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Navy LPD-17 Flight II (LX[R]) Amphibious Ship Program: Background and Issues for Congress

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Summary

The LPD-17 Flight II program, previously known as the LX(R) program, is a program to build 13 new amphibious ships for the Navy. The Navy had planned to procure the first LPD-17 Flight II ship in FY2020. Congress, as part of its action on the Navy's proposed FY2018 budget, accelerated the procurement of the first LPD17 Flight II ship to FY2018.

Within a Navy shipbuilding program, the term *flight* refers to a group of ships built to a particular design version. The LPD-17 Flight II ships are to constitute the second version of the Navy's San Antonio (LPD-17) class amphibious ship design. Compared to the original (i.e., Flight I) LPD-17 design, the Flight II design is somewhat less expensive and in some ways less capable. In many other respects, the LPD-17 Flight II design is similar in appearance and capabilities to the LPD-17 Flight I design. The Flight II design was developed to meet Navy and Marine Corps operational requirements while staying within a unit procurement cost target established by the Navy.

A total of 13 LPD-17 Flight I ships (LPDs 17 through 29) were procured between FY1996 and FY2017. The final two Flight I ships (LPDs 28 and 29) incorporate some design changes that make them transitional ships between the Flight I design and the Flight II design.

The LPD-17 Flight II ship procured in FY2018 will be designated LPD-30, and subsequent ships will be designated LPD-31, LPD-32, and so on. Whether the LPD-17 Flight II ships constitute their own shipbuilding program or an extension of the original LPD-17 shipbuilding program might be a matter of perspective. As a matter of convenience, this CRS report refers to the Flight II shipbuilding effort as a program. Years from now, LPD-17 Flight I and Flight II ships might be referred to collectively as either the LPD-17 class, the LPD-17/30 class, or the LPD-17 and LPD-30 classes.

Huntington Ingalls Industries' Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS, is the builder of LPD-17 Flight I ships. On April 6, 2018, the Navy announced that it intends to issue a solicitation on a sole-source basis to HII/Ingalls for the detail design and construction (DD&C) of LPD-30.

The Navy's FY2019 budget submission, which was submitted before Congress finalized its action on the Navy's FY2018 budget, does not request procurement of an LPD-17 Flight II ship in FY2019, and does not request any procurement or advance procurement (AP) funding for the LPD-17 Flight II program in FY2019. It programs the procurement of an LPD-17 Flight II ship in FY2020. Under the Navy's original plan, the ship programmed for procurement in FY2020 was to be the first Flight II ship. With the first Flight II ship having been procured in FY2018, the Flight II ship scheduled for procurement in FY2020 would be the second Flight II ship.

Issues for Congress for FY2019 for the LPD-17 Flight II program include the following:

- whether to accelerate the procurement of the second LPD-17 Flight II ship (i.e., LPD-31) from FY2020 to FY2019; and
- the Navy's intent to issue a solicitation for LPD-30 on a sole-source basis, and the Navy's plans for controlling costs and achieving good production quality and schedule adherence in the LPD-17 Flight II program in a sole-source contracting environment.

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Introduction

This report provides background information and issues for Congress on the LPD-17 Flight II amphibious ship program, previously known as the LX(R) program. The Navy had planned to procure the first LPD-17 Flight II ship in FY2020. Congress, as part of its action on the Navy's proposed FY2018 budget, accelerated the procurement of the first LPD17 Flight II ship to FY2018. The Navy's FY2019 budget submission programs the procurement of the second LPD-17 Flight II ship for FY2020. Decisions Congress makes on the LPD-17 FLIGHT II program will affect Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base.

For an overview of the strategic and budgetary context in which the LPD-17 Flight II program and other Navy shipbuilding programs may be considered, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

Background

Amphibious Ships in General

Roles and Missions of Amphibious Ships

The primary function of Navy amphibious ships is to lift (i.e., transport) U.S. Marines and their equipment and supplies to distant operating areas, and enable Marines to conduct expeditionary operations ashore in those areas. Although amphibious ships are designed to support Marine landings against opposing military forces, they are also used for operations in permissive or benign situations where there are no opposing forces. Due to their large storage spaces and their ability to use helicopters and landing craft to transfer people, equipment, and supplies from ship to shore without need for port facilities,[1] amphibious ships are potentially useful for a range of combat and noncombat operations.[2]

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[1] Amphibious ships have berthing spaces for Marines; storage space for their wheeled vehicles, their other combat equipment, and their supplies; flight decks and hangar decks for their helicopters and vertical take-off and landing (VTOL) fixed-wing aircraft; and well decks for storing and launching their landing craft. (A well deck is a large, garage-like space in the stern of the ship. It can be flooded with water so that landing craft can leave or return to the ship. Access to the well deck is protected by a large stern gate that is somewhat like a garage door.)

