

U.S. Department of
Homeland Security

United States
Coast Guard



SURFACE FORCES LOGISTICS CENTER TIME COMPLIANCE TECHNICAL ORDER PROCESS GUIDE



CGTO PG-85-00-40-S

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17 March 2011

U.S. Department of
Homeland Security

United States
Coast Guard



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MEMORANDUM

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Reply to SFLC-ESD
Attn of: Robertson (410) 762-6632

To: CGTO PG-85-00-40-S User

Subj: SURFACE FORCES TIME COMPLIANCE TECHNICAL ORDER (TCTO)
PROCESS GUIDE

- (a) Naval Engineering Manual, COMDTINST M9000.6E
- (b) Electronics Manual, COMDTINST M10550.25B
- (c) COMDT COGARD Washington DC 301953Z SEP 08/ALCOAST 479/08, CG-4,
COMDTNOTE 4000

1. PURPOSE. This memo promulgates the revised Surface Forces TCTO Process Guide and is applicable to all floating assets and their support infrastructures. The intent of the process guide is to facilitate configuration control on surface assets, one of the four "cornerstones" of modernization. The guide was developed to aid and guide those who originate, review and have the authority to take action on TCTOs. TCTOs require a change to an asset, frequently a physical change, or a special, urgent inspection requiring compliance within specified time limits.
2. SUPERSEDES. This Process Guide supersedes all other and previous TCTO Process Guides.
3. ACTION. This Process Guide applies to configuration management of all Coast Guard floating assets *at both Modernized and Non-Modernized units*. This Surface Forces TCTO Process Guide is written for all surface assets (cutters, barges, boats), delineating SFLC's implementation authority over all surface assets.
4. AUTHORITY AND RESPONSIBILITY. The TCTO process applies to all Surface assets.
5. CHANGES. Recommendations for changes and improvements to this process guide should be submitted IAW CG-22 Process Guide PG-85-00-20-S.

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REFERENCES:

- (a) SFCCB Process Guide, CGTO PG-85-00-70-S
- (b) International Specifications for Technical Publications, S1000.D
- (c) Ordnance Manual, COMDTINST M8000.2 (series)
- (d) OPNAVINST 4000.79 (series)

CHAPTER 1: INTRODUCTION

A. GENERAL

1. This Surface Forces Time Compliance Technical Order (TCTO) Process Guide explains the process for developing and releasing TCTOs to the fleet. TCTOs can be used as a vehicle for directing changes to asset configuration, changes to operational capabilities and performing time critical maintenance actions and inspections. The purpose of most TCTOs processed through this guide shall be to direct asset changes. This guide is written with enough detail to provide instruction on the process to Coast Guard personnel.
2. The processes outlined in this guide apply to all Cutters, Barges and Boats. The term “asset”, in the context of this Process Guide, is a general term used to describe Coast Guard Cutters, Barges and Boats.
3. This Process Guide applies to assets throughout the entire life-cycle. During acquisition, any changes executed to an asset class after one or more such assets have already been delivered, must be retrofitted, or a new asset sub-class must be created and concurrently authorized by the Surface Forces Configuration Control Board (SFCCB) consisting of; CG-45, CG-731/751, CG-64, CG-113 and CG-9 if in acquisition. The decision to establish a sub-class is driven primarily by one or both of the following factors, as determined by the Tri-Partite:
 - a. Configuration differences cause an appreciable difference in the “per operating hour” cost.
 - b. A significant difference in logistics support requirements.

NOTE

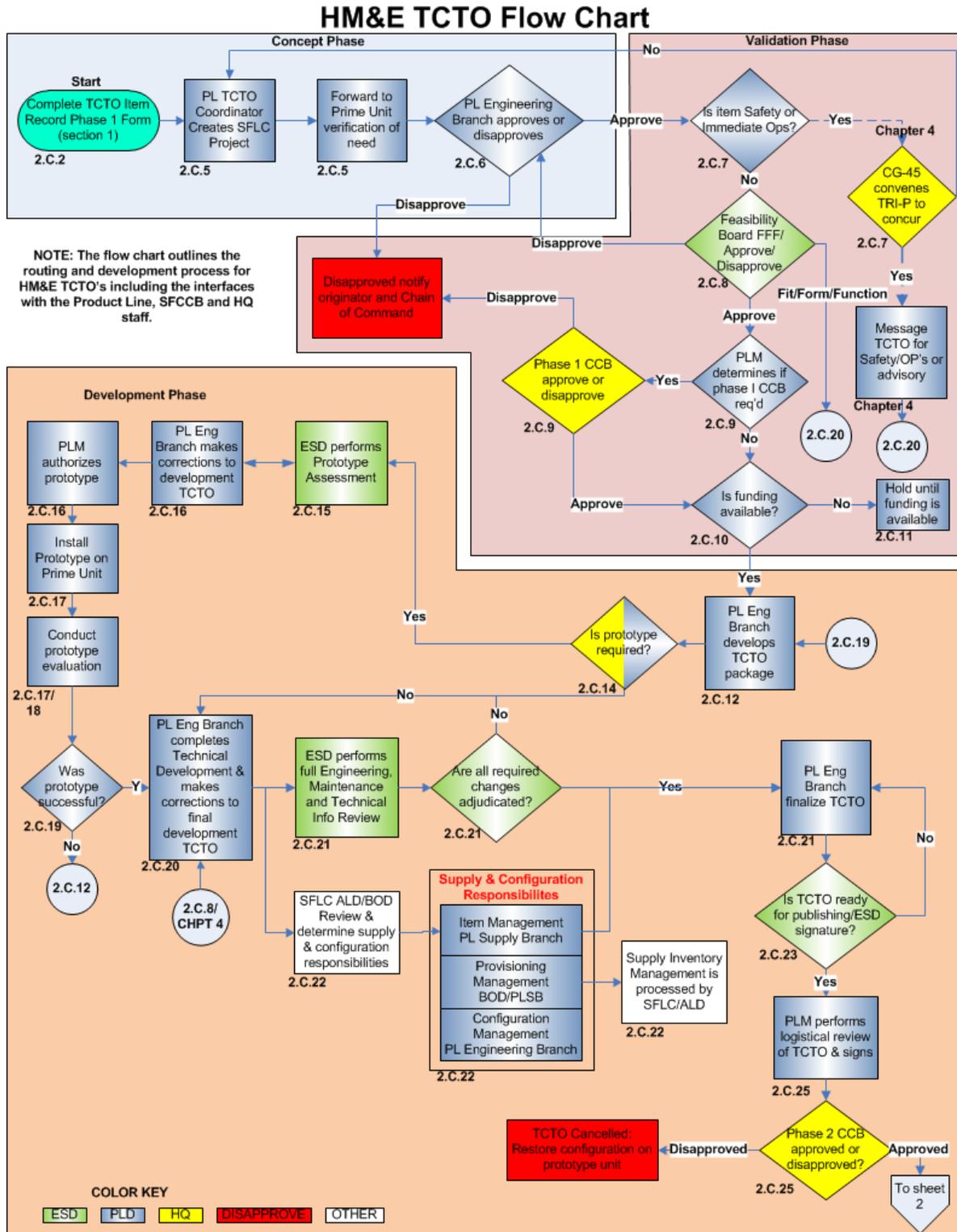
For assets still in acquisition, contact CG-9 to determine alignment of engineering change processes.

4. This guide applies to assets and units that have undergone Logistics Modernization (Modernized Units) and those that are operating under a traditional Naval Engineering and Electronics support infrastructure (Non-Modernized Units). Where differences exist in processes for Modernized and Non-Modernized Units, these differences are indicated in the Process Guide text.
5. The TCTO Process Guide also applies to personnel protective equipment and lifesaving gear.
6. TCTOs are required for the following types of configuration change proposals:
 - a. Changes to an asset’s mission characteristics or operational capabilities.
 - b. Changes in weight or weight distribution.
 - c. Changes to hull structure, space allocation, watertight integrity, or compartmentation.
 - d. Change to any system that affects spare parts allowances onboard assets.
 - e. Changes to an approved fluid or paint system.
 - f. Changes that require Electromagnetic Compatibility (EMC) or TEMPEST Inspections.
 - g. Form, fit and/or function changes.

