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# CQ

## Boatload of Problems

Nearly every new Navy ship has serious defects



# Flawed Fleet

The Navy routinely buys defective ships, raising costs and risks

By JOHN M. DONNELLY



**TROUBLE AT SEA:**  
The Littoral Combat Ships  
USS Independence, left,  
and USS Coronado in the  
Pacific Ocean in 2014.

**F**or the U.S. Navy, buying warships that are defective, unfinished or both has become the norm. The habit is expensive, dangerous and leaves overworked sailors to deal with faulty ships in need of repair from day one — yet it has escaped sufficient scrutiny in Washington.

Contrary to the Navy’s own policy, and despite spending on average nearly \$16 billion in each of the last 30 years on new warships, most U.S. combat vessels are delivered from private shipbuilders with flaws significant enough to impair the vessels’ ability to perform missions or to keep crews safe, according to recent audits conducted for Congress. Most new ships go to sea with one or more major defects — even after months of repair work and testing.

Take the USS Coronado, one of a class of shore-hugging small warships called Littoral Combat Ships. The Navy accepted the Coronado in 2013 even though its system for distinguishing enemy ships and aircraft from friendly ones wasn’t working, according to the Government Accountability Office. What’s more, its radar — designed to guide the launch of missiles against enemy aircraft — was so flawed it could have fired in the wrong direction.

Both deficiencies were identified in testing and were later fixed — but not until months after the Coronado was already in use.

The Coronado also experienced frequent breakdowns in a communications system that connects it with other ships, and that the Navy was unable to repair because parts weren’t available. In addition, a coupling on one of the Coronado’s engines broke while the ship was in transit in the Pacific Ocean, causing the crew to return to port for repairs.

The Navy’s willingness to routinely accept flawed new ships has caused such problems to become common.

“I just wish there were people brave enough to say, ‘Damn the torpedoes, this has to change,’” says Craig Hooper, a former vice president at Alabama shipbuilder Austal USA, which constructed the Coronado.

“It’s not a healthy pattern,” says Hooper, now a senior analyst at the Gryphon Scientific consultancy. “Nobody really wants to commit to solve it, either at a policy level or a practical level.”

The Navy regularly buys and takes delivery of ships plagued with defects in their engines, steering, anchors,

radars, radios and electronic warfare gear. On top of problems the Navy identifies and monitors, still more systems unexpectedly break down shortly after the Navy starts operating its new ships.

No evidence has emerged that anyone has been directly injured or killed as a result of a ship defect.

The Navy did not respond to repeated requests for comment from CQ.

Spokesmen of the two main shipbuilders — General Dynamics Corp. and Huntington Ingalls Industries Inc. — declined to comment. Austal did not respond to requests for comment.

GAO auditors say the Navy has improved in the past decade in fixing the most serious defects on its ships — at least before the fleet actually begins to use them.

Nonetheless, of eight ships representing most of the Navy’s major classes, all but one was turned over to the fleet for operations with major defects that adversely affected ship performance, GAO reported in a 2017 audit of shipyard defects ordered by the Senate Armed Services Committee — the latest in a series of such reviews.

“We have found that the Navy routinely accepts delivery of ships with large numbers of uncorrected deficiencies,” GAO auditors wrote in a 2018 review of their recent work. These included “the most serious deficiencies for operational or safety reasons.”

While the shortcomings are not equally serious, they are all to one degree or another significant. The GAO says that the defects that existed even after the fleet began operating



**TAX DOLLARS AT WORK:** The USS John F. Kennedy, the second in a new class of aircraft carriers, being built in Newport News, Va.

Courtesy: U.S. Navy (image 16) Alamy

these ships included the sort that could jeopardize a vessel’s seaworthiness or ability to perform a mission.

Indeed, for at least the past 15 years, the Navy has only once declined to accept a ship because of defects, experts say.

The problem has garnered relatively little attention in congressional debates, and it appears that most aides and lawmakers are not aware of the extent of the trouble.

But quality control will become more critical than ever in the years ahead, as the Navy seeks to spend billions more to expand the size of the fleet, starting with some \$24 billion requested for fiscal 2020 — the largest warship budget in 20 years, adjusting for inflation. The plans include a new class of frigates to replace the Littoral Combat Ships, a new class of nuclear-missile subs and a groundbreaking class of unmanned ships.

Rep. Jackie Speier, a California Democrat who chairs the House Armed Services Military Personnel Subcommittee, said the Navy’s pattern of accepting faulty ships is unacceptable.

“Contractors work for the Navy, not the other way around,” she said in a statement for CQ.