[2] Amphibious ships and their embarked Marine forces can be used for launching and conducting humanitarian-assistance and disaster-response (HA/DR) operations; peacetime engagement and partnership-building activities, such as exercises; other nation-building operations, such as reconstruction operations; operations to train, advise, and assist foreign military forces; peace-enforcement operations; noncombatant evacuation operations (NEOs); maritime-security operations, such as anti-piracy operations; smaller-scale strike and counter-terrorism operations; and larger-scale ground combat operations. Amphibious ships and their embarked Marine forces can also be used for maintaining forward-deployed naval presence for purposes of deterrence, reassurance, and maintaining regional stability.

Although the Marines have not conducted a large-scale amphibious assault against opposing military forces since the Korean conflict, Marine Corps officials stated in 2008 that about 85 U.S. amphibious operations of other kinds were conducted between 1990 and April 2008. (Source: Marine Corps briefing to CRS on April 25, 2008.) In addition, presenting the potential for conducting an amphibious landing can generate tactical benefits, even if the landing is not carried out. During the 1991 Persian Gulf conflict, for example, the potential for conducting an amphibious landing by a force of about 17,000 Marines embarked on amphibious ships in the Persian Gulf tied down several Iraqi divisions in coastal-defense positions. Those Iraqi divisions' positions were not available for use against U.S.-coalition ground forces moving north from Saudi Arabia. (See CRS Report 91-421, *Persian Gulf War: Defense Policy Implications for Congress*, coordinated by Ronald O'Rourke, p. 41 [May 15, 1991; out of print and available to congressional clients directly from the report coordinator.])

On any given day, some of the Navy's amphibious ships, like some of the Navy's other ships, are forward-deployed to various overseas operating areas. Forward-deployed U.S. Navy amphibious ships are often organized into three-ship formations called amphibious ready groups (ARGs).[3] On average, two or perhaps three ARGs might be forward-deployed at any given time. Amphibious ships are also sometimes forward-deployed on an individual basis to lower-threat operating areas, particularly for conducting peacetime engagement activities with foreign countries or for responding to smaller-scale contingencies.

Types of Amphibious Ships

Navy amphibious ships can be divided into two main groups—the so-called "big-deck" amphibious assault ships, designated LHA and LHD, which look like medium-sized aircraft carriers, and the smaller (but still sizeable) amphibious ships designated LPD or LSD, which are sometimes called "small-deck" amphibious ships.

U.S. Navy amphibious ships have designations starting with the letter L, as in amphibious *landing*. LHA can be translated as landing ship, helicopter-capable, assault; LHD can be translated as landing ship, helicopter-capable, well deck; LPD can be translated as landing ship, helicopter platform, well deck; and LSD can be translated as landing ship, well deck. Whether noted in the designation or not, almost all these ships have well decks.[4]

The LHAs and LHDs have large flight decks and hangar decks for embarking and operating numerous helicopters and vertical or short takeoff and landing (V/STOL) fixed-wing aircraft, while the LSDs and LPDs have much smaller flight decks and hangar decks for embarking and operating smaller numbers of helicopters. The LHAs and LHDs, as bigger ships, in general can individually embark more Marines and equipment than the LSDs and LPDs.

Amphibious Lift Goal

The Navy's 355-ship force-level goal, released in December 2016, calls for achieving and maintaining a 38-ship amphibious force that includes 12 LHA/LHD-type ships, 13 LPD-17 class ships, and 13 LSD/LPD-type ships (12+13+13).[5] The goal for achieving and maintaining a force of 38 amphibious ships relates primarily to meeting wartime needs for amphibious lift. Navy and Marine Corps officials have testified that fully meeting U.S. regional combatant commander (CCDR) requests for day-to-day forward deployments of amphibious ships would require a force of 50 or more amphibious ships.[6]

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[3] An ARG notionally includes three amphibious ships—one LHA or LHD, one LSD, and one LPD. These three amphibious ships together can embark a Marine expeditionary unit (MEU) consisting of about 2,200 Marines, their aircraft, their landing craft, their combat equipment, and about 15 days' worth of supplies. ARGs can operate in conjunction with carrier strike groups (CSGs) to form larger naval task forces; ARGs can also be broken up into individual ships that are sent to separate operating areas.

[4] The exceptions are LHAs 6 and 7, which do not have well decks and instead have expanded aviation support capabilities. For an explanation of well decks, see footnote 1.

[5] For more on the Navy's 355-ship force-level goal, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke. For a more detailed review of the 38-ship force structure requirements, see Appendix A of CRS Report RL34476, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, which is an archived report.

[6] For example, in testimony to the Seapower and Projection Forces subcommittee of the House Armed Services Committee on February 25, 2015, Marine Corps Lieutenant General Kenneth J. Glueck, Jr., Deputy Commandant for Combat Development and Integration and Commanding General of the Marine Corps Combat Development Command, stated that the number needed to fully meet COCOM demands for forward-deployed amphibious ships is "close to 54."

