AOC
Engineering Solutions

MARINE DESIGN, INSPECTION & COMMERCIAL SERVICES

From the first sketch to the inclining, and every port call after.

Naval architecture, marine engineering, design, analysis, and inspection services for commercial and government vessel owners. We write the specification, review the drawings, run the stability analysis, walk the shipyard, witness the trials, and write the report. When a ship needs to leave port with a modified deck load, our naval architect is the one confirming she can.

9 ships
Commercial cable fleet under continuous naval architecture support

750+
Small USVs inspected in production for the U.S. Navy

7
Inspectors with USCG and Navy small-craft inspection experience

2 weeks
Our standard turnaround for routine desk reviews and trip reports

3
Class societies - ABS, DNV, Lloyd's - plus 46 CFR, ABYC and ISO

When owners and yards call AOC

- A crane, winch, or LARS is going on deck; prove the structure under it.
- Deck load or weight changed; the vessel needs a valid stability condition.
- Repower, tank change, or conversion: someone has to size it.
- A disputed nonconformance or a class comment to close.
- An owner's representative at the yard, RFP through delivery.



Hydrostatics & stability

Stability you can sail on.
Intact and damage stability to ABS, DNV, Lloyd's rules and 46 CFR criteria; trim and stability books with class approval; loading computer support (Kongsberg K-Load, LR SeaSafe); inclining experiments and lightship addenda.

Vessel design & modifications

Ship alterations: concept to class approval.
AOC sizes the change: weight, arrangements, stability, designs the structure and foundations with FEA, produces the installation drawings, oversees the inclining, and updates the stability booklet and loading computer so the vessel returns to service.

Structural analysis & FEA

Components through full-ship models.
FEMAP and NASTRAN: linear and nonlinear static, DDS 072-1 and DDAM shock, vibration and thermal analysis; small-boat structure to ISO 12215-5; bolted joint design; shock and vibration qualification test plans and reports.

Inspection & construction oversight

Inspectors who have stood in the shop.
Construction inspection of U.S. Coast Guard boats under 64 ft from keel laying through trials at builders including Silver Ships, USMI, Metal Shark, Metal Craft and ReCon Craft; NAMS surveyors and ABYC Master Technicians; findings filed by hull or HIN with photo and video.

www.aocinc.net · **info@aocinc.net** · **703-992-8020**

Woman-Owned Small Business

AOC Engineering Solutions

SBA U.S. Small Business Administration WOSB CERTIFIED

MARINE DESIGN, INSPECTION & COMMERCIAL SERVICES

Owner's representative

Your interests at the yard, from RFP through delivery.

Needs assessment, specification, and RFP; bid evaluation and shipyard selection; design and drawing review; construction oversight; acceptance trials, including the inclining, as performed for the Maryland DNR.

Test, trials & acceptance

Witnessed, measured, reported.

Sea trial agendas tied to contract performance requirements; witnessed inclinings, speed & power trials and endurance runs; trip reports evaluating the delivered vessel against the specification.

Regulatory & class compliance

Rules shape the design, not the punch list.

ABS, DNV and Lloyd's Register; 46 CFR (Subchapters T and I) for inspected vessels; ABYC, ISO 12215 / 12217 and 33 CFR 183 for small craft; AWS D1.2 / D3.7. Class submissions with traceable comment closure.

Proof in practice - M/V Eddie Somers, Maryland Department of Natural Resources

AOC ran the needs assessment, specification, statement of work and RFP; evaluated proposals and supported shipyard selection; reviewed design, calculations and drawings; oversaw construction; and led acceptance trials including the inclining. The 90-foot steel-hulled icebreaking buoy tender was delivered in May 2022 to ABS, ABYC and CFR rules, and the Coast Guard then brought AOC on for specification and statement-of-work development for the Homeland Security Cutter-Light.

What this means for your yard or fleet

Shipyards get an independent design reviewer and a construction inspector who documents non-conformances against the specification. Operators get a naval architect who reviews stability at port departures and arrivals, and modification packages carried through class review to comment closure. Owners get a representative who has taken a vessel from RFP through delivery.

Why AOC

- Credentialed people. Naval architects, marine engineers, NAMS surveyors, ABYC Master Technicians and USCG licensed captains; two PEs on staff.
- Class approval is part of the job. ABS most often, plus DNV and Lloyd's Register, depending on vessel and flag.
- Two-week standard turnaround on routine desk reviews and trip reports.
- Engineers near the water. Annapolis, Miami, Mobile, San Diego and Onancock.

Who we work for

Commercial & state

- SubCom - fleet naval architecture for nine cable ships
- Maryland Department of Natural Resources - owner's representative
- Triton Systems - craft design technical data package
- Hawthorne Cat

Government

- U.S. Coast Guard Office of Boat Forces - boat construction inspection
- U.S. Navy - NAVSEA, PEO USC and the Naval Surface Warfare Centers
- Military Sealift Command

Certified Woman-Owned Small Business · Serving U.S. Navy, Coast Guard and commercial vessel operators since 2002 · CAGE 1W6Y9

AOC Engineering Solutions

Abbott On Call, Inc.
703-992-8020 · info@aocinc.net
1577 Spring Hill Road, Suite 450, Vienna, VA 22182
www.aocinc.net

Scan to discuss your vessel or project