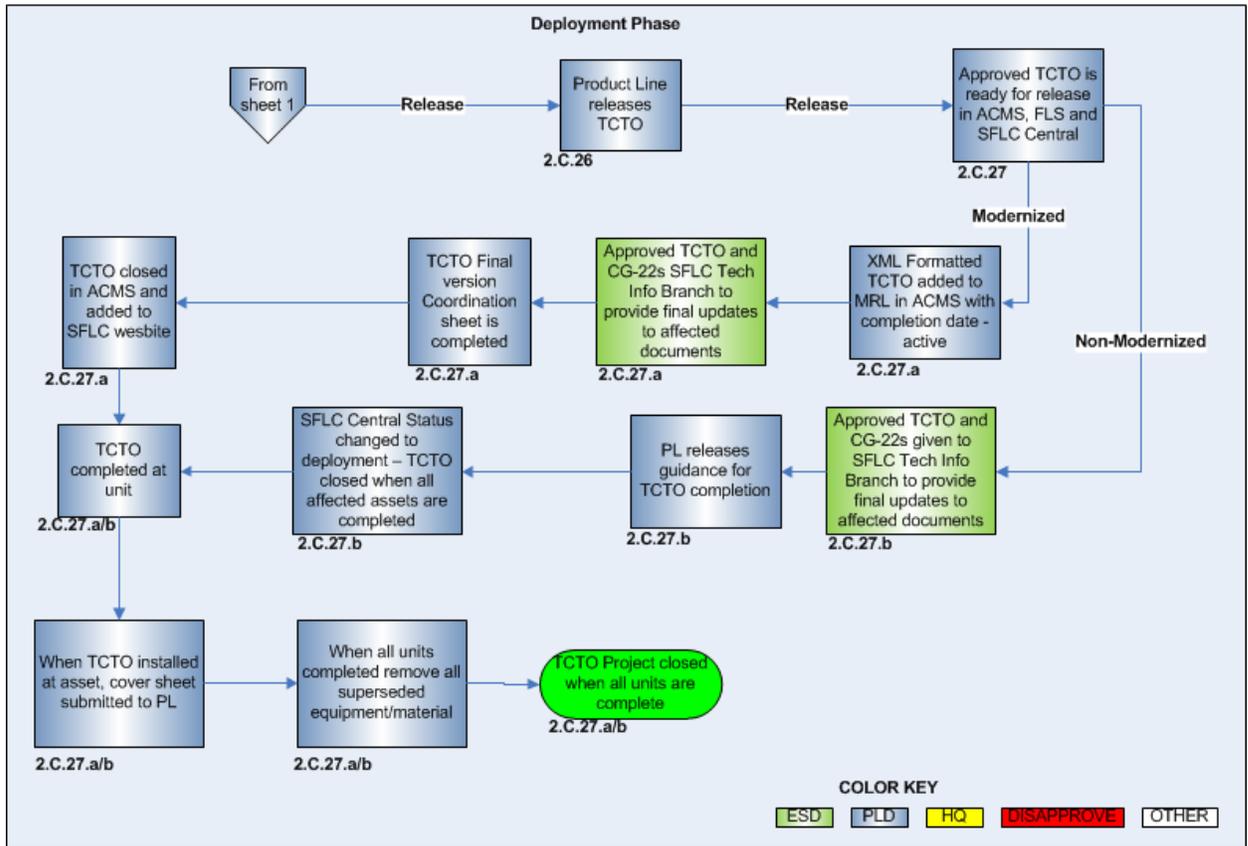
- h. Changes that require firmware or software modifications.
 - i. Changes that modify the Damage Control classification of a fitting.
 - j. Fleet-wide time-sensitive inspections.
 - k. Revisions to previously approved TCTOs or previously approved Engineering Changes (EC).
7. Surface Forces Configuration Control Board procedures and processes are provided in reference [\(a\)](#). Actions not requiring SFCCB review are identified in the SFCCB Process Guide.
8. Any proposed change that shall modify an asset's mission characteristics or capabilities must be documented through the asset's operational sponsor in CG-7.
9. A general glossary and index of terms can be found in [Appendix A](#).

CHAPTER 2: TIME COMPLIANCE TECHNICAL ORDER (TCTO) (Hull, Mechanical & Electrical)

The flow chart below outlines the routing and development process for TCTOs, including the interfaces with the SFCCB and HQ staff. This Flow Chart applies specifically to HM&E/Non-C4IT TCTOs.



HM&E TCTO Flow Chart sheet 2



A. TCTO DEVELOPMENT CRITERIA:

There are often ideas on how to improve the operational capabilities, efficiency, safety and effectiveness of an asset during its life-cycle. All prospective TCTOs must be evaluated through an objective set of criteria to ensure that changes are made after a thorough analysis. TCTOs must be evaluated for life-cycle costs, safety, law/regulation, logistics, operational availability, maintainability, design interface, training, human factors and facilities.

B. TCTO CONDITIONS:

1. Close coordination is required amongst CG-45, CG-75/73 and SFLC during all aspects of the TCTO process.
2. CG-9 serves as the Chair of the Surface Forces Configuration Control Board (SFCCB) for those asset classes in acquisition. The applicable CG-7 staff chairs the SFCCB for asset classes in sustainment. Details regarding the SFCCB Process are contained in reference [\(a\)](#).
3. The Product Line shall inform the applicable SFCCB if a proposed TCTO is rejected or cancelled at any point in the process after Phase I SFCCB to ensure there is adequate visibility. If the Product Line decides to cancel a TCTO after Phase 1 SFCCB approval has been granted, the Product Line must seek permission from the SFCCB, as outlined in [Chapter 2.C](#). The Product Line Engineering Branch shall notify the appropriate entities so the change can be cancelled as applicable in the Asset Logistics Management Information System (ALMIS) or Surface Forces Logistics Center (SFLC) Central Projects. The originator shall be notified in writing by the Product Line when a TCTO is cancelled.
4. Once a TCTO is in the deployment phase, it shall be completed on all assets among the class within the time constraints provided in the TCTO unless cancelled by the SFCCB. A TCTO shall not be deployed without a fully developed funding plan.
5. The process flow for a revised TCTO is the same as an original TCTO.

C. TCTO PROCEDURES:

An example TCTO and template are found in [Appendix B](#). The procedures for developing a TCTO are as follows:

1. The TCTO process starts with suggestions from the field, MISHAPs, Original Equipment Manufacturer (OEM) Service Bulletins, or changes to operational requirements through ORD. TCTOs may also be initiated from within the Product Line based on an Unsatisfactory Report (UR) for an affected part, asset MISHAP, or from parts reliability data.

NOTE

Anyone in the Coast Guard can raise an issue that starts the TCTO process. However, TCTOs must undergo initial screening by the submitter's Chain of Command, Prime Unit or unit as designated by the Product Line, and Product Line as outlined below

CONCEPT PHASE

2. TCTOs shall be initiated by submitting TCTO Phase 1 Form ([Appendix C](#)), to the respective Product Line through the chain of command. TCTOs shall be endorsed by one of the authorities

listed below. When the change is an operational improvement, the endorsing authority must comment directly on the operational scope of the improvement and the specific impact on mission execution.

- a. Cutter Commanding Officer (O-5 and above)
- b. Group Commander
- c. Sector Commander
- d. DOG Unit Commander
- e. Training Center Commanding Officer
- f. District Chief of Response or Prevention
- g. Areas and FORCECOM (O-5 and above)
- h. Headquarters Staff (O-5 and above)
- i. Asset Project Office Commanding Officer
- j. Product Line Manager
- k. Engineering Services Division (GS-14/O-5 and above)
- l. Base Support Unit Commanding Officer

3. Any draft TCTO that proposes an improvement in asset operational capability must be accompanied by an Operational Requirements Document (ORD) and an endorsement by the respective CG-7 staff (CG-731 or CG-751), with appropriate funding for development, implementation and full life-cycle support costs, including inventory, Standard Support Level (SSL) increases, personnel resources, training, etc. Note that CG-45 and CG-64 staffs, along with the SFLC, may provide assistance in developing these ORDs.

4. Draft TCTOs shall adhere to the format contained in [Appendix B](#).

5. When the Product Line receives a properly endorsed TCTO Phase 1 Form, it shall be forwarded to the Prime Unit or competent authority for verification of need and begin to track the TCTO Phase 1 Form by creating a project in SFLC Central.

6. The Prime Unit shall forward their recommendation to the Product Line Engineering Branch which shall approve or disapprove the TCTO Phase 1 Form. If disapproved, Product Line Engineering Branch shall include a written explanation of disapproval to the originator. If approved, the Product Line Engineering Branch shall develop a draft TCTO and update the status of the TCTO in SFLC Central Projects by changing the status from "Concept" to "Validation". The Product Line Engineering Branch shall enter an electronic copy of the draft TCTO into the SFLC Central Projects database for tracking purposes.

VALIDATION PHASE

7. The Product Line must promptly notify CG-451 on all draft TCTOs that may impact crew safety, asset survivability or the immediate readiness of the entire asset class to facilitate discussions during the next Tri-P. This notification may be accomplished by informal means but must be followed by official Message TCTO or safety advisory IAW [Chapter 4](#).

NOTE

All tasking between the SFLC divisions shall be accomplished using SFLC Central Activities linked to Projects.