Existing Force of LSD-41/49 Class Ships

The Navy's existing force of LSD-type ships—the ships to be replaced by LPD-17 Flight II ships—includes 12 Whidbey Island/Harpers Ferry (LSD-41/49) class ships (**Figure 1**).[7] These ships were procured between FY1981 and FY1993 and entered service between 1985 and 1998. They have an expected service life of 40 years; the first ship will reach that age in 2025. The class includes 12 ships because they were built at a time when the Navy was planning a 36-ship (12+12+12) amphibious force.[8]

Figure 1. LSD-41/49 Class Ship

Source: U.S. Navy photo accessed May 7, 2014, at http://www.navy.mil/gallery_search_results.asp?terms=lsd+52&page=4&r=4. The Navy's caption for the photo states that the photo is dated July 13, 2013, and that it shows the *Pearl Harbor* (LSD-52) anchored off Majuro atoll in the Republic of the Marshall Islands during an exercise called Pacific Partnership 2013.

(Source: Spoken testimony of Lieutenant General Glueck, as reflected in transcript of hearing.)

[7] The class was initially known as the Whidbey Island (LSD-41) class. The final four ships in the class, beginning with *Harpers Ferry* (LSD-49), were built to a modified version of the original LSD-41 design, prompting the name of the class to be changed to the Harpers Ferry/Whidbey Island (LSD-41/49) class. Some sources refer to these 12 ships as two separate classes.

[8] The ships are about 609 feet long and have a full load displacement of about 16,800 tons. The first three were built by Lockheed Shipbuilding of Seattle, WA, a firm that subsequently exited the Navy shipbuilding business. The final nine ships were built by Avondale Shipyards of New Orleans, LA, a shipyard that eventually became part of the shipbuilding firm Huntington Ingalls Industries (HII). Avondale, like Lockheed Shipbuilding, no longer builds Navy ships. HII wound down Navy shipbuilding operations at Avondale in 2014, after Avondale finished building LPD-25, the ninth LPD-17 class ship. HII continues to operate two other shipyards that build Navy ships—Ingalls Shipbuilding in Pascagoula, MS (HII/Ingalls), and Newport News Shipbuilding in Newport News, VA (HII/NNS). HII's construction of amphibious ships, previously divided between Avondale and Ingalls, now takes place primarily at Ingalls. HII/NNS's work focuses primarily on building and overhauling aircraft carriers and building submarines.

LPD-17 Flight II Program

Program Name

The LPD-17 Fight II program was previously known as the LX(R) program. In the designation LX(R), the X meant that the exact design of the ship had not yet been determined, and the R meant that the ships are intended as replacements for the LSD-41/49 class ships.[9]

As discussed in the **Appendix**, the Navy examined several design options for the LX(R), and eventually decided to design the LX(R) as a new version of the Navy's San Antonio (LPD-17) class amphibious ship design. Within a Navy shipbuilding program, the term *flight* refers to a group of ships built to a particular design version. In recognition of its decision to design the LX(R) as a variant of the LPD-17 design, the Navy on April 10, 2018, changed the name of the program from LX(R) to LPD-17 Flight II.[10] Although the term LX(R) may continue to be used for some time, its use will gradually become less common.

A total of 13 LPD-17 Flight I ships (LPDs 17 through 29) were procured between FY1996 and FY2017. The final two Flight I ships (LPDs 28 and 29) incorporate some design changes that make them transitional ships between the Flight I design and the Flight II design.

The LPD-17 Flight II ship procured in FY2018 will be designated LPD-30, and subsequent LPD-17 Flight II ships will be designated LPD-31, LPD-32, and so on. Whether the LPD-17 Flight II ships constitute their own shipbuilding program or an extension of the original LPD-17 shipbuilding program might be a matter of perspective. As a matter of convenience, this CRS report refers to the Flight II shipbuilding effort as a program. Years from now, LPD-17 Flight I and Flight II ships might be referred to collectively as either the LPD-17 class, the LPD-17/30 class, or the LPD-17 and LPD-30 classes.

Total Planned Quantity

Consistent with the 38-ship amphibious force-level goal that forms part of the Navy's 355-ship force-level goal, the Navy envisages procuring 13 LPD-17 Flight II ships.