“It’s absurd that we would let them off the hook for fixing defects these companies cause,” Speier said. “Congress needs to create real consequences for their failure to meet contract terms, not pass the buck onto hard-working taxpayers who end up footing the bill, again. If we don’t, we’re just enabling repeat offenders.”

The Pentagon’s complex acquisition system does not sufficiently discourage shoddy work, and even encourages it by how contracts are written and by the message the Navy sends in accepting so many faulty products, critics say.

By contract, shipyards first get paid to build ships and then often get paid again to fix things that should not have been broken, analysts say. With only two major shipyards building most Navy ships, the government’s leverage is limited. Perhaps not surprisingly, then, taxpayers foot the bill for almost all the repairs required because of contractor defects, costing tens of millions of dollars.

The GAO’s 2018 shipbuilding review said the Navy “structures shipbuilding contracts so that it pays shipbuilders to build ships as part of the construction process and then pays the same shipbuilders a second time to repair the ship when construction defects are discovered.”

Hooper, the former shipbuilding executive, says: “There’s an old shipbuilding adage: ‘A ship so nice, we built it twice.’”

Sailors who have to deal with the consequences of a broken engine or a weapon system that is not operable — or whose ship cannot deploy because it is undergoing maintenance to fix a preventable snafu — are the ones who feel the fallout.

Deficient, out-of-commission ships mean more work for sailors on functioning vessels, creating the kinds of stress and fatigue that contributed to the deadly ship collisions in 2017 that killed 17 sailors.

And the problem may get worse.

Retired Rear Adm. Robert Wray, a former chief of the Navy’s ship inspections board, or INSURV, thinks the Navy has diminished the board’s power by reducing the rank of its director and making him report to a command often more interested in positive news than honest assessments.

“It’s sort of the fox guarding the henhouse,” Wray says. “If you don’t have that clear sense of balls and strikes, what’s the use of having an inspection program?”

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**Under Pressure**

To be sure, glitches have always been an issue in Navy ships because building them is inherently difficult. And in many cases there may be good reasons for accepting a sub-par ship and fixing it later: It can be cheaper and get ships — even imperfect ones — into the fleet faster.

Sometimes a shipyard has trouble meeting a requirement merely because the Navy altered what it said it wanted.

Moreover, even if some key systems on a ship aren’t working when the Navy takes ownership, sailors can sometimes train for other missions while awaiting the fixes, so it can help Navy preparedness.

Even so, the consensus among experts seems to be that ship shortcomings are out of control.

Many experts worry that by habitually accepting broken products, and paying still more to fix them, the Navy may be encouraging more of the same.

“Pushing deficiencies to the fleet could become a slippery

slope that requires careful discipline on the part of the Navy,” says John Young, former chief of acquisition for the Navy and later for the entire Defense Department. While some factors can justify deferring repair work until after a vessel enters the fleet, “this should be the very rare exception,” he says.

Several shipbuilding snafus have recently made headlines: Destroyers that were delivered without the combat system that enables them to fight. Submarines with improperly welded missile tubes. An aircraft carrier with trouble launching and recovering aircraft and that was delivered without working versions of the elevators needed to bring bombs and missiles up to the flight deck.

But the problem is more widespread than that.

The Navy’s incentive is to build as many ships as possible as quickly as possible to justify its budget, according to H. Lee Buchanan, another former chief of Navy acquisition.

“There is a culture that perpetuates this that is going to be very hard to break,” Buchanan says.

The Navy and the shipyard want to get ships off the so-called ways — the structure that props up ships under construction — whether or not the vessels contain serious flaws, he says.

“They will launch a ship in order to get the next one on the ways, because they know that until they get a ship under construction, they can’t spend the money that’s been obligated and the Congress is likely to take it back,” Buchanan says.

“So it’s to everybody’s incentive a) to underbid the ship’s cost and complexity and b) to get the ship off the ways as soon as possible to get the next one on.”

Unlike commercial shipyards, he says, they are not penalized for each day they are late in delivering a quality product. And Congress typically agrees to pay the cost of any needed fixes.

The technical problems on most Navy warship programs almost always start, experts say, with the Navy launching a new class of vessels before its technologies are mature, and then starting to build ships, in some cases many ships, even before their designs are complete — and almost always before rigorous testing has been accomplished.

The results are predictable. As technical problems cause contract costs to balloon and schedules to slip, the brass typically decides to just get the ship out of the shipyard where it was built and move it to Navy ports such as San Diego or Norfolk — then solve the remaining equipment glitches.