8. The Product Line shall create an activity to Engineering Services Division (ESD) in the SFLC project developed in paragraph 2.C.5 above, requesting SFLC Feasibility Board approval of a draft

TCTO; providing the draft TCTO, TCTO Phase 1 Form ([Appendix C](#)), Feasibility Board Checklist ([Appendix D](#)) and the Fit, Form, Function (FFF) Requirements Guideline ([Appendix E](#)). The SFLC Feasibility Board shall forward all recommendations and findings to the Product Line Manager for further action and adjudication. The SFLC Feasibility Board also has the authority to disapprove proposed TCTOs and return them for resolution in the concept phase.

- If the Feasibility Board determines that a draft TCTO proposes no change to the fit, form or function of the configuration item as defined above, the SFLC Central Project status of the draft TCTO shall be changed to “development” and the draft TCTO shall be forwarded IAW [2.C.20](#).

9. The Product Line Manager shall determine if a Phase 1 SFCCB is required based on a review of the criteria contained in reference [\(a\)](#). If a Phase 1 SFCCB is required, the Product Line shall create an SFLC Activity to CG-45 and attach the Feasibility Board Checklist ([Appendix D](#)), draft TCTO, TCTO Phase 1 Form and the funding determination/business case analysis.

10. If a Phase 1 SFCCB is not required and funds are immediately available, the SFLC Project shall be changed from “Validation” to “Development.” Product lines shall create an activity and request a TCTO tracking number from ESD Aging Cutter Branch (ACB). If funding is unavailable for development and implementation, the Product Line Manager shall not change the status of the SFLC Project to “Development” until funds are available.

11. If funds are unavailable, the TCTO shall be placed in a queue awaiting funds. These pending projects shall be reviewed during a Product Line funding assessment. Feasibility Board/SFCCB approvals expire after 24 months, after which unfunded TCTOs shall revert to the Concept Phase or be considered for cancellation.

DEVELOPMENT PHASE

12. The Product Line Engineering Branch shall further develop the draft TCTO package addressing all of the following 10 elements of logistics:

- a. Design interface
- b. Maintenance planning (to include Reliability Centered Maintenance [RCM])
- c. Manpower and personnel
- d. Supply support
- e. Support equipment
- f. Technical data (to include CG Drawings, Technical Manuals, Illustrated Parts Breakdowns, OSS, etc.)
- g. Training and Training Support
- h. Computer Resources Support
- i. Packaging, Handling, Storage and Transportation (PHS&T)
- j. Facilities

13. The Product Line must have all requirements above completed prior to the ESD Full Engineering, Maintenance and Technical Information Review.

NOTE

If capacity does not exist within the ESD to provide TCTO development support in the time constraints identified by the Product Line, the ESD shall provide support alternatives to the Product Line.

14. If prototype is not required, proceed to Paragraph [2.C.20](#). If prototype is required, Product Line Engineering Branch shall provide a Prototype Checklist ([Appendix F](#)) and proceed to Paragraph [2.C.15](#). A request for a second installation may be appropriate when Product Line has one or more potential solutions and is unable to determine which is the most operationally suited.

15. The Product Line Engineering Branch shall review and forward all documentation provided in Paragraph [2.C.14](#) to the ESD Naval Architecture and Marine Engineering Branch (NAME) and Engineering Services Division Electronics Ordnance Branch (ESD EOB) for prototype assessment and technical review. For more complex changes, it is more efficient for technical experts within the ESD NAME Branch to work in collaboration with the Product Line. As the technical authority, the ESD NAME Branch shall conduct the following technical reviews:

- a. Electrical Systems Review: Including but not limited to the following:
 - Evaluate each change against existing plant and/or distribution system equipment to ensure adequate capacities, ratings and sizes.
 - Provide recommendations for modifications or analysis (this includes generators, switchboards, breakers, transformers, cables, wire-ways, load centers, panel boards, Uninterruptible Power Supplies (UPSs), IC systems, machinery control/monitoring systems, etc.) where necessary.
 - Evaluate each change against applicable standards, requirements and policies.
- b. Pollution Prevention Review: The Pollution Prevention Coordinator shall coordinate a review of all potential environmental impacts associated with the TCTO, e.g., exhaust emissions, overboard discharge, waste stream, fire suppressant agents, etc. In addition, the Pollution Prevention Coordinator shall review each draft TCTO and determine if modifications are required to the Authorized Chemical List (ACL). The Pollution Prevention Coordinator shall work with the Product Line Supply Branch Equipment Specialist to minimize the use of new HAZMAT and changes to the ACL. If an equivalent chemical is already in use on the asset class that meets the new application requirements, the existing chemical should be used instead of increasing the number of different chemicals on the ACL.
- c. Naval Architecture Review: The ESD NAME Branch shall provide weight, moment and center of gravity (TCG, LCG, VCG) calculations for each development TCTO. The ESD NAME Branch shall provide recommendations on ballast installation or design modifications to maintain satisfactory stability and sea-keeping characteristics, where necessary. They shall also provide recommendations on any required structural modifications necessary to support the proposed change, where necessary. In all cases, the ESD NAME Branch shall log the weight, moment and center of gravity changes through the lifecycle of each asset class.
- d. Auxiliary Systems Review: Including but not limited to the following:
 - Evaluate each TCTO to verify that required heating, ventilation and air conditioning (HVAC) capacity is adequate. Provide recommendations for modifications where necessary. This includes an evaluation of the heat load generated by any new electronic equipment or machinery and identification of any required modifications to ventilation, air conditioning, or heating systems.
 - Evaluate each TCTO to verify that any required distributed fluid or gaseous system capacities and piping are adequate. Provide recommendations for modifications

where necessary. This includes compressed air systems, fuel, lubricating oil, cooling water systems, potable water, feed-water, hydraulic systems, combustion air and exhaust systems.

- Evaluate the impact of the TCTO to installed auxiliary systems, to verify adequate capacity. Provide recommendations for modifications where necessary. This shall include water makers, boilers, compressors, incinerators, Hydraulic Power Units (HPUs), steering gear, flight safety equipment, pumps, etc.
- Evaluate each TCTO to verify that any required weight handling systems are adequate and provide recommendations for modifications where necessary. This includes impact of structural modifications which could affect dimensional changes or operational limitations.

e. Propulsion Systems Review: Including but not limited to the following:

- Evaluate each TCTO for airborne noise and vibration impact. Provide recommendations for modifications where necessary.
- Evaluate each TCTO for propulsion powering impact. Provide recommendations for modifications to prevent overloading and degraded reliability of propulsion equipment where necessary. In certain cases, this could include conducting underway propulsion performance trials (during the prototype evaluation) and modifications of either the speed/pitch profiles for controllable pitch propeller equipped vessels or modifying the pitch of fixed pitch propellers.
- Evaluate impact of the TCTO on equipment access (i.e. Engine and Reduction Gear removal routes). Provide recommendations for modifications where necessary.

f. Technical Information Review: The ESD Technical Information Management Branch (TIMB) shall provide an initial review of the TCTO for the following:

- Reviews TCTO to ensure Surface Engineering Drawings have been accurately identified. Also lists any additional drawings requiring revision that are not currently captured in the TCTO.
- Reviews TCTO to ensure any current or new Surface Technical Manuals have been accurately identified. Also lists any additional Technical Manuals requiring an amendment that are not currently captured in the TCTO.

16. The Product Line Engineering Branch shall compile all required and recommended changes from ESD to update draft TCTO. The Product Line Engineering Branch shall ensure that all required changes have been made and shall produce a revised draft TCTO. After required changes to the TCTO are complete, the Product Line Engineering Branch shall forward the draft TCTO along with a Prototype Authorization Memo IAW [Appendix G](#) to the Product Line Manager concerning the following:

- a. Prime Unit designation as determined by Product Line or SFCCB.
- b. Duration of Prototype Evaluation Plan shall be set by the Product Line.
- c. If prototype fails to produce intended results, removal of system shall occur within sixty (60) days of end date of evaluation period and shall be funded by the Product Line.

17. The Prototype Authorization Memo shall be signed by the Product Line Manager and forwarded to the Prime Unit for prototype installation and evaluation.