Procurement Schedule

The Navy had planned to procure the first LPD-17 Flight II ship in FY2020. Congress, as part of its action on the Navy's proposed FY2018 budget, accelerated the procurement of the first LPD17 Flight II ship to FY2018. The Navy's FY2019 budget submission, which was submitted before Congress finalized its action on the Navy's FY2018 budget, programs the procurement of an LPD-17 Flight II ship in FY2020. Under the Navy's original plan, the ship programmed for procurement in FY2020 was to be the first Flight II ship. With the first Flight II ship having been procured in FY2018, the Flight II ship scheduled for procurement in FY2020 would be the second Flight II ship. The Navy's FY2019 30-year (FY2019-FY2048) shipbuilding plan projects the

[9] Prior to being referred to as the LX(R) program, the program was referred to as the LSD(X) program, meaning an LSD-type ship whose design had not yet been determined. The program's designation was changed to LX(R) in 2012 to signal that the replacement for the existing LSD-41/49 class ships would be an amphibious ship that would best meet future Navy and Marine Corps needs, regardless of whether that turns out to be a ship that one might refer to as an LSD. For an article discussing the change in the program's designation, see Christopher P. Cavas, "Different Missions Might Await New USN Amphib," *DefenseNews*, November 12, 2012.

[10] Megan Ecsteain, "Navy Designates Upcoming LX(R) Amphibs as San Antonio-Class LPD Flight II," *USNI News*, April 11, 2018.

procurement of the remaining LPD-17 Flight II ships at a rate of one ship per year starting in FY2022.

Unit Procurement Cost Target

The Navy's unit procurement cost targets for the LPD-17 Flight II program are $1,643 million in constant FY2014 dollars for the lead ship, and an average of $1,400 million in constant FY2014 dollars for ships 2 through 11.[11]

Design

As mentioned above, the LPD-17 Flight II ships (**Figure 2**) are to constitute the second version of the Navy's San Antonio (LPD-17) class amphibious ship design. Compared to the original (i.e., Flight I) LPD-17 design, the Flight II design is somewhat less expensive and in some ways less capable. In many other respects, the LPD-17 Flight II design is similar in appearance and capabilities to the LPD-17 Flight I design. The Flight II design was developed to meet Navy and Marine Corps operational requirements while staying within the above-discussed unit procurement cost target established by the Navy. For additional background information on the design of the LPD-17 Flight II ships, see **Appendix**.

Figure 2. Artist's Rendering of LPD-17 Flight II

Source: HII rendering accessed October 25, 2017, at https://newsroom.huntingtoningalls.com/file?fid=57c494672cfac21cbb8e3eac.

[11] Source: Navy briefing on LX(R) program to CRS and CBO, March 23, 2015. The cost target for the lead ship is greater than the cost target for the subsequent ships primarily because the procurement cost of the lead ship incorporates much or all of the detail design and nonrecurring engineering (DD/NRE) costs for the program. Incorporating much or all of the DD/NRE costs of for a shipbuilding program into the procurement cost of the lead ship in the program is a traditional Navy shipbuilding budgeting practice.

Builder

As recently as May 2017, the Navy anticipated conducting a competition between HII's Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS, the builder of LPD-17 Flight I ships, and General Dynamics' National Steel and Shipbuilding (GD/NASSCO) of San Diego, CA, another builder of Navy ships, for the LPD-17 Flight II program.[12] On April 6, 2018, however, the Navy announced that it intends to issue a solicitation on a sole-source basis to HII/Ingalls for the detail design and construction (DD&C) of LPD-30. The Navy's announcement stated the following:

> The Naval Sea Systems Command intends to issue solicitation N00024-18-R-2406 to Huntington Ingalls Incorporated, acting through its Ingalls Shipbuilding division (HII), 1000 Access Road, Pascagoula, MS 39567 on a sole source basis for Detail Design and Construction (DD&C) of the LPD 30 Amphibious Transport Dock Ship and Life Cycle Engineering and Support (LCE&S), which includes post-delivery availability planning, systems integration and engineering support, design, material readiness, and logistics support for the San Antonio Class. The LX(R) requirement that was developed to replace the retiring LSD 41/49 Class amphibious ships will be fulfilled with a San Antonio Class Flight II with LPD 30 as the lead ship. As the designer, builder, and life cycle engineering and support provider of the entire San Antonio Class Flight I, HII is the only source with the requisite knowledge and experience required to construct the lead ship of the San Antonio Class Flight II and provide the required LCE&S. Pursuing an alternate source through competition would result in significant duplication of costs and unacceptable delays due to the loss of design expertise and production efficiencies achieved on the previous 13 ships that cannot be recovered on the first planned ship of Flight II. No other vendor possesses the requisite facilities and qualified cadre of engineers, designers, and a construction workforce that can design, plan, construct, test, and deliver current and future amphibious ships. This notification is issued for subcontracting purposes only.
>
> The proposed contract action is for supplies or services for which the Government intends to solicit and negotiate with only one source under authority of FAR 6.302-1. This notice of intent is not a request for competitive proposals. However, all responsible sources may submit a capability statement, proposal, or quotation within fifteen days after date of publication of this synopsis, which shall be considered by the Government. The Government will not reimburse respondents for any questions submitted or information provided as a result of this notice. A determination by the Government not to compete this proposed contract based upon responses to this notice is solely within the discretion of the Government. Information received will normally be considered solely for the purpose of determining whether to conduct a competitive procurement.[13]

