

NDIA Expeditionary Warfare Operations Conference
13 October 2016



CAPT David L. Bossert, USN
Expeditionary Warfare Division
Amphibious Warfare Branch Head (N953)



Today's Amphibious Force



NEW YORK
SOF Support 2014
Libya



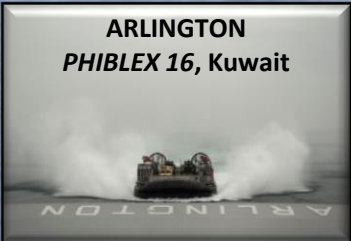
IWO JIMA
Gulf of Aden
Crisis Response 2015

ARE AMERICANS IN YEMEN IN DANGER?
U.S. NAVY READY TO EVACUATE AMERICANS IF NEEDED

T ALERT A



KEARSARGE / BOXER
Inherent Resolve
Iraq



ARLINGTON
PHIBLEX 16, Kuwait



BONHOMME RICHARD
Valiant Shield 16
Philippine Sea



ASHLAND
Ssang Yong 16 Korea



Mesa Verde
Hurricane Matthew
Haiti 2016



SP-MAGTF
Embassy Rein
Egypt



Navy and Marine Corps Challenges

- Amphibious Warship Inventory
- COCOM demand signal
- Modernizing aging Amphibious Fleet
- Recapitalizing aging Connectors
- Alternative Platforms relieve some pressure but are limited
- Budget Pressure



Amphibious Ship Inventory

Current Amphibious Inventory

FDNF Sasebo

LHD 6 BONHOMME RICHARD
 LPD 20 GREEN BAY
 LSD 42 GERMANTOWN
 LSD 48 ASHLAND

San Diego, CA

LHA 6 AMERICA
 LHD 2 ESSEX
 LHD 4 BOXER
 LHD 8 MAKIN ISLAND
 LPD 18 NEW ORLEANS
 LPD 22 SAN DIEGO
 LPD 23 ANCHORAGE
 LPD 25 SOMERSET
 LPD 26 MURTHA
 LSD 45 COMSTOCK
 LSD 47 RUSHMORE
 LSD 49 HARPERS FERRY
 LSD 52 PEARL HARBOR

Norfolk, VA

LHD 1 WASP
 LHD 3 KEARSARGE
 LHD 5 BATAAN
 LPD 17 SAN ANTONIO
 LPD 19 MESA VERDE
 LPD 24 ARLINGTON
 LSD 41 WHIDBEY ISLAND
 LSD 44 GUNSTON HALL
 LSD 46 TORTUGA
 LSD 50 CARTER HALL
 LSD 51 OAK HILL

Mayport, FL

LHD 7 IWO JIMA
 LPD 21 NEW YORK
 LSD 43 FORT MCHENRY

**31 TOTAL
 TODAY
 (Oct 2016)**
 8 x LHD-1
 1 x LHA-6
 10 x LPD-17
 8 x LSD-41
 4 x LSD-49

SHIP	2016	2017	2018	2019	2020	2021
LHD 1	8	8	8	8	8	8
LHA 6	1	1	2	2	2	2
LPD 17	10	11	11	11	11	11
LSD 41	8	8	8	8	8	8
LSD 49	4	4	4	4	4	4
TOTAL	31	32	33	33	33	33

* Inventory at end of FY



DELIVERY

LPD 26 in 2016 (MURTHA)
 LPD 27 in 2017 (PORTLAND)
 LHA 7 in 2018 (TRIPOLI)
 LPD 28 in 2022 (FT L-DALE)

DECOMMISSIONED



38 Ship Requirement; 34 Fiscally Constrained



Recapitalization of the Amphibious Fleet

Current

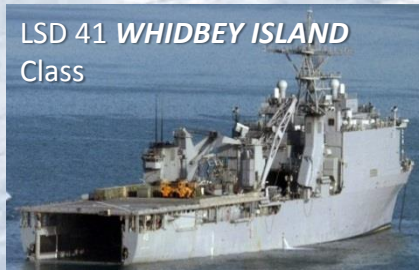
LHD 1 *WASP* Class



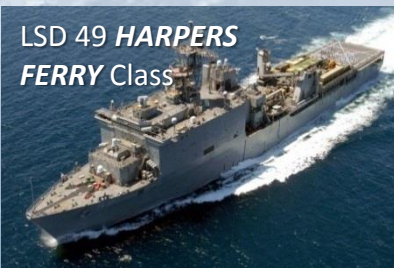
LPD 17 *SAN ANTONIO* Class



LSD 41 *WHIDBEY ISLAND* Class



LSD 49 *HARPERS FERRY* Class



AV-8B *Harrier*



F-35B *Lightning*



- Capability Driven
- Supports Larger USMC Footprint
- Supports Modern USMC Aviation Platforms
- Improved Command & Control
- Improved Self-Defense
- Increased Survivability

MV-22 *Osprey*



Recapitalization

LHA (R) *Flight 1*



LX(R)

LHA 6 *AMERICA* Class





LHA 6 AMERICA Class



Troops: 1687*
 Vehicles: 10,328 ft²*
 Cargo: 160,000 ft³*
 Aircraft: 30 or 20-23 F-35B*
 LCAC: 0 / 2 (8 only)
 LCU: 0 / 1 (8 only)

**Quantities shown for 6/7*



LHA 6 recapitalizes the WASP class hull, upgrading to hybrid electric drive and an enhanced aviation capability



Flight 0

LHA 6 & 7: Enhanced Aviation, but no Well Deck

Flight 1

LHA 8: Reincorporates Well Deck (2 LCAC), introduces reduced Island to retain enhanced aviation capability of LHA 6/7



Delivery

- AMERICA (LHA 6) APR 2014
- TRIPOLI (LHA 7) 2018
- LHA 8 2024
- LHA 9 2029
- LHA 10 2034





LPD 17 SAN ANTONIO Class



Replaces four ship classes (LPD 4, LSD 36, LKA 113, & LST 1179)

- Greater Mission Capability & enhanced C2
- Improved Quality of Life
- 10 of 12 Ships Delivered
- LPD 26 Delivered 2016
- LPD 27 Delivers 2017
- LPD 28 Delivers 2022

Aviation & Maintenance



Ship Characteristics

Displacement	24,900 lt
Draft	23.0 ft
Speed	24 kts
Crew	371 Sailors/3 Marines
Length	684 ft
Beam	105 ft
Troop Lift	699 Marines (800 Surge) *650 LPD-28
Vehicle Space	25,000 Sq Ft
Cargo Cube	35,000 Sq Ft
Medical	2 Med / 2 Dental ORs

Improvements

LCAC & Vehicle Square



Command & Control





LX(R): LPD 17 Derivative

LX(R) Program Profile = 11 ships

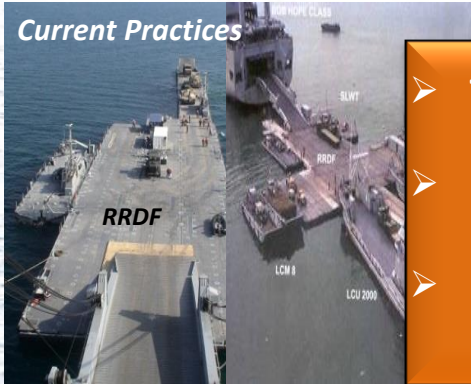
- **Navy Committed to Delivering On Time**
- **Capability Development Document complete: JROCM pending from Joint Staff**
 - ❖ Stable program requirements
- **Program Must Be Affordable:**
 - ❖ Delivers the right capability at the right cost
 - ❖ Challenged by Navy top line – LX(R) delivers concurrently with ORP
 - ❖ Involved industry from the start to work towards development of affordable design
 - ❖ Focused on containing costs for Government Furnished Equipment
- **Deliver first LX(R) in FY26; one-for-one replacement of LSD 41/49 as ships reach 40 year service life:**
 - ❖ Greater capability than LSD 41/49 at right cost
 - Aviation, C4I, Link/CEC, Troop, Vehicle Sq.