18. Based on the results of the prototype evaluation, the Product Line shall:
- a. Complete MPCs.
 - b. Validate TCTO removal and installation procedures.
 - c. Identify any discrepancies with installation kits and submit an SFLC Activity to Asset Logistics Division (ALD) to create or update Supply Item Change Records (SICRs)/Item Entry Proposals (IEPs) addressing inventory requirements for the purpose of obtaining a National Stock Number (NSN) for any new parts required to execute the TCTO or associated MPCs.
 - d. Updates made to Engineering Operational Sequencing System (EOSS)/Engineering Operating Procedure (EOP)/Casualty Control Manual (CCM) software, if the TCTO impacts Operational Sequencing Systems.
 - e. Identification of any discrepancies with technical publications, CG Drawings, or other technical information related to the change and submit new CG-22s (as required) to accomplish changes previously unidentified prior to the prototype evaluation.
 - f. Recommendations made regarding suitability for fleet-wide implementation.
 - g. Addressing of any concerns with the engineering technical package pertaining to the installation or the equipment/system operation during the prototype evaluation.
 - h. Working with the Prime Unit to make changes to the development TCTO.
19. If lessons learned during the prototype evaluation and/or the installation are perceived to be high risk from a technical or operational standpoint, the PLM may request of CG-45 approval to direct a subsequent trial installation at an alternate unit. This second installation:
- a. Occurs after the prototype and is typically not accomplished by the Prime Unit.
 - b. Is analyzed for optimal method of installation (field level, Contractor Field Team, Industrial YARD, or commercial Programmed Depot Maintenance (PDM)).
 - c. Allows the Product Line to verify parts lists, make final refinements to MPCs and ensure all issues identified during prototype testing have been addressed.
 - d. Shall be reviewed by ESD prior to second prototype installation.
20. The Product Line shall complete the draft TCTO incorporating the information obtained from the prototype, if conducted. The Product Line's review of the TCTO package may include the following and verified by application of the checklist in [Appendix H](#) and/or [Appendix I](#):
- a. A review of the engineering, maintenance, testing, configuration, support equipment and technical information details of the TCTO by the Product Line's Engineering Branch in preparation for an ESD review.

- b. A review of the supply support to include Item Entry Proposals (IEPS), Repairable/Consumable (R/C) forms, SICRS and PHS&T details of the TCTO by the Product Line's Supply Branch in preparation for ALD and BOD processing. Non-conventional stock points, heavyweight items and oversized items require early adjudication with ALD and BOD.
- c. A review of the computer support, manpower and personnel, training and facilities details by the Product Line.

21. Product Line Engineering Branch shall task ESD through an SFLC Activity for implementation assessment and review of the final development TCTO package ([Appendix I](#)). ESD shall compile a list of required changes from all of its branches and respond to the Product Line SFLC Activity to send required changes to the Product Line Engineering Branch for completion. Required changes must be resolved to the Technical Authority standards.

22. The following activities shall be accomplished in parallel and/or in collaboration:

- a. The TCTO is reviewed by SFLC ALD and BOD to determine provisioning and item management responsibilities. If the Product Line that is assigned lead supply chain management responsibilities differs from the Product Line implementing the TCTO, then it becomes the responsibility of both Product Lines to collaborate and ensure that all item management, related COTR functions and provisioning needs are addressed.
- b. IAW the approved Engineering Integrated Logistics Support Plan (EILSP)/Equipment Support Sheet (ESS), the appropriate Product Line shall be responsible for developing SICRs, IEPs, Supply Support Requests (SSRs), Internal Supply Support Requests (ISSRs), etc. Product Lines shall forward all Supply Item Management Records to SFLC ALD for execution of ALD supply chain management functions and functional manager oversight of Product Line inventory management activities. Details on the SICRs/IEPs/SSRs/ISSRs and all other supply chain management elements are contained in the SFLC Supply Chain Management Process Guide.
- c. As noted in the approved EILSP and in Paragraph [2.C.22.b](#), the appropriate Product Line Engineering Branch(s) shall ensure that only authorized parts added to shipboard and/or warehouse inventory are those parts documented on the new MPCs.
- d. The Product Line Engineering Branch shall send the appropriate activities to ESD ACB for creation of Configuration Item Functional Descriptions (CIFDs) in Fleet Logistics System (FLS). The Product Line Engineering Branch shall create Configuration Management Sets, Maintenance Standards and Maintenance Items.

23. Once all changes required by the engineering, maintenance and technical review have been adjudicated, the ESD Activity has been closed and the Product Line has incorporated all changes identified in the logistics review, the final TCTO shall be forwarded to the ESD Division Chief for signature.

24. ESD Chief shall review the TCTO and confirm that engineering, maintenance and technical information issues from Paragraph [2.C.20](#) have been adjudicated. ESD Chief shall ensure readiness of the TCTO for publishing, sign the TCTO Phase 2 Form ([Appendix J](#)) and forward to Product Line Manager for signature.

25. Product Line Manager shall sign the TCTO Phase 2 Form ([Appendix J](#)) and an SFLC Activity shall be sent to CG-45 for SFCCB Phase 2 IAW reference ([a](#)). After final approval of the SFCCB Phase 2 decision, the SFCCB Manager shall inform the SFLC Commander and Product Line Manager that TCTO is ready for deployment.

NOTE

If a Phase 2 SFCCB disapproves the development TCTO, the Product Line Manager shall restore the Prime Unit back to original configuration with funding from the entity that provided the PEP.

DEPLOYMENT PHASE

26. The Product Line Manager shall ensure that the TCTO is not released until parts are available to execute the TCTO. This ensures that TCTOs are released with kits, partial release as kits become available, or at a specified time for a particular reason (i.e., to align with a cutter/boat PDM availability). If a kit is required, it shall be complete with all hardware items.

27. Once sufficient parts are on-hand for implementation, the TCTO shall undergo preparation for release in ACMS for Modernized Units; for non-Modernized units inform the fleet and populate in FLS as a Maintenance Standard. To accomplish this, the following activities are performed:

a. Modernized Units using ACMS: The following activities apply to TCTOs that effect one or more assets assigned to Modernized Units.

- The final revision to the TCTO is converted to .xml format by ESD.
- The approved TCTO is added to the Maintenance Requirements List (MRL) in ACMS, by the Product Line Engineering Branch along with a required completion date. The TCTO shall become active and readily visible to field units when it is added to the MRL.
- A copy of the approved TCTO and all applicable CG-22s are given to SFLC ESD Technical Information Branch to provide final updates to all affected technical documents, e.g., CG Drawings and Technical Publications, etc.
- The approved TCTO is added to the [SFLC website](#) by the SFLC BOD.
- The status of the change in SFLC Central Projects shall be changed from “Development” to “Deployment” by the Product Line Engineering Branch.
- Create FLS Maintenance Items (MI) with install dates for all platforms if applicable.
- The TCTO shall be “Closed” in SFLC Central Projects by the Product Line when all affected assets have accomplished the change. The final copy of the TCTO, along with all supporting documentation, shall be loaded to SFLC Central Projects.

b. Non-Modernized Units: The following activities apply to TCTOs that effect one or more assets assigned to Non-Modernized Units.

- A copy of the approved TCTO and all applicable CG-22s are given to SFLC ESD Technical Information Branch to provide final updates to all affected technical documents (i.e. CG Drawings and Technical Publications).
- The approved TCTO is added to the [SFLC website](#) by the SFLC BOD.
- The Product Line Engineering Branch Chief shall inform the fleet with guidance on timelines for implementation.
- The status of the change in SFLC Central Projects shall be changed from “Development” to “Deployment” by the Product Line Engineering Branch.
- Create FLS Maintenance Items (MI) with install dates for all platforms.

- The TCTO shall be “Closed” in SFLC Central Projects by the Product Line when all affected assets have accomplished the change. The final copy of the TCTO (along with all supporting documentation) shall be loaded to SFLC Central Projects.

D. TCTO TRACKING:

Non-Modernized units shall track project completion in SFLC Central and FLS.

Modernized units with one or more assets enrolled shall use the tracking procedures and guidelines below. Note that if a Product Line has assets assigned to both Modernized and Non-Modernized Units, they must dual-track TCTOs using procedures outlined both in this Section. Furthermore, All TCTOs shall be tracked in SFLC Central Projects, even if they impact Modernized Units only. The intent is to ensure that all TCTOs are available in a single repository. The following guidelines and procedures apply to Modernized Unit TCTO Tracking:

1. The SFLC ESD has overall responsibility for TCTO file maintenance and ACMS data integrity.
2. Only ESD ACB can add, void, cancel, or modify records at any point in the TCTO process. The TCTO number deleted from the database shall not be assigned to any future TCTO. Voided TCTOs do not appear on the ACMS Asset Comprehensive TCTO Status Report, but may still be retrieved from ACMS.
3. As stated above, a centralized TCTO tracking system is contained within ALMIS and ported into ACMS. This tracking system shows where a particular TCTO is in the TCTO process.
4. TCTOs are categorized by asset type e.g., RB-S, MLB, CPB, MSR, etc., and also by sub-class where these exist. For example, 270’ WMECs have an “A” and “B” sub-class; 75’ WLRs have “A” through “F” sub-classes. Sub-classes are designated exclusively during acquisition or during major rehabilitation with SFCCB approval and are indicated in CG Drawings and other SFLC-managed configuration records.
 - Mandatory Special Requirements (MSR) sub-class include Life Support (LS), Ground Support (GS), Avionics (Electronics) Support (AS) and Publication Audit (PA).
5. A TCTO is then tracked by the ACMS code, which contains six characters:
 - a. The first character shall be a “T” to designate the ACMS code as a TCTO. The next two characters indicate the applicable S1000D Chapter based on the equipment affected ([Appendix K](#)), i.e., J2 - Ventilation. The fourth and fifth characters contain the sequential number within an S1000D category and are specified in reference [\(b\)](#).
 - b. The sixth character of the ACMS code is used to track TCTO revisions. An original TCTO ends with a zero. Revisions to existing TCTOs shall be identified by the basic four-digit TCTO number, followed by a sequential number, depending on the number of times the directive has been revised. For example, the third revision to TCTO UTB-41 TB1000 would be TCTO UTB-41 TB1003.
6. Once a TCTO is completed, parts are on-hand and it is ready for deployment, it shall be added in ACMS to the MRL by the Product Line Engineering Branch. Once it is posted to the MRL, the change shall be visible to the field and shall show up as maintenance due in respective asset Maintenance Due Lists (MDLs).

