U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2703 Martin Luther King Jr Ave SE
Stop 7714
Washington, DC 20593-7714
Staff Symbol: CG-459
Phone: 202-372-1650

COMDTINST 4700.7
15 DEC 2014

COMMANDANT INSTRUCTION 4700.7

Subj: SHIP DESIGN MANAGER (SDM) PROGRAM

Ref: (a) CG-4 Technical Authority, COMDTINST 4700.4 (series)
(b) Major Systems Acquisition Manual (MSAM), COMDTINST 5000.10 (series)

1. PURPOSE. This Instruction provides roles & responsibilities, policies, guidance, and minimum standards for qualification, certification, and employment of the Ship Design Manager (SDM) Program as an integral part of the Deputy Commandant for Mission Support (DCMS) Organization.

2. ACTION. All Coast Guard (CG) unit commanders, commanding officers, officers-in-charge, deputy/assistant commandants, and chiefs of headquarters staff elements shall comply with the provisions of this Instruction. Internet release is authorized.

3. DIRECTIVES AFFECTED. None.

4. BACKGROUND. This Instruction complements the provisions of Reference (a) and is in accordance with Reference (b). The SDM Program coordinates the activities of the SDM, Technical Authorities, Sponsor, and surface domain program managers to manage the design and technical interface to new surface acquisition projects. In the Coast Guard's role as Systems Integrator for all new acquisitions, it is imperative that the CG properly carries out its responsibilities with fully qualified individuals that have been provided clear roles, responsibilities and adequate resources. Designing new CG cutters offers unique challenges. These designs are often one-of-a-kind, may be produced at low quantities, and have long development cycles. Evolving requirements and fiscal constraints force trade-offs across ship systems and functions to enable a balanced approach to a design. The CG's SDM Program is similar to the Navy's successfully implemented program in that it assigns the SDM as the Technical Warrant Holder (TWH) for Total Ship Systems Engineering of a given asset or class in acquisition. The SDM works with Acquisition Project Managers as each project's senior technical advisor and TWH managing the technical integration of requirements and

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NON-STANDARD DISTRIBUTION: CG-00, CG-09, CG-01, CG-094, CG-1, CG-2, CG-3, CG-4, CG-5, CG-6, CG-8, CGPC, DCMS, DCO, HSC, MSC

standards from Technical Directorates Commandants (CG-1), (CG-4), (CG-6) and external technical and logistics stakeholders. The SDM is ultimately responsible for ensuring the successful development of fully integrated, technically sound ship designs that meet the specified technical requirements while achieving the asset specific operational requirements.

5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide operational guidance for CG personnel and is not intended to, nor does it, impose legally-binding requirements on any party outside the CG.

6. IMPACT ASSESSMENT. None.

7. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS.

   a. Per the National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series), Figure 2-1, #1, the Coast Guard has determined that the development of this Instruction is categorically excluded from further NEPA documentations, a written Categorical Exclusion Determination (CED) is not required.

   b. This directive will not have any of the following: significant cumulative impacts on the human environment; substantial controversy or substantial change to existing environmental conditions; or inconsistencies with any Federal, State, or local laws or administrative determinations relating to the environment. All future specific actions resulting from the general policies in this Manual must be individually evaluated for compliance with the National Environmental Policy Act (NEPA), Council on Environmental Policy NEPA regulations at 40 CFR Parts 1500-1508, DHS and Coast Guard NEPA policy, and compliance with all other environmental mandates.

8. DISTRIBUTION. No Paper Distribution will be made of this Instruction. To view this Instruction or other unclassified directives visit the Coast Guard Directives System Intranet site at: http://cgweb.comdt.uscg.mil/CGDirectives/Welcome.htm and CG Portal: https://cgportal2.uscg.mil/library/directives/SitePages/Home.aspx or the Internet site: http://www.uscg.mil/directives.

9. RECORDS MANAGEMENT CONSIDERATION. This Instruction has been thoroughly reviewed during the directives clearance process, and it has been determined there are no further records scheduling requirements, in accordance with Federal Records Act, 44 U.S.C. 3101 et seq., National Archives and Records Administration (NARA) requirements, and the Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This policy does not have any significant or substantial change to existing records management requirements.

10. ORGANIZATIONAL RELATIONSHIPS.

    a. Assistant Commandant for Engineering & Logistics (CG-4) shall assign a SDM to align with Surface Program (CG-932) Project Offices. The SDM, as the Commandant (CG-459) Division Chief, reports to the Office of Naval Engineering (CG-45). Commandant (CG-932) Project Offices shall work with the SDM in the role detailed herein and shall allocate sufficient funding for the required SDM and Ship Design Team support as

described within Memorandum of Agreements, and associated Annual Execution Agreements. As Commandant (CG-459)'s permanent AC&I positions are funded through the AC&I personnel PPA, which is managed by CG-83 and DCMS-81 as the RMO, the Surface Program Manager (CG-932) shall provide input to CG-459 to plan for and manage the full utilization of the Ship Design Team.

b. The SDM manages all efforts related to total ship systems engineering for the assigned asset class or system, integrating the requirements and standards of the Technical Warrant Holders' Warranted Technical Areas, across all technical directorates, Commandant (CG-1), (CG-4), and (CG-6) and external technical stakeholders independent of any organizational boundaries. The SDM supports the Project priorities with regard to cost, schedule and performance. The SDM is responsible for keeping the Assistant Commandant of Engineering & Logistics (CG-4) and the office of Naval Engineering (CG-45) informed of projects' progress, significant technical issues and advanced notice of key program-decision meetings and high level reviews. Status reports should be provided either orally, via email, or more formally as needed, to management and any other applicable stakeholders.

11. QUALIFICATION AND ASSIGNMENT. The SDM will be drawn from the USCG Naval Engineering community and is required to achieve specific levels of technical and program management competence that qualify them to hold a Technical Warrant for Total Ship Systems Engineering. This includes a degree in a related technical engineering field and specific leadership experience in the Naval Engineering Community at both operational and organizational levels. The SDM must demonstrate sufficient proven ability in areas including the technical processes for ship design and specification development, technical expertise in systems engineering, judgment in making technical decisions, stewardship of engineering capabilities, and accountability for technical integrity. The SDM is required to attain a DHS Level III Acquisition Certification within 18 months of their designation. Commandant (CG-4), as the Warranting Officer, will designate a SDM and applicable Warranted Technical Areas in writing. Enclosure (1) provides a sample memorandum.

12. ROLES AND RESPONSIBILITIES. The following lists roles and responsibilities of the SDM. The list is not all inclusive, but represents major roles and responsibilities. The SDM shall:

    a. Serve as the TWH for an assigned asset class for Total Ship Systems Engineering.

    b. Manage the integration of requirements and standards from other TWHs across a specific asset class or system.

    c. Be assigned to and perform the duties of Division Chief for the Ship Design Management Division (CG-459) within the Office of Naval Engineering (CG-45), and supervise all assigned Ship Design Team members.

    d. Develop the Technical Data Package for an asset class in alignment with the Technical Directorates.

    e. Ensure requirements traceability from the approved Operational Requirements Document (ORD) to system specification.

f. Act as objective, independent agent when evaluating the merits of individual technical issues, considering integration within the total ship system.

g. Facilitate the timely resolution of technical issues and develop technically acceptable alternatives.

h. Manage the engineering effort of the Ship Design Team ensuring the successful development of fully integrated, technically sound ship designs that meet the specified technical requirements while achieving the asset specific operational requirements.

i. Participate in requirements feasibility, definition and documentation development including Mission Analysis Reports (MAR), Mission Needs Statements (MNS), Concept of Operations (CONOPS), Preliminary Operational Requirements Documents (PORD), Analysis of Alternatives (AA), and Operational Requirements Documents (ORD) by coordinating actions among TWHs and external technical stakeholders to provide formal technical evaluations to the Sponsor and Acquisition Project Manager.

j. Develop Annual Execution Agreements (AEA) with each supported Commandant (CG-932) Project Office that outlines critical work to be completed each year and the funding required.

k. Coordinate Technical Directorate TWHs and external technical stakeholders for all major technical reviews such as the Systems Requirements Review, Systems Design Review, Preliminary Design Review, Critical Design Review and Production Readiness Review.

l. Participate in Independent Logistics Assessments, Source Selections, Readiness Reviews, Technology Readiness Assessments, and Operational Assessments.

m. Participate as a member on Risk Management and Configuration Control Boards.

13. CONCLUSION. The SDM Program shall be implemented to ensure the development of fully integrated; technically satisfactory ship designs that meet specified technical requirements.

14. FORMS/REPORTS. None.

15. REQUEST CHANGES. Units and individuals may recommend changes via the chain of command to the Office of Naval Engineering, Commandant (CG-45).

B. D. BAFFER /s/
Rear Admiral, U.S. Coast Guard
Assistant Commandant for Acquisition

M. J. HAYCOCK /s/
Rear Admiral, U.S. Coast Guard
Assistant Commandant for Engineering and Logistics

Encl: (1) Sample Ship Design Manager Designation Memorandum

ENCLOSURE: SAMPLE SHIP DESIGN MANAGER DESIGNATION MEMORANDUM

U.S. Department of Homeland Security
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Stop 7714
2703 Martin King Luther Jr Ave
Washington, DC 20593-7714
Staff Symbol: COMDT (CG-4)
Phone: (202) 475-5554
Fax: (202) 475-5959

5400
Date

MEMORANDUM

From: I. M. Technical Authority, RDML
COMDT (CG-4)

To: CAPT I.M Ship Design Manager, USCG

Subj: DESIGNATION OF SHIP DESIGN MANAGER

Ref: (a) SHIP DESIGN MANAGER PROGRAM, COMDTINST 4700.7

1. You are assigned as Ship Design Manager (SDM) and Technical Warrant Holder (TWH) for the XXXX Cutter Program(s). Your roles and responsibilities are as defined in reference (a).

2. You are qualified based on your expert knowledge, experience and judgment. Your signature acknowledges your understanding and acceptance of the authority, responsibility and accountability of a SDM. This letter is your warrant of technical authority and is effective immediately.

3. This warrant does not circumvent your responsibilities to your Chain of Command. However, it does provide you with the authority and accountability to directly access the co-signers of this warrant without fear of administrative repercussion in issues affecting technical performance, operational readiness and safety.

4. As SDM, you are required to attain a DHS Level III Acquisition Certification within 18 months of this designation letter.

5. Your Technical Warrant shall remain effective until you are reassigned, your employment is terminated, or your designation is revoked. In the event that you are reassigned or your employment is terminated, the issuing authority must be notified in writing within 10 days of the effective date of action.

6. By your signature below you hereby acknowledge this authority and the responsibilities stated in this memorandum.

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Received by: _____ Date: _____

Copy to: Acquisition Project Office