**Navy Ships Join Fleet With Scores of Known Flaws**

The Navy regularly buys ships with glitches that threaten capability or safety. Then, after months or years of additional work, ships are still sent to the fleet with flaws.

Ship	Flaws at ship delivery			Flaws when ship put in service		
	Total	Serious	Most serious	Total	Serious	Most serious
LPD 25 (amphibious transport dock)	970	46	0	31	3	0
LHA 6 (amphibious assault)	2,420	74	0	186	8	0
DDG 112 (destroyer)	1,286	33	4	4	0	0
LCS 3 (Littoral Combat Ship)	1,426	107	4	103	11	0
LCS 4 (Littoral Combat Ship)	780	100	4	183	18	2
SSN 782 (attack submarine)	293	3	22	253	5	1

Source: Government Accountability Office 2017  
George LeVines/CQ

**‘Delivered,’ But Not Finished**

At that point, the Navy invariably issues a press release celebrating “delivery” of another ship and completion of another contract. But important work in most cases has yet to be done to enable the ships to function properly — including correction of major defects. These flaws show up not just in the first ship of a class, which naturally has the most kinks, but also in later vessels.

U.S. warships are typically not just deficient in significant ways when the Navy first gets them, they still have quality problems even in the “post-delivery phase,” when the equipment glitches are supposed to be worked out.

The post-delivery phase is intended for finishing touches and only occasionally for fixing a fundamental flaw. But it has increasingly become an extension of the ship’s construction period. In some cases, that phase now lasts years.

After the post-delivery phase, ships are delivered to the fleet for operations.

Ships are inspected by the INSURV board before delivery. The board often finds key defects, but in those cases the chief of naval operations typically provides a waiver.

Until recently there was no similarly rigorous inspection after the post-delivery phase — in other words, before sailors actually get the ship — to ensure a vessel functions properly. Only in the past year, under pressure from GAO, did the Navy add inspections later in the process, auditors say.

Another questionable practice is the timing of a major type of test for warships. For new classes of combat ships, one vessel has to undergo a “ship shock test” that exposes the vessel to underwater explosions that gauge its ability to survive in combat.

The Navy’s pattern for many years has been to conduct these tests only after numerous ships in a class have already been built and most are under contract — in other words, when the program is a fait accompli.

This allows the Navy to sidestep disclosing flaws that could jeopardize a program or force a reduction in orders, experts say.

“It’s a coward’s way of building ships,” Hooper says of conducting the tests after a program is practically over. “It shows you don’t have confidence in your design.”

**Accepting Deficiencies**

In its 2017 audit, GAO found that seven of eight ships entering service not only had numerous minor defects, but also some of the most serious flaws, according to the Navy rating system.

The most significant of these equipment snafus are known as “starred deficiencies.” They can degrade a ship’s ability to perform key missions or jeopardize the crew’s safety.

Significantly, GAO said, the Navy allowed ships to be delivered without fixing 90 percent of the starred deficiencies identified prior to delivery.

Most starred deficiencies are now fixed before the ship enters operations, according to GAO. However, in a handful of cases — such as the Coronado — ships entered service in the fleet with starred deficiencies.

But fixing those deficiencies is not enough, analysts say. The next most serious flaws — Part 1 deficiencies — typically go uncorrected even after most ships that GAO studied were in use. If a ship has Part 1 flaws, it may mean the vessel is not seaworthy or its ability to carry out missions is substantially compromised, according to Navy documents.

The USS America amphibious assault ship, which is a smaller version of an aircraft carrier, exemplified the problem. This ship was sent to the fleet with eight Part 1 deficiencies, including a faulty system for refueling at sea.

The America also manifested the Navy’s habit of doing major construction work after delivery. The Navy decided to modify the America after it had been delivered — at a cost of \$100 million — so that F-35 fighter jets could fly off the deck.

But a lithium-ion battery shop required for the aircraft had not been completed, so the ship was not initially certified to fly the jets, the GAO reported.

“The level of deficiencies the Navy is willing to accept has gone too far,” says Bryan Clark, a former aide to the Navy chief who is now an analyst with the Center for Strategic and Budgetary Assessments, a defense think tank.

**Breakdowns at Sea**

Unforeseen problems also frequently arise on many ships in the first months of operations, GAO found.

Sometimes it’s because of operator mistakes, but at that early stage it is more likely caused by contractor design or production problems, experts say.

For example, on one Littoral Combat Ship, the USS Fort Worth, sailors were unable to retrieve a faulty anchor. It was a defect the Navy thought had been fixed before the ship launched, only to see it reappear once the ship was in operation.