7. TCTO completion is automatically tracked through ACMS. Once a unit completes the change, the Field Unit provides the completed TCTO paperwork to the Field Terminal Operator (FTO) and it is removed by the FTO from the asset MDL. If a unit fails to complete the maintenance within the deadline issued within the TCTO, the item shall show up on the Unit's Overdue Maintenance List web report, visible to all personnel with access to ALMIS.

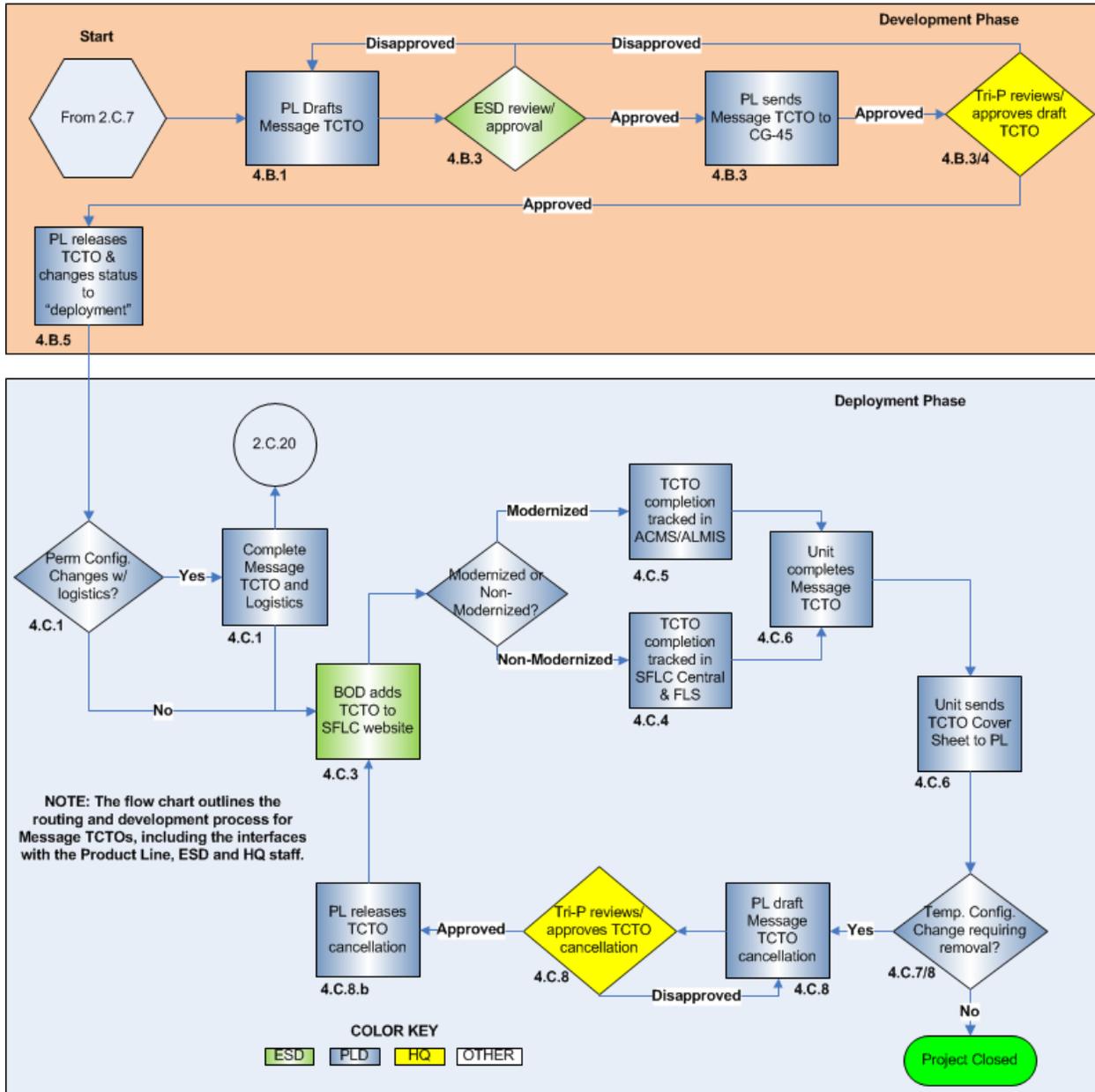
CHAPTER 3: C4IT TIME COMPLIANCE TECHNICAL ORDER (TCTO) (Electronics)

The Process flow and narrative for C4IT TCTO is currently under review and will be mutually developed by SFLC and C4ITSC under the guidance and leadership of the newly chartered Mission Support Leadership Team For Electronics (MSLT-FE).

CHAPTER 4: MESSAGE TCTO

The flow chart below outlines the routing and development process for Message TCTOs, including the interfaces with the SFCCB and HQ staff.

Message TCTO Flow Chart



A. GENERAL:

Message TCTOs are used for rapid dissemination of maintenance actions and configuration changes that are of an urgent nature due to safety or severe operational degradation. Message TCTOs are not appropriate for complex changes with many design and logistics elements, since the Message TCTO process bypasses key portions of the TCTO development process that are intended to address these elements. The general guidelines for Message TCTOs are aligned with those of formal TCTOs; however, the timeline for execution is expedited. [Appendix L](#) contains a template Message TCTO and the [Message Flow Chart](#) is a flow chart showing the Message TCTO process. The process for the Concept Phase for standard TCTOs contained in [Chapter 2](#) and [Chapter 3](#) also apply to Message TCTOs. The process for Message TCTOs is identical for assets assigned to Modernized and Non-Modernized units, C4IT or HM&E, with the exception of tracking.

B. MESSAGE TCTO VALIDATION AND DEVELOPMENT:

1. The Product Line shall draft the Message TCTO and cover sheet that includes all required information provided in [Appendix L](#). The draft Message TCTO shall be submitted to Product Line Manager for review and approval.
2. In order to ensure other occurrences of the problem elsewhere in the fleet are addressed, all other PL Engineering Chiefs shall be informed of the problem. If applicable, they shall collaborate on appropriate means to address the situation.
3. The SFLC ESD Chief shall approve all Message TCTOs; this approval may be provided verbally. The Product Line Manager shall then forward the message TCTO to CG-45 to convene the Tri-P for concurrence. If ESD Chief, CG-45, or Tri-P is unavailable and the Message TCTO is intended to address a time sensitive safety or operational issue, the requirement may be waived by the Product Line Manager but must be followed up as soon as possible.
4. CG-45 shall forward the draft Message TCTO to the Tri-P for concurrent review, with appropriate deadlines for feedback based on the relative urgency of the TCTO. After concurrent review by the Tri-P, the Product Line shall make any recommended changes and forward to the Product Line Manager for release.

NOTE

Concurrent review may be waived for particularly urgent operational issues, with verbal authorization by CG-731/751 and CG-45.

5. Product Line releases the Message TCTO and marks for deployment.

C. MESSAGE TCTO DEPLOYMENT:

1. Released Message TCTOs requiring permanent configuration and logistic changes shall be routed through the applicable standard TCTO process ([2.C.20](#)) by the Product Line, concurrent with the ensuing steps of the Message TCTO deployment phase.