[12] See, for example, Statement of Allison F. Stiller, Principal Civilian Deputy Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RD&A)), Performing the Duties and Functions of ASN(RD&A), and Lieutenant General Robert S. Walsh, Deputy Commandant, Combat Development and Integration & Commanding General, Marine Corps Combat Development Command, and Vice Admiral William K. Lescher, Deputy Chief of Naval Operations for Integration of Capabilities and Resources, before the Subcommittee on Seapower and Projection Forces of the House Armed Services Committee on Department of the Navy Seapower and Projection Forces Capabilities, May 24, 2017, which states the following: "The LX(R) program focus during the remainder of this year will be on completing the contract design efforts. The LX(R) contract design is being performed by General Dynamics National Steel and Shipbuilding Company (GD-NASSCO) and HII, in support of the future Detail Design and Construction competitive acquisition." (Page 9)

[13] *Detail Design & Construction and Life Cycle Engineering & Support of LPD 30 Amphibious Transport Dock Ship*, Solicitation Number: N00024-18-R-2406, FedBizOpps.gov, April 6, 2018.

Potential Block Buy or Multiyear Procurement (MYP) Contract

The Navy reportedly hopes to use a type of multiyear contract known as a block buy contract to procure the first few LPD-17 Flight II ships.[14] Another possibility would be a type of multiyear contract known as a multiyear procurement (MYP) contract.[15] Whether the acceleration of the procurement of LPD-30 to FY2018 will affect the ability of that ship to be included in a block buy contract or MYP contract is not clear.

Program Funding

Table 1 shows LPD-17 Flight II procurement funding for FY2019-FY2023 as presented in the Navy's FY2019 budget submission.

Table 1. LPD-17 Flight II Program Funding

Millions of dollars, rounded to nearest tenth

	FY19 (req.)	FY20 (proj.)	FY21 (proj.)	FY22 (proj.)	FY23 (proj.)
Procurement	0	1,838	0	1,704	1,739
(Quantity)		(1)		(1)	(1)

Source: Table prepared by CRS based on Navy FY2019 budget submission.

Issues for Congress for FY2019

Accelerate Procurement of LPD-31 to FY2019

One potential issue for Congress for the LPD-17 Flight II program for FY2019 is whether to accelerate the procurement of LPD-31 (the planned second ship in the program) from FY2020 to FY2019. Supporters could argue that this would reduce the cost of LPD-31 in real (i.e., inflation-adjusted) terms by providing a more efficient production profile, and help accelerate the date for achieving the Navy's 38-ship amphibious ship force-level goal. Skeptics or opponents could argue that in a situation of finite Navy funding, accelerating the procurement of LPD-31 to FY2019 could require reducing FY2019 funding for other Navy programs, leading to an unclear net result on overall Navy capabilities.

Sole-Source Acquisition

Another potential issue for Congress for the LPD-17 Flight II program for FY2019 concerns the Navy's intent to issue a sole-source solicitation for the detail design and construction of LPD-30. Potential questions for Congress include the following:

- What changed between May 2017 and April 6, 2018, to prompt the Navy to shift from an anticipated competitive acquisition to a sole-source solicitation?

[14] Justin Doubleday, "Navy Open to Both Shipyards Building New LX(R) Amphibious Ships, *Inside the Navy*, January 27, 2017.

[15] For more on block buy and MYP contracts, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke and Moshe Schwartz.

- What are the Navy's plans for controlling costs and achieving good production quality and schedule adherence in the LPD-17 Flight II program in a sole-source contracting environment?

Legislative Activity for FY2019

Summary of Congressional Action on FY2019 Funding Request

Table 2 summarizes congressional action on the Navy's FY2019 funding request for the LPD-17 FLIGHT II and LPD-17 programs.

Table 2. Summary of Congressional Action on FY2019 Funding Request

Millions of dollars, rounded to nearest tenth

		Authorization			Appropriation		
	Request	HASC	SASC	Conf.	HAC	SAC	Conf.
Procurement	0	0	0	0	0	0	0
Advance procurement (AP)	0	150.0	650.0	500.0	0	500.0	350.0

Source: Table prepared by CRS based on Navy's FY2019 budget submission, committee and conference reports, and explanatory statements on FY2019 National Defense Authorization Act and FY2019 DOD Appropriations Act.

Notes: HASC is House Armed Services Committee; **SASC** is Senate Armed Services Committee; **HAC** is House Appropriations Committee; **SAC** is Senate Appropriations Committee; **Conf.** is conference agreement.