In addition to construction deficiencies and unreliable equipment, Navy ships are frequently plagued by performance shortfalls, auditors note.

Another LCS ship, the USS Freedom, could not travel sufficient distances. And yet another, the USS Independence, was too slow. Both also had problems in systems designed to fight other ships and to combat sea mines.

Likewise, the San Antonio class of amphibious ships, which transports Marines and their vehicles across the oceans, had “catastrophic” engine failures and electrical problems that included “total loss of electrical power,” GAO reported last year.

Steering equipment was faulty on at least one of the San Antonio ships. Navy officials told the auditors they still have “significant concerns about the quality” of the San Antonio class.

In addition, according to an annual report to Congress in February by the Pentagon’s testing office, an anti-torpedo defense system for the Nimitz class of aircraft carriers is unreliable.

**Some Assembly Required**

Then there are the two poster children of U.S. warship acquisition fiascoes: the Zumwalt destroyers and the Ford-class aircraft carriers.

The Zumwalt had so many developmental difficulties the Navy decided to deliver each of the three destroyers in two “phases.” In essence, the first phase was the ship and the second phase was the equipment that enables the vessel to perform its most important jobs.

The first two Zumwalt ships have been delivered, and both have had engine malfunctions. The first Zumwalt destroyer had 320 deficiencies at delivery.

But, because of the Zumwalts’ technical challenges, the first one won’t be ready to fight until at least 2021 — five years after it was delivered with great fanfare and 15 years after Congress ordered the ship.

The Navy’s other type of destroyer, the Arleigh Burke, took about half as long to build.

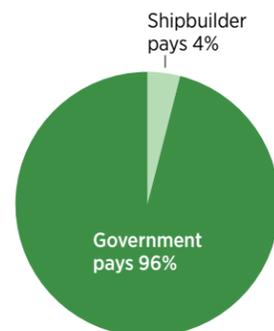
Similarly, the first Ford-class carrier was delivered to the Navy in 2017, two years late. Even then, the carrier has had trouble launching and landing aircraft and was delivered with none of its 11 weapons elevators working, due to mysterious sounding problems such as “uncommanded movements.”

Because both the ships were designated as having been delivered before they were fully built, Congress passed a law in 2016 requiring that future Navy ships be completely assembled before official delivery.

But being assembled and being free of critical defects are two different things. And Congress has not outlawed the latter.

**Taxpayers Foot the Bill**

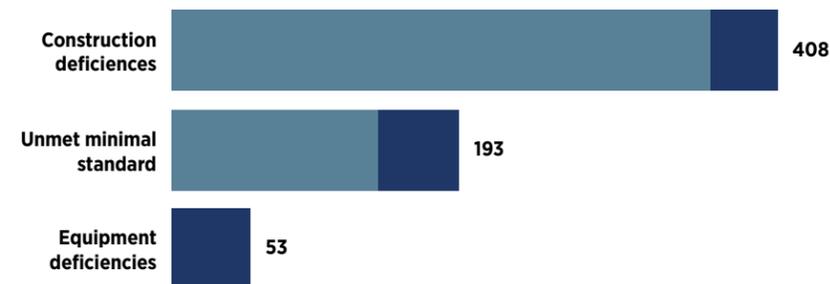
A 2018 report found the government pays for almost all shipbuilder flaws.



Source: Government Accountability Office  
George LeVines/CQ

**Construction Tops Ships Deficiencies**

Navy ships come deeply flawed from the shipbuilder. Even following months of additional work after delivery, most are put into service with uncorrected defects.



**MAIDEN VOYAGE:** The newest Littoral Combat Ship, the USS St. Louis, is launched in Wisconsin in December. The LCS class has been bogged down by defects.

Courtesy U.S. Navy

**“I just wish there were people brave enough to say, ‘Damn the torpedoes, this has to change,’” says Craig Hooper, a former vice president at Alabama shipbuilder Austal USA, which constructed the Coronado.**

**Rocking the Boats**

Until a few years ago, the person who ran the Navy’s ship inspection and survey board was a two-star admiral who was closing in on retirement, says Wray, who was one such admiral when he ran INSURV from 2011 to 2013.

However, since Wray left the board in 2013, the Navy made the INSURV chief a newly promoted one-star admiral, he says.

With promotions potentially at stake, the less senior officer may have less “backbone” than a more senior admiral to call out problems, Wray says.

The INSURV chief “is expected to say no to shipbuilders and the chief of naval operations, and that’s a pretty hard position to put him in,” Wray says. “You used to get old, grumpy guys like me who would just call it as they saw it.”