NOTE

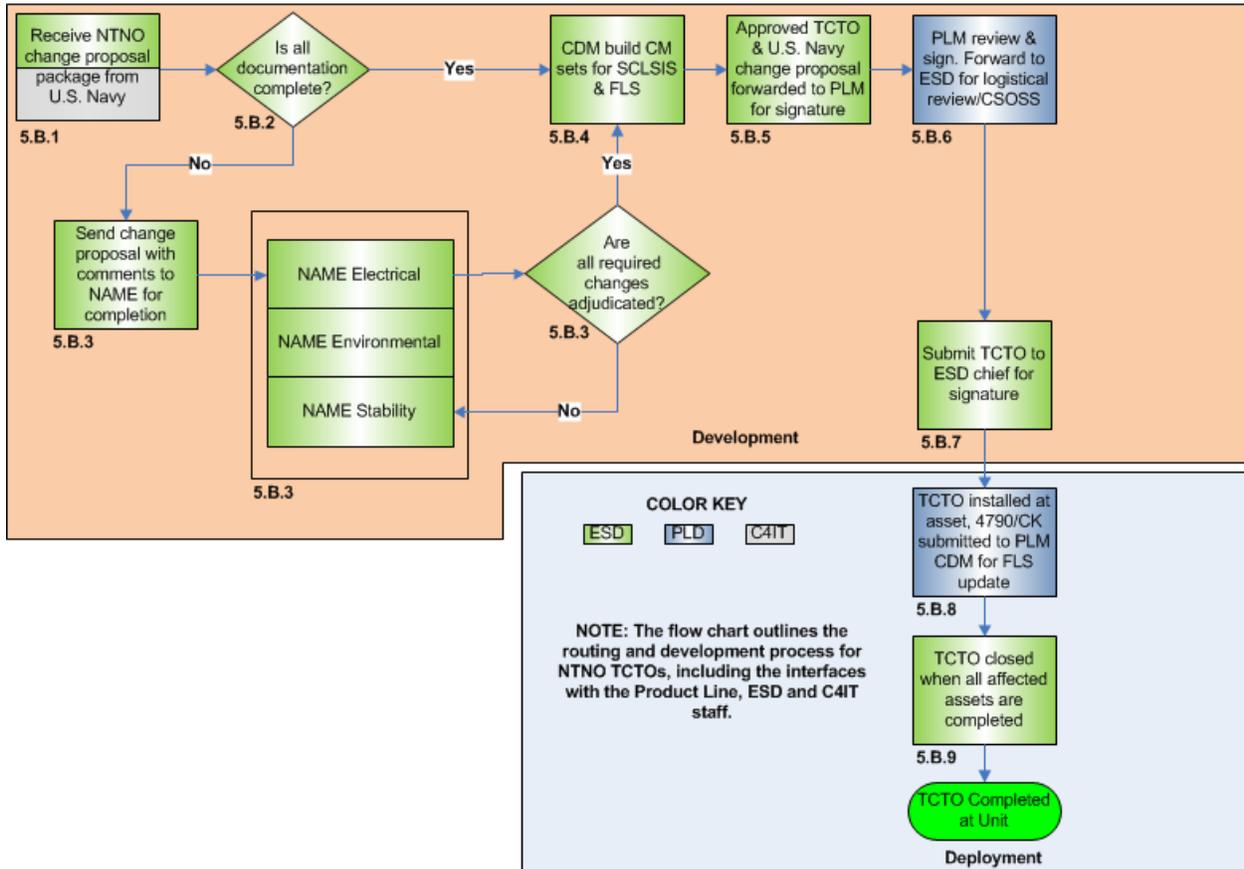
Full deployment of the Message TCTO shall not be delayed by routing through the standard TCTO process.

2. Released temporary Message TCTOs, permanent TCTOs without logistics changes and/or technical order TCTOs shall only be routed through the Message TCTO deployment phase and shall not re-enter the standard TCTO process.
3. The released Message TCTO shall be added to the SFLC website by the SFLC BOD.
4. For Non-Modernized Units, the Product Line shall create a TCTO project in the SFLC Central Projects Database and load a copy of the Message TCTO into it. Product Lines shall create and load Maintenance Items in FLS. All assets shall complete the Message TCTO and forward their TCTO Cover Sheet to the Product Line for completion tracking. As the Message TCTO is completed by each asset, the Maintenance Item associated with the Message TCTO/asset shall be marked as “completed” by the Product Line in FLS.
5. For Modernized Units, Message TCTO completion is automatically tracked through ACMS. Once a unit completes the change, the TCTO for that unit is closed out by the Field Terminal Operator (FTO) and it is removed from the MRL. If a unit fails to complete the maintenance within the deadline issued within the Message TCTO, the item shall show up on the Unit’s Overdue Maintenance List web report, visible to all personnel and Commands with access to ALMIS Electronic Asset Logbook (EAL) and the affected Field Unit shall be unable to “check the asset out” in EAL.
6. All assets shall complete the Message TCTO and forward their TCTO Cover Sheet to the Product Line IAW paragraph [2.C.20](#) so all documentation, drawings, RCM and configuration are updated.
7. When the Message TCTO is completed on all assets, non-temporary Message TCTO projects shall be closed.
8. For Temporary Message TCTOs, the Product Line shall draft a Message TCTO cancellation with instructions to restore to original configuration, for Tri-P review:
 - a. Disapproved TCTOs shall be routed back to the Product Line for further action (if required).
 - b. Tri-P-approved cancellation Message TCTOs shall be released by the Product Line to all affected assets for action and forwarded to SFLC BOD for posting to the SFLC website. The cancellation Message TCTO completion shall be tracked via steps [4.C.4](#) or [4.C.5](#).
9. Upon completing the configuration restoration, all cancellation Message TCTO projects shall be closed.

CHAPTER 5: AMPLIFYING REQUIREMENTS FOR NAVY-TYPE, NAVY-OWNED (NTNO) EQUIPMENT

The flow chart below outlines the routing and development process for TCTOs. This Flow Chart applies specifically to NTNO TCTOs.

NTNO TCTO Flow Chart



A. NTNO EQUIPMENT:

1. Modifications to Navy-Type, Navy-Owned Equipment, including Ordnance Systems, are originated and developed by the U.S. Navy. Details regarding configuration management and alteration of these systems are contained IAW references [\(c\)](#) and [\(d\)](#). Configuration changes to this equipment are governed entirely by the U.S. Navy.
2. Configuration changes to NTNO equipment receive funding from AFC-80 and do not compete with other TCTOs for resources. All Navy Ordnance Alterations (ORDALTs), Engineering Change (EC), or other valid configuration changes must be submitted to the SFLC ESD EOB. ESD EOB shall take this information and promulgate it using the [NTNO TCTO Flow Chart](#).

B. NTNO PROCEDURES:

1. ESD EOB receives a joint Coast Guard/Navy CCB approved Navy EC package. This suffices as SFCCB Phase 1 and 2 approvals for the Coast Guard, with Coast Guard participation at this SFCCB by CG-75, CG-45, and/or CG-64. ESD EOB shall create SFLC Central Project and begin milestone tracking in the development phase.
2. ESD EOB shall perform an assessment of the package to ensure all documentation is present and shall develop any documentation that the Navy EC Proposal may lack. Navy's logistics documentation includes:
 - a. EILSP
 - b. Force Revision
 - c. Combined Onboard Ship Allowance List (COSAL)
 - d. NAVSUP 2002 System or Equipment Technical Publications and drawings
 - e. PMS SKED 3.2
3. ESD EOB shall task other ESD elements through an SFLC Activity for implementation assessment and review of the final development TCTO package. ESD shall compile a list of required changes from all of its branches and respond to ESD EOB to send required changes for resolution. Required changes must be resolved to the Technical Authority standards. Copies of TCTO development documentation shall be forwarded to the Product Lines at appropriate times in the development cycle to allow for Product Line planning for availability.
4. ESD EOB shall internally create an activity to the NTNO Configuration Data Manager (CDM) to build the Configuration Management (CM) sets for Ship Configuration and Logistics Information System (SCLSIS) and FLS. ESD EOB shall create an activity to the Product Line Engineering Branch to create a Maintenance Item (MI) in either FLS or ALMIS. If the draft TCTO affects Combat Systems Operational Sequencing Systems (CSOSS), the package shall be forwarded to the applicable Naval Surface Warfare Center (NSWC) for action.
5. Once all required changes have been made, ESD EOB shall forward the draft TCTO and TCTO Phase 2 Form ([Appendix J](#)) to the Product Line Engineering Branch for review.
6. Product Line Engineering Branch shall forward the draft TCTO to the ESD Chief for signature.
7. ESD Chief shall forward the draft TCTO to the Product Line Manager for signature to ensure package is ready for publishing.

8. Navy/Contract Installation Teams shall submit OPNAV 4790/CKs for removed and installed equipment to the SFLC ESD EOB NTNO CDM who shall update the CM set and notify CSOSS coordinator and Product Line of the installation.

9. When all asset installations are complete, the SFLC Central Project shall be closed by ESD EOB and the Product Line shall be notified.

APPENDICES

APPENDIX INDEX

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APPENDIX A: ACRONYMS AND GLOSSARY OF TERMS

A

ACL Authorized Chemical List

ACMS Asset Computerized Maintenance System - the system used to track and schedule maintenance actions on U.S. Coast Guard assets

AFC Allotment Fund Code

ALC Aviation Logistics Center (previously Aircraft Repair & Supply Center [AR&SC])

ALM Asset Line Manager – The Asset Line is responsible for all engineering and logistics associated with a single asset type. There may be multiple Asset Lines within a single Product Line (as is the case with small boats).