National Defense Authorization Act for Fiscal Year 2019/John S. McCain National Defense Authorization Act for Fiscal Year 2019 (H.R. 5515/S. 2987)

House

The House Armed Services Committee's report (H.Rept. 115-676 of May 15, 2018) on H.R. 5515 recommends the funding levels for the LPD-17 Flight II program shown in the HASC column of **Table 2**. The recommended increase of $150 million in advance procurement (AP) funding is for "EOQ [economic order quantity (purchases)] for LPD Flight II Multi-year Procurement." (Page 345) EOQ purchases are up-front batch orders of components for the ships to be procured under a multiyear procurement (MYP) contract.[16]

Section 124 of H.R. 5515 as reported by the committee states the following:

> SEC. 124. Multiyear procurement authority for amphibious vessels.
>
> (a) Authority for multiyear procurement.—Subject to section 2306b of title 10, United States Code, the Secretary of the Navy may enter into one or more multiyear contracts for the procurement of not more than five amphibious vessels.

[16] For more on MYP contracts, including EOQ purchases, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke and Moshe Schwartz.

(b) Limitation.—The Secretary of the Navy may not modify a contract entered into under subsection (a) if the modification would increase the target price of an amphibious vessel by more than 10 percent above the target price specified in the original contract awarded for the amphibious vessel under subsection (a).

(c) Authority for advance procurement.—The Secretary of the Navy may enter into one or more contracts for advance procurement associated with the amphibious vessels for which authorization to enter into a multiyear procurement contract is provided under subsection (a) and for equipment or subsystems associated with the amphibious vessels, including procurement of—

(1) long lead time material; or

(2) material or equipment in economic order quantities when cost savings are achievable.

(d) Condition for out-year contract payments.—A contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract for a fiscal year after fiscal year 2019 is subject to the availability of appropriations or funds for that purpose for such later fiscal year.

(e) Limitation on termination liability.—A contract for the construction of amphibious vessels entered into under subsection (a) shall include a clause that limits the liability of the United States to the contractor for any termination of the contract. The maximum liability of the United States under the clause shall be the amount appropriated for the amphibious vessels covered by the contract regardless of the amount obligated under the contract.

(f) Amphibious vessel defined.—The term "amphibious vessel" means a San Antonio class amphibious transport dock ship with a Flight II configuration.

Senate

The Senate Armed Services Committee's report (S.Rept. 115-262 of June 5, 2018) on S. 2987 recommends the funding levels for the LPD-17 Flight II program shown in the SASC column of **Table 2**. The recommended increase of $650 million in advance procurement (AP) funding is for "AP for FY2020 LPD Flight II and/or MYP EOQ [economic order quantity]." (Page 455) S.Rept. 115-262 states the following:

LPD-class amphibious transport ship advance procurement

The budget request included no funding in line number 12 of [the] Shipbuilding and Conversion, Navy (SCN) [account], for procurement or advance procurement of LPD-class amphibious transport ships.

The committee notes the Navy has identified LPD–30, which was authorized and appropriated in fiscal year 2018, as the first Flight II LPD. The committee believes sufficient design maturity and cost estimate precision have been achieved to award a multiyear procurement contract for Flight II LPD-class ships, which will be procured in fiscal years 2020 through 2024.

The committee further notes that the Secretary of the Navy and Commandant of the Marine Corps testified on April 19, 2018, before the Committee on Armed Services of the Senate that they support the addition of the Vertical Launch System to Flight II LPD-class ships. The committee believes this increased capability merits serious consideration, including the applicable concepts of operation, requirements, and ship design changes.

Therefore, the committee recommends an increase of $650.0 million in line number 12 of [the] SCN [account] for advance procurement for Flight II LPD-class ships, which the Secretary of the Navy may use for: (1) Economic order quantity procurement associated with a multiyear procurement contract or contracts awarded pursuant to section 2306b of

> title 10, United States Code; and/or (2) Advance procurement of the amphibious transport ship designated LPD–31. (Page 25)

S.Rept. 115-262 also states the following:

> **San Antonio-class Flight II amphibious transport ship multiyear procurement strategy**
>
> The committee notes the fiscal year 2019 Navy shipbuilding plan includes four San Antonio-class Flight II amphibious transport ships (LPD) procured in fiscal years 2020 through 2024 at a cost of approximately $7.0 billion. The committee further notes the Navy has identified LPD–30, which was authorized and appropriated in fiscal year 2018, as the first Flight II LPD.
>
> The committee believes sufficient design maturity and cost-estimating precision have been achieved to merit consideration of a multiyear procurement contract for San Antonio-class Flight II amphibious transport ships, which will be procured in fiscal years 2020 through 2024. The committee further believes the Navy should maintain a procurement rate of one Flight II LPD per year to meet Navy requirements faster, as well as increase industrial base efficiency and stability.
>
> The committee also notes recent shipbuilding multiyear procurement contract proposals projected savings in excess of 10 percent, as compared to annual procurements.
>
> Therefore, the committee urges the Secretary of the Navy to utilize a multiyear procurement strategy for San Antonio-class Flight II amphibious transport ships in the President's Budget request for fiscal year 2020. (Page 50)