Wray says the INSURV inspector also now reports to the leader of Fleet Forces Command, instead of just to the chief of naval operations. The command focuses mostly on presenting positive reports on naval preparedness, Wray says.

Together, those changes could make honest critiques about ship conditions less likely, he says.

During Wray’s term as INSURV chief, the Navy saw a downturn in ships delivered with major deficiencies, according to a 2013 GAO audit.

**Buying Same Ship Twice**

Under typical contract terms, taxpayers — not builders — are footing fully 96 percent of the bill for fixing defects for which the contractor is deemed responsible, GAO auditors have reported.

On lead ships in a class, the contract usually pays all allowable contractor costs up to a ceiling — regardless of whether the ship is finished and functioning. In many cases, as with the Littoral Combat Ships, it was neither.

Then there are fixed-price incentive contracts for the ships in a class built after the lead ship. Under these deals, the contractor must pay for some of the overruns up to a set amount. But the Navy has often allowed the contractors to pay a smaller share than the Pentagon recommends, GAO has said.

Too often the government pays the shipbuilder twice for the same job, experts say.

For instance, when exterior paint on one of the San Antonio class ships began to peel shortly after delivery due to a contractor mistake, the Navy paid the company still more money to repaint the ship, the auditors say.

In a recent response to GAO criticism, the Navy has stopped paying contractors profit for fixing some of their mistakes.



**STRESS TEST:** The USS John S. McCain heads into dry dock for ship-integrity checks.

Courtesy U.S. Navy



**SHIP INSPECTION:** A hull maintenance technician examines the USS Kearsarge.

Courtesy U.S. Navy

The Navy might be able to reduce its costs if it were to purchase warranties in its contracts with shipyards, some auditors say, but the Navy hasn’t closely studied the idea.

It also hasn’t calculated the cost when sailors or other contractors must fix problems caused by the primary shipbuilder, GAO says.

Since only two companies — General Dynamics and Huntington Ingalls Industries — build most U.S. warships, the Navy’s leverage is minimal. Likewise, the builders increasingly have only one subcontractor to turn to for ship components.

Some say making the shipyards pay would be a pyrrhic victory — contractors would just add the cost to the next project.

“Even if shipyards were somehow forced to pay all the cost of correcting ship deficiencies, there would still be a question as to whether the government would nevertheless wind up eventually paying much of that cost,” says Ronald O’Rourke, an analyst of Navy issues with the Congressional Research Service.

Shelby Oakley, a director of GAO’s national security acquisitions auditing team, acknowledges the limits of the government’s leverage, but says the Navy can still improve its oversight.

She says the Navy has already made improvements. It has

changed the timing of INSURV inspections and has stopped paying profit to shipbuilders for fixing some of their own mistakes.

Improved use of warranties and inspections can also help, she says, as can clarifying what constitutes a “mission capable” ship. Currently, different programs have different standards for when a ship is ready to fight.

“The builders need ‘us’ as much as ‘we’ need them and the Navy can do more to be a better buyer and hold shipbuilders accountable for their performance,” Oakley says.

**Years Tied to Piers**

The acceptance of subpar ships can be indirectly tied to the deadly ship collisions of 2017, some experts say.

Navy ships and subs spent a total of nearly 4,000 days a year on average in “unavailable” status, tied to piers awaiting maintenance beyond the time scheduled for such work, according to congressional auditors. Only 30 percent of the maintenance gets done on time.

The delays are due to aging and inefficient maintenance, and to workers lacking key skills.

But each time a new ship arrives needing repairs, or something breaks down just after the ship has entered service, it adds to the maintenance burden and reduces the ships available to U.S. commanders in the Middle East, the Pacific and elsewhere.

“This creates a maintenance backlog from day one and can disrupt the ship’s operational schedule,” says GAO’s Oakley.

According to a Navy review of the deadly 2017 at-sea collisions, crews were overworked partly because of a shortage of functioning ships — a particular problem given the increasing missions in the Pacific Ocean, home of a rising China and a nettlesome North Korea.

Because ship operators are often tired, they are more likely to make the kind of mistakes that led to the deadly ship collisions in 2017, U.S. Navy reviews of the incidents have found.

“Because new construction ships are late getting to the fleet, the ships in the fleet are getting worked harder, and that is exactly one of the factors the Navy raised in its ship-collision reports,” says Clark, the former aide to the Navy chief.

To the degree the Navy continues to accept defective ships, it could worsen this cycle. ■