AMM Asset Material Manager

ALMIS Asset Logistics Management Information System integrates two mature, transactional systems: AMMIS and ACMS

AMMIS Asset Maintenance Management Information System is the fully integrated system that records and reports all aviation information, including inventory functions, at AR&SC.

Asset Term used to describe Aircraft, Cutters, Boats, and Barges.

B

BOD Business Operations Division – The BOD

C

C4IT Service Center Command, Control, Communications, Computers & Information Technology Center. This is the modernized electronics support entity that consists of TISCOM, C2CEN, OSC and both MLC (t) divisions. The C4IT Service Center provides development and implementation of all C4IT TCTOs, MPCs, and associated technical documentation.

CG-22 A form used to recommend changes to MPCs, Technical Publications, Drawings, and engineering instructions. CG-22s are also used to initiate the TCTO process.

COE Center of Excellence – The C4IT Service Center is comprised of three COEs: C2CEN, OSC, and TISCOM.

COTR Contracting Officer Technical Representative

CSOSS Combat Systems Operational Sequencing System - A system developed and maintained by Navy Surface Warfare Center to manage combat systems casualty control. CSOSS is currently installed on WMSL class cutters, and will be installed on other cutters in the future.

CT Core Technology – Each COE has several CTs, responsible for support of standardized C4IT equipment, systems, and services which cross multiple Product Lines. An example is the Navigation CT, responsible for support of all electronic navigation systems on assets and at shore units throughout the Coast Guard.

CTM Core Technology Manager – The CTM is the single “touch point” for all C4IT engineering, logistics, and maintenance support for the C4IT systems and services assigned to them. The CTM reports to the C4IT Service Center COE they are assigned to.

D

DC Damage Control

DOG Deployable Operations Group

E

EAL Electronic Asset Logbook – The software system used to log, track, and view asset status and activities. EAL is used by Modernized Units, and is accessed through ALMIS.

EC Engineering Change – The EC process has been superseded by the TCTO Process.

EILSP Engineering Integrated Logistics Support Plan

EMC Electromagnetic Capability

EOB Electronics Ordnance Branch

EOSS Engineering Operational Sequencing System - A system developed and maintained by Navy Surface Warfare Center to manage engineering casualty control. EOSS is currently installed on WMSL class cutters, and will be installed on other cutters in the future.

ESD Engineering Services Division; the primary ESD for SFLC is located in Baltimore, MD. The ESD is responsible for the TCTO process. Note that there are also ESD Support elements at the two traditional Maintenance and Logistics Commands (the Specifications Branches). Furthermore, the C4IT Service Center provides technical development and implementation of all electronics TCTOs (an ESD function).

ESD Engineering Services Division

ESD-ESB-ELEX Engineering Services Division – Electronics Support Branch – The ESD-ESB-ELEX serves as the “asset integrator” for all electronic systems installed on surface forces assets, and works across SFLC Product Lines to implement C4IT TCTOs common across multiple asset classes. This ESD branch works routinely with C4IT Service Center, developing TCTOs, MPCs, and allowance/sparing requirements.

ESU Electronics Support Unit

F

Fit The term “fit” is used to describe any change that affects an interface with other components

Feasibility Board The SFLC is responsible for maintaining a Feasibility Board to provide oversight of the SFCCB process at the SFLC. The ESD Chief serves as the chairperson of the board; the members include all of the Product Line Engineering Section Chiefs, a representative from the C4IT Service Center (for C4IT TCTOs), and cross-product line subject matter experts (when appropriate). The SFLC may adjust the board membership as necessary to provide appropriate oversight and input to the SFCCB process.

FFF Fit, Form and/or Function

FLS Fleet Logistics System – this is the software application used to associate maintenance with funds expenditures, manage configuration, and develop the Naval Engineering Project List. FLS is used in support of Non-Modernized Units. Furthermore, FLS currently supports programmed depot maintenance for both Modernized and Non-Modernized Units.

Form The term “form” is used to describe any change that affects the weight, balance, or moment of inertia of a component.

FTO Field Terminal Operator – Modernized units are assigned an FTO, who is responsible for entering certain data into ALMIS, including TCTO and MPC completion.

Function The term “function” is used to describe any change that affects operational characteristics.

G

GFE Government Furnished Equipment

GFP Government Furnished Property

H

HM&E Hull, Mechanical, and Electrical

I

IEP Item Entry Proposal

J

K

KO Contracting Officer

KS Contracting Specialist

L

Logistics Modernization This is a term to describe the broad CG-wide alignment of all shore, surface, and aviation engineering and logistics policies and processes to the aviation business model. Logistics Modernization of surface forces includes transformation to a bi-level maintenance program, centralization of funding, personnel resources, and support under Product Lines, and a shift to aviation IT tools (ALMIS).

M

Modernized Units Modernized Units are those that have undergone Logistics Modernization. This is a term to describe transformation to a new bi-level maintenance and logistics structure, mapped from the aviation business model.

MPC Maintenance Procedure Card

MDL Maintenance Due List – this is a comprehensive list of all depot and organizational-level maintenance due on a platform. The MDL is available to Modernized Units in ALMIS.

MRL Maintenance Requirement List – this is the Modernized Unit / ALMIS equivalent to the NEPL, with the exception that it includes all naval, ordnance, and electronics systems requirements.

MSR Mandatory Special Requirements – MSR are maintenance requirements not tied specifically to an asset, or common across multiple assets. Examples include boat trailers, damage control gear, and personnel protective equipment.

N

NAME Naval Architecture and Marine Engineering

Non-Modernized Units Non-Modernized units are those that have not yet undergone Logistics Modernization. These units are supported by traditional Naval Engineering processes and organizations that have not yet been mapped to the new CG Logistics Model.

NEM Naval Engineering Manual

NEPL Naval Engineering Project List

NE-TIMS Naval Engineering Technical Information Management System – this is an on-line database of all CG Drawings and Technical Publications for surface assets.

NSWC Naval Surfaces Warfare Center

O

OEM Original Equipment Manufacturer

ORD Operational Requirements Document - A top-level decision document which establishes the minimum acceptable standards of performance and optimum performance goals for an asset.

OSS Operational Sequencing System – A set of systems developed and maintained by Navy Surface Warfare Center to manage combat and engineering casualty control. OSS includes the Combat Systems Operational Sequencing System (CSOSS) and Engineering Operational Sequencing System (EOSS). OSS is currently installed on WMSL class cutters, and will be installed on other cutters in the future.

P

PL Product Line – the PL is responsible for all assets within a certain class. Examples include the 378’ WHEC Product Line, Patrol Boat Product Line, and the Small Boat Product Line. A PL may be responsible for a single asset type (i.e. 378’ WHEC Product Line), or multiple asset types (i.e. Small Boat Product Line).

PLM Product Line Manager – the PLM is the single “touch point” for all engineering, logistics, and maintenance support for the assets assigned to them. The PLM reports to the SFLC Command.

Prime Unit The purpose of a Prime Unit is to ensure a centralized point of technical responsiveness to field level maintenance management of a specific asset type. Prime Units receive their tasking from the Product Line. Prototypes and MPC development in support of TCTOs are normally accomplished at the Prime Unit. The Prime Unit verifies all aspects of the proposed TCTO, including: inspections, installation procedures, parts, and changes to operating and maintenance procedures. Prime Units are designated by the PLM, with concurrence from CG-731/CG-751.

Q

QA Quality Assurance

Tri-P Tri-Partite - the Tri-Partite is a working group comprised of CG-45, CG-731, CG-64, and CG-1134 that addresses CG-wide boat issues. The Tri-P typically meets on a weekly basis.

R

RCM Reliability Centered Maintenance

S

S1000D An international convention for Technical Publication development and numbering. S1000D is an international specification for the procurement and production of technical publications. The guidance for data labeling includes a recommended Standard Numbering System (SNS). The S1000D SNS may be used in place of SWBS codes in all modernized technical information applications including ACMS, MPCs, and TCTOs. CG Drawings and legacy Technical Publications still use SWBS codes rather than S1000D.

SCLISIS Ship Configuration and Logistics Information System

SFCCB Surface Configuration Control Board – the SFCCB meets as required to vote on proposed TCTOs. The SFCCB generally convenes twice for each TCTO (Phase 1 and Phase 2 approval). The Phase 1 SFCCB meets to provide concept approval, and the Phase 2 SFCCB meets to provide approval for fleet-wide implementation. The SFCCB also makes determinations on funding and priority of pending changes, based on input from the SFLC, an evaluation of the WOW Prioritization, and a holistic review of all pending changes.