Regarding research and development funding for the LPD-17 program—funding that is not shown in **Table 2**—S.Rept. 115-262 states the following:

> **LPD–17 class systems integration**
>
> The budget request included $18.5 billion in [the] Research, Development, Test, and Evaluation (RDT&E), Navy [account], of which $0.9 million was for PE 64311N LPD–17 class systems integration.
>
> The committee understands that San Antonio-class (LPD–17) amphibious ships were designed to accommodate a 16-cell Mark-41 Vertical Launch System (VLS), which would increase lethality through employment of a variety of munitions, including Tomahawk, Enhanced Sea Sparrow, and Standard missiles.
>
> The committee notes that the Secretary of the Navy and Commandant of the Marine Corps testified on April 19, 2018, before the Committee on Armed Services of the Senate, that they supported installation of VLS on Flight II LPD–17 class ships.
>
> The committee further understands that approximately $50.0 million would be required to complete the non-recurring engineering necessary to incorporate VLS on LPD–17 class ships.
>
> Accordingly, the committee recommends an increase of $50.0 million, for a total of $50.9 million, in RDT&E, Navy, PE 64311N, for LPD–17 class systems integration. (Page 82)

Conference

The conference report (H.Rept. 115-874 of July 25, 2018) on H.R. 5515 recommends the funding levels for the LPD-17 Flight II program shown in the authorization conference column of **Table 2**.

H.Rept. 115-874 states the following:

> *Multiyear procurement authority for amphibious vessels*

> The House bill contained a provision (sec. 124) that would authorize the Secretary of the Navy to enter into a multiyear procurement for up to five San Antonio-class amphibious transport dock ships with a Flight II configuration.
>
> The Senate amendment contained no similar provision.
>
> The House recedes.
>
> The conferees urge the Secretary of the Navy to utilize a multiyear procurement strategy for San Antonio-class amphibious transport ships with a Flight II configuration in the President's budget request for fiscal year 2020. (Page 807)

FY2019 DOD Appropriations Act (H.R. 6157/S. 3159/Division A of H.R. 6157/P.L. 115-245)

House

The House Appropriations Committee's report (H.Rept. 115-769 of June 20, 2018) on H.R. 6157 recommends the funding levels for the LPD-17 Flight II program shown in the HAC column of **Table 2**.

Senate

The Senate Appropriations Committee's report (S.Rept. 115-290 of June 28, 2018) on S. 3159 recommends the funding levels for the LPD-17 Flight II program shown in the HAC column of **Table 2**. The recommended increase of $500.0 million in advance procurement funding is for "Program increase: Advance procurement for FY 2020 LPD Flight II and/or MYP EOQ [economic order quantity]." (Page 105)

Conference

In final action, the FY2019 DOD Appropriations Act became Division A of the Department of Defense and Labor, Health and Human Services, and Education Appropriations Act, 2019, and Continuing Appropriations Act, 2019 (H.R. 6157/P.L. 115-245 of September 28, 2018).

The joint explanatory statement for H.R. 6157/P.L. 115-245 specified the funding levels shown in the appropriations conference column of **Table 2**. The $350 million is for "Program increase—advance procurement for fiscal year 2020 LPD Flight II and/or multiyear procurement [MYP] economic order quantity [EOQ]." (PDF page 176 of 559)

Appendix. LPD-17 Flight II Design

This appendix presents additional background information on the design of the LPD-17 Flight II ships.

Analysis of Alternatives (AoA)

From the first quarter of FY2013 through March 2014, the Navy conducted an Analysis of Alternatives (AoA) to evaluate alternative design concepts for the then-LX(R) program. Concepts evaluated included

- the existing LPD-17 design (which apparently was included primarily as a baseline or reference design for helping the Navy to evaluate other LX(R) design concepts, because the Navy considered the existing LPD-17 design to be unaffordable for the purposes of the LX(R) program);[17]
- a modified (reduced capability/reduced-cost) version of the LPD-17 design;
- brand new (i.e., "clean-sheet") designs; and
- foreign designs.

Modified LPD-17 Design

Huntington Ingalls Industries (HII), the builder of LPD-17 class ships, promoted a modified LPD-17 as the design solution for the LX(R) program, citing the capabilities of the LPD-17 hull design, the reduced up-front design costs of modifying an existing design compared to those of developing an entirely new design, and the potential benefits in terms of life-cycle operation and support (O&S) costs of building the LX(R) to a design that uses the same basic hull and many of the same components as the LPD-17 design. Marine Corps leaders, citing their satisfaction with the LPD-17 design, expressed support for a modified LPD-17 design as the design solution for the LX(R) program.[18] Other observers, noting that the LPD-17, with a full load displacement of about 25,000 tons, is considerably larger than the LSD-41/49 class ships, questioned whether a modified LPD-17 could meet the Navy's reported unit procurement cost target for the LX(R) program.