Building the Expeditionary Sea Base

Current



Current Practices

- Transfer of equipment and supplies at sea in non-anchorage depths
- Delivery to shore through restricted access environments
- Selectively off-loadable, tailorable force packages, persistent sustainment



PONCE Afloat Forward Staging Base Interim [AFSB (I)]

- ESB will provide a maritime base of operations for MCM and SOF missions
- Will include four core components: 1) aviation, 2) boat/sled ops, 3) berthing/functional spaces, and 4) command and control (C2)
- Dedicated assets to apply across ROMO

Recapitalization

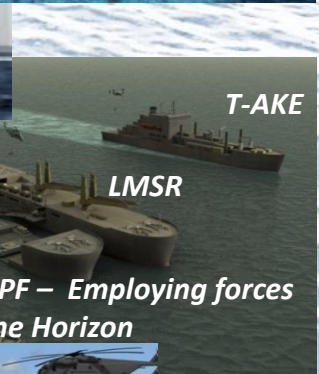


ESD Core Capability Set (CCS)

LCAC/ESD Interoperability



EPF



T-AKE

ESD

LMSR

Enhanced MPF – Employing forces from Over The Horizon



Supports AMCM and SOF Ops



ESB

Cost Driven Alternatives Complement Amphibious Warship Capacity



Surface Connectors

Current

LCAC (SLEP)



- 60 ST at 35 Kts in SS 3 [4.1 ft]
- Designed to carry 1 M1A1 Tank
- Increased performance envelope over land & water

LCU-1600



- Original 195 ST; Cargo Capacity Degraded (age)
- Current Capacity 140 ST / 1200 NM at 8 kts
- 1 M1A1 Tank or 400 Pax or 350 Combat Personnel

Imperative to keep these programs on track

LCAC 100 replaces legacy LCAC to retain high-speed, over-the-horizon surface assault capability

Recapitalization

LCAC 100

Post Milestone C
IOC FY20



- Increased payload, temperature and sea state parameters (74 ST at 35 Kts in SS 3 [4.1 ft])
- 72 craft procurement ~\$ 4.5B through 2027
- First 4 craft in production
- 5 additional craft under contract

LCU-1700

Combined Milestone B/C
IOC FY23



LCU 1700 replaces the LCU-1600; recapitalizes a rugged, persistent, economical, high capacity utility landing craft

- CDD approved/validated
- 170 ST / 1200 NM at 8 kts
- 2 M1A1 Tanks or 400 Pax or 350 Combat Personnel
- 32 craft procurement beginning 2017

Investments in Warfare Modernization



Modernization Drivers

Aviation Integration

- Mv-22 Osprey
- F-35B Lightning II
- UAS

Marine Corps Integration

- Joint Light Tactical Vehicle
- M27 IAR
- M-4 Carbine with Advanced Optics
- Return to VBSS Mission
- Disaggregated Operations

Enhanced Threat

- Survivability
- Need for ISRT to be coordinated across C4I / Combat Systems Domains

Assured C2

- Digital interoperability with the Fleet and Marines
- Cyber resiliency

Capabilities

Aviation Integration:

- Over the horizon vertical assault capability
- Day One enhanced range, payload, ISRT and strike capability

HM&E:

- Safely, efficiently and effectively supporting the USMC ship to shore maneuver.

CAPSTONE:

- Survivability in contested littoral environments
- Future C5I Integration

C5I:

- Digital interoperability with the Fleet and Marines
- Cyber resiliency

Targeted Investments

Aviation Integration:

- Cornerstone Mods
- Environmental Effects Mods
- Expansion of TSN to entire flight decks to counter FOD
- Flight Deck Thermal Management system on LSD/LPD

HM&E:

- Enhanced Ballast Control, Crane Control and Slewing Arm Davit
- Troop rifle stowage
- Embarked operational troop space modernization
- Slewing Arm Davit (SLAD)

CAPSTONE:

- SSDS Mk2
- EASR
- ESSM Blk 2
- RAM Blk 2 / SEA RAM

C5I:

- CANES / ADNS III / NMT / CBSP
- HF SAR Phase II
- **F-35B C5I Integration**

LPD 17



LSD 41/49



LHD/LHA



Delivering Relevant Warships to Theater



How can YOU (industry) help us?

- Industrial base is part of our team
- Building improved cost efficiency and delivery schedules
- Quality Control
- Coordinated, combined acquisition needed to reduce cost



Questions