SCH Significant Component History

SCHR Significant Component History Report

SFLC Surface Forces Logistics Center – this is the new surface forces engineering and logistics organization, which is an amalgamation of the ELC, all MLCs, NESUs, and Industrials.

SFLC Central Activities – Engineering Logistics Center Central Activities is a task management software tool used by SFLC to manage internal tasking, and external tasking from CG-4.

SFLC Central Projects – Engineering Logistics Center Central Projects Database – this is an MS-Access database that houses all historic data on TCTOs and Engineering Changes. SFLC Central Projects will continue to be used by the SFLC to manage the development and implementation of TCTOs, and store historical data.

SICR Supply Item Change Record – Form used to enter data into AMMIS. SICRs address inventory requirements, are used to create stock numbers, and provide details on acceptable part numbers and CAGE codes associated with Federal Stock Numbers.

SNS Standardized Numbering System – data labeling system outlined in the S1000D international specification for the procurement and production of technical publications.

SSL Standard Support Level – this is the annual recurring O&E funding (including AFC-4X and AFC-30) received per asset. SSL varies by asset class.

SWBS Ship Work Breakdown Structure

T

TCTO Time Compliance Technical Order – the TCTO replaces the Engineering Change. TCTOs are used to document a physical change to an asset (boat, barge or cutter), or a special, urgent, or repeated inspection, requiring compliance within specified time limits.

TIMB Technical Information Management Branch

TP Technical Publication

U

UR Unsatisfactory Report of Asset Material – the UR is a report used to document a deficiency in a component provided by the SFLC. This document is similar to the SFLC Supply Deficiency and Quality Deficiency Reports.

V

W

WOW World of Work – A tool used to prioritize TCTO development and implementation. The WOW should include the following elements: Safety, Law/Regulation, Operational Impact, and Lifecycle Cost Benefit. The WOW score is used to prioritize funding, technical development resources, and other resources required to implement a configuration change to an asset class.

X

Y

Z

APPENDIX B: SAMPLE TCTO

The Phase 2 Form ([Appendix J](#)) shall be used in conjunction with a cover sheet and template as follows:

U.S. COAST GUARD
ASSET COMPUTERIZED MAINTENANCE SYSTEM

MLB - 47
TH1000.0
REV'D: 02/25/09

ASSET NUMBER	OPERATING ACTIVITY	MAINTENANCE ACCOMPLISHED				MAINTENANCE DUE			
		DATE			ASSET HOURS	DATE			ASSET HOURS
		MO	DAY	YEAR			MO	DAY	

ITEM NO.	CMS CODE	ACTION	DESCRIPTION	CEINUM
[X] DUE	TH1000	REPLACE	AUTOPILOT	ML-B000-001

SCHEDULED
 UNSCHEDULED

MAN HOURS: MK DC EM ET GM BM FN SN OTHER

REMARKS: _____

TECHNICIAN'S SIGNATURE	TECHNICIAN'S ID
------------------------	-----------------

*ASTERISK INDICATES QA REQUIRED	QA							
---------------------------------	----	--	--	--	--	--	--	--

IMMEDIATE ATTENTION REQUIRED

TIME COMPLIANCE TECHNICAL ORDER

TCTO MLB-47 TH1000

THIS TECHNICAL ORDER IS APPLICABLE TO ALL 47
FOOT MLB STANDARD BOAT HULLS.

THIS TECHNICAL ORDER DIRECTS AND AUTHORIZES
THE REPLACEMENT OF THE CURRENT RAYTHEON
AUTOPILOT SYSTEM WITH THE FURUNO NAVPILOT
500 AUTOPILOT SYSTEM.

REVIEWED BY	LOG YN	DATA ENTRY COMPLETED
-------------	--------	----------------------



The following template shall be used in the “body” of all TCTOs. Note that the red/italicized text provided below are instructions on content for the applicable section. Ensure that all formatting is correct after deleting instructions and inserting text where necessary. The finished TCTO shall have all instructional text deleted and be checked for quality assurance against the applicable checklist provided within the TCTO Process Guide.

1. APPLICATION

This technical order is applicable to *{insert asset class and subclass if applicable, i.e., “all Coast Guard Medium Endurance 210 A-Class cutters”}*.

{If prototype installation(s) was accomplished, complete this section or delete if not applicable.} Prototype installation was completed on *{insert asset (i.e., CGC Decisive, CG 47221 at STA Ocean City)}* in *{insert Month Year}* and *{shall} or {shall not}* remain installed.

{If this is a “record purposes only” TCTO, include the following statement in capital letters or delete} THIS TCTO IS FOR RECORD PURPOSES ONLY.”

2. PURPOSE

{For new TCTOs, state the purpose the TCTO including background information, i.e., an explanation of the events/reasons that led to the initiation of the TCTO}. This TCTO provides instructions to *{insert purpose or modify wording to suit purpose. As a second paragraph, insert Background}*.

{For a revised TCTO, state the purpose of the original TCTO and a brief explanation why the original is being revised}. This TCTO supersedes TCTO TXXXX.X. *{Insert Explanation}*.

3. TCTO COORDINATOR

Technical questions or comments associated with this TCTO shall be directed to *{insert Point of Contact, applicable Product Line (i.e., Medium Endurance Cutter Product Line), branch and/or section {within the Product Line (i.e., Engineering Branch/SES)}, at POC phone number XXX-XXX-XXXX or e-mail address}*.

4. WHEN TO BE ACCOMPLISHED

This TCTO shall be accomplished with *{insert number}* days after receipt of this TCTO.

5. BY WHOM TO BE ACCOMPLISHED

This TCTO shall be accomplished by *{insert work party, i.e. Coast Guard Yard, Industrial Service Activity, Ship’s Force, commercial contractor, etc. If the specific work party is known, provide as many details as possible as shown below}*. *{Insert Entity coordinating installation, i.e. MEC PL PDM Section}* shall coordinate the scheduling and execution of this TCTO for each asset.

{If other than ship's force and as applicable, insert the following information if available (otherwise delete)}

Installing activity: *{Insert activity name, i.e., ISA Miami}*

Primary POC: *{Insert specific person, or office, if no one specified}*

Telephone: *{Insert number, XXX-XXX-XXXX}*

Fax: *{Insert number, XXX-XXX-XXXX}*

Email: *{Insert email address}*

6. WHAT IS REQUIRED

a. SUPPLY SUPPORT

(1) Kit/Parts/Materials Required

The followings part, kits, and/or materials are required to accomplish this TCTO and will acquired through the sources of supply as discussed herein:

- *{If kitted parts are not required, insert}* Not applicable.

{Or If kitted parts are required, use the following standard statement and fill in the table below:} The following kit contains the parts required to comply with this TCTO and shall be requisitioned from *{insert location name and address for acquiring the kit}* or as otherwise specified below.

{In the following table, list the kit quantity, national stock number, part number, nomenclature, source, and indicate if the kit if to be provided as Government-furnished Equipment (GFE). Note that not all fields are required to be completed in every instance and the field should be N/A in such cases. Required fields are dependent on the source of the material.}

TABLE 6.1 - KITS

QTY	NSN	PART NUMBER	NOMENCLATURE	SOURCE	KIT SIZE AND WEIGHT	COST (\$/EA)	GFE? Y/N
x	XXXX-XX-XXX-XXXX			SOS: xxx	L" x W" x H", ### lbs	\$###.##	
x				CAGE: xxxxx			
x				Contract or Provided			
x				(name address and contact information of provider)			
x			(provide enough information to positively identify items with procure locally sources)	Procure locally			

- *{ If there are no kits, insert}* Not applicable. *If otherwise, for each kit listed above, insert a table below for each and itemize the kit contents. Create a new table for each individual kit.}* The following tables provide an itemized list for each of the kits listed in Table 6.a.1.a. The parts listed below DO NOT need to be requisitioned separately.

NOTE

Authorized chemicals are never shipped as part of a kit.

TABLE 6.X – KIT CONTENTS: *{Insert kit NSN or Part Number from above and provide an itemized listing of each piece part within the kit in the table below, creating a new table and heading for each kit}*

QTY	NSN	PART NUMBER	NOMENCLATURE
X	XXXX-XX-XXX-XXXX		
X			

- {If parts/materials required are not provided in a kit and are being staged as an individual item(s), use the following statement or delete the table if not applicable and insert}, Not applicable.*

{Otherwise, insert the following verbiage} The following parts required to comply with this TCTO are not furnished in a kit and shall be obtained through the appropriate supply source.

{In the following table, list the component quantity, national stock number, part number, nomenclature, source, and indicate if the kit is to be provided as Government-furnished Equipment (GFE). Note that not all fields are required to be completed in every instance and the field should be N/A in such cases. Required fields are dependent on the source of the material.}

TABLE 6.X – INDIVIDUAL PARTS

QTY	NSN	PART NUMBER	NOