 with Sea Shadow
Naval Station San Diego Pier
THE FUTURE OF
SHIPBOARD EW

New Technology, New Applications

PLUS:
International Attention on
Helicopter Protection
A New Look at EW Export Restrictions
Fighting Joint
Stealth on the Surface
Waging Peace in Bosnia
The Gator Stumbles
Lockheed Sets Team To Pursue DoE Project

Lockheed is leading a unique high-technology team to compete for management and operation of the Department of Energy’s Idaho National Engineering Laboratory (INEL). In making the announcement at a news conference in Idaho Falls, Idaho on September 15, Lockheed Chairman Dan Tellep said the corporation will form a new company called Lockheed Idaho Technologies to carry out its mandate.

On the Lockheed INEL team are Rust International Inc., Duke Engineering & Services, Babcock & Wilcox, Parsons Environmental Services, Thermo Electron, and Coleman Energy & Environmental Systems.

“Lockheed and its partners bring outstanding complementary skills to meeting the challenge of INEL’s transition to a new energy and environmental mission,” Tellep said. “We are excited about the prospects of working with INEL’s highly skilled team and working to create new opportunities for them, Idaho and the nation.”

The Department of Energy’s (DoE) Idaho Field Office issued a request for proposals April 23, 1993, asking for companies positioned to challenge the status quo, revitalize U.S. industry and transfer technology to the commercial sector. Proposals for the five-year, $1 billion contract are due November 1, with contract award scheduled for June 1994. The winning team will consolidate the five primary contracts currently in effect.
From the Newsstand at the Grocery Store

**Weekly World News**

Space creature survived UFO crash in Arkansas!

**HILLARY CLINTON ADOPTS ALIEN BABY**

Secret Service building special nursery in the White House!

**NAVY LAUNCHES DEADLY NEW STEALTH WARSHIP!**

Top secret 'Batboat' carries enough nuclear missiles to blow every major city on Earth to kingdom come!

The U.S. Navy has launched a secret fleet of high-speed “invisibles” stealth warships to patrol the troubled waters of the world — and with only a four-man crew, each can carry enough nuclear missiles to wipe out every major city on Earth!

Devised the Batboat, the U.S. Navy warships are equipped with the same technology that gave the Air Force its deadly arsenal of supersecret Stealth Fighters and Stealth Bombers.

Shocker: Kids drink twice as much caffeine as adults!

American toddlers get 1 or 2 daily allowances of the drug in the soft drinks they allow their children to drink. Caffeine is only a small portion of the caffeine kids get from gummy bears, hard candy, and other foods and drinks.

Use your horoscope to pick the right pet, says psychic

By BEN PACE

ABC News reports that a psychic has found the perfect pet for each star sign. The psychic, who has read for stars and planets, claims that the right pet can bring good fortune and stability to the owner.

LIBRA (Sept. 23 - Oct. 22)

Libras are known for their charm and magnetic appeal. They are also known for their love of beauty and fashion. Libras are drawn to things that are visually pleasing and they are often attracted to things that are new and exciting. Libras are also known for their love of socializing and they are often found in social situations. Libras are also known for their love of animals and they are often drawn to animals that are new and exciting. Libras are also known for their love of animals and they are often drawn to animals that are new and exciting.
NAVAL FORCES
INTERNATIONAL FORUM FOR MARITIME POWER

- STEALTH IN MODERN NAVAL WARFARE
- NAVAL APPLICATIONS FOR HOVERCRAFT
- PROCUREMENT PROGRAMMES IN THE MIDDLE EAST
- CHINA’S PLA NAVY, THE (R)EVOLUTION
- LATIN AMERICA FOCUS
- SHIP PROFILE: “COMANDANTE FULGOSI”
Arsenal Ship

MISSILE SHIP
CONCEPT ARRTG
FULL LOAD DISPL - 20,000 LT
9/13/95

WEAPONS PAYLOAD
VLS - 384 TUBES
2 - MLRS LAUNCHERS
- 144 M26 PODS STOWED
(864 M77 ROCKETS)
2 - NTACMS LAUNCHERS
- 144 WEAPONS PODS STOWED

INBOARD PROFILE
OUTBOARD PROFILE
MIDSHIP SECTION
PLAN
OUTBOARD PROFILE
BOW VIEW
BASELINE
STATIONS IN FEET
10.83 in
107 107 157 207 257 307 357 394 431 461 531 581 60

LMMS MARINE SYSTEMS
A.MANNINO
# MK V Patrol Boat

## Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length Overall</td>
<td>82 ft.</td>
</tr>
<tr>
<td>Beam, maximum</td>
<td>17.5 ft.</td>
</tr>
<tr>
<td>Draft (max. static)</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Displacement</td>
<td>57+ tons in operational configuration</td>
</tr>
<tr>
<td>Speed</td>
<td>50 knots</td>
</tr>
<tr>
<td>Hull Design</td>
<td>Mono hull, 5086 series aluminum</td>
</tr>
<tr>
<td>Propulsion</td>
<td>2 x 2285 HP MTU 12V396 TE94 engines</td>
</tr>
<tr>
<td>Propulsor</td>
<td>2 x KaMeWa K50S Waterjets</td>
</tr>
<tr>
<td>Fuel Capacity</td>
<td>2600 gallons fuel capacity</td>
</tr>
<tr>
<td>Nav System</td>
<td>Radar, GPS, LORAN, chart plotter, fathometer, flux gate compass</td>
</tr>
<tr>
<td>Accommodation</td>
<td>5 crew; up to 16 passengers and up to 4 CRRC + 6 outboard motors and fuel</td>
</tr>
<tr>
<td>Builder</td>
<td>Halter Marine Inc., Gulfport, Miss.</td>
</tr>
<tr>
<td>Weapons Load</td>
<td>5 mounting positions for 7.62 mm machine guns or miniguns, .50 Cal heavy machine guns, 40mm grenade launchers; improvements include 7.62mm gatling guns, twin .50 Cal, 25mm guns, STINGER Surface-to-Air Missiles</td>
</tr>
</tbody>
</table>
Adm Hogg (ret)
Director Strategic Studies Group
March 2005
20 Years of Operations
Don Young with his Team
Sea Shadow Ready for Sea
HMB Crew
Family Day 1993
SS Bridge – A Favorite Spot for a Photo
Sea Shadow 20th Anniversary
The People that made it Happen
HMB 1 with Sea Shadow
Suisun Mothball Fleet with USS Iowa
Assembled by Dick Paquette
dickpaquettet@adelphia.net