Navy Decision

An October 20, 2014, press report stated that Secretary of the Navy Ray Mabus had signed a decision memorandum dated October 14, 2014, designating a design based on LPD-17 design as

[17] A May 29, 2014, press report quotes Vice Admiral William Hilarides, the Commander of the Naval Sea Systems Command (NAVSEA), as stating, in connection with the AoA, that "an LPD-17 variant that's built exactly like the current LPD-17 is off the table. It is unaffordable in the context of the ship we need to replace." (As quoted in Sam LaGrone, "NAVSEA: Affordability Prompted Second Look at LX(R)," *USNI News* (http://news.usni.org), May 29, 2014. The same quote (without the final two words) appears in Kris Osborn, "Navy Considers Commercial Technology for New Amphib," *DOD Buzz* (http://www.dodbuzz.com/), June 1, 2014.

[18] A group of 20 Marine Corps generals expressed support for the LPD-17 hull form as the design solution for the LX(R) program in a letter to the Senate Armed Services Committee dated March 25, 2014. See Lara Seligman, "Officials On LX(R): LPD-17 Design Is Best Fit For Marine Lift Requirements," *Inside the Navy*, April 7, 2014. See also Megan Eckstein, "Amos: LPD Hull Production Should Continue, Serve As LSD Replacement," *Inside the Navy*, April 15, 2013.

the Navy's preferred alternative for the design of the LX(R).[19] A November 5, 2015, press report states the following:

> The Navy and Marine Corps were able to design an LX(R) dock landing ship replacement with greater capability for less money by starting with the higher-end San Antonio-class LPD-17 design, stripping away unneeded features and adding back in desired ones, service officials said last week.
>
> [Capt. Bryon Johnson, head of the amphibious warfare branch in the expeditionary warfare directorate (OPNAV N953), said that] By starting with an existing ship design and avoiding the extensive engineering cost of beginning with a clean sheet, the Navy saved "enough cost that we were actually able to take that money… and reinvest it into the platform" in the form of additional capabilities today's LSDs don't have, such as command and control to support split and disaggregated operations.
>
> Johnson said the program had to stay within a cost cap but said he was confident the first ship would stay within the cost cap and deliver on time.
>
> Lt. Gen. Robert Walsh, who served as director of expeditionary warfare (OPNAV N95) until July, said at a Marine Corps Association event last month that, in fact, the Navy and Marine Corps had far surpassed cost-reduction goals while descoping the LPD design.
>
> "We drove that to a cost cap that was given to us by [the chief of naval operations], and we, with our industry partners, with [Naval Sea Systems Command], drove in the right requirements. And we got the most we could possibly get out of that ship, and it almost looks like an LPD-17, and we got it well under the cost cap," he said.
>
> Current N95 Maj. Gen. Chris Owens said the approach is "attractive to [the Office of the Secretary of Defense] and it's attractive on Capitol Hill" due to its efficiency. Ultimately, he said, it will "give us a bigger ship, greater capability, not only in size and capacity but also in things like aviation capability, the medical capability and perhaps most importantly in this day and age of split and disaggregated operations the command and control capability that the LSDs lack. And we can only do that.[20]

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[19] According to the press report, the decision memorandum had been previously signed by Admiral Jonathan Greenert, the Chief of Naval Operations (CNO), General Joseph Dunford, Commandant of the Marine Corps, General James Amos, former Commandant of the Marine Corps, and Sean Stackley, Assistant Secretary of the Navy for Research, Development and Acquisition. According to the press report, the decision memorandum stated that preliminary design efforts for the LX(R) would begin "immediately." (Lara Seligman, "Mabus Signs Decision Memo: LPD-17 Variant Preferred Platform For LX(R)," *Inside the Navy*, October 20, 2014. See also Sam LaGrone, "Memo: Hull Based On San Antonio Design Is Navy's Preferred Option For Next Generation Amphib," *USNI News*, October 20, 2014; Lara Seligman, "Senior Navy Officials Tell Mabus LPD-17 Variant Is Best Option For LX(R)," *Inside the Navy*, October 13, 2014; Lara Seligman, "Senior Leadership Get Decision Brief On LX(R); MOA Expected This Month," *Inside the Navy*, October 6, 2014; Lara Seligman, "Navy Moving Forward With 'Paper Review' Of LX(R) Amphibious Program," *Inside the Navy*, September 22, 1014; Lara Seligman, "Navy: LX(R) Will Either Be Modified LPD-17 Or 'Completely New' Design," *Inside the Navy*, August 18, 2014.)

[20] Megan Eckstein, "Navy: LX(R) Will Be Cheaper, More Capable Thanks To Using San Antonio LPD Design As Starting Point," *USNI News*, November 5, 2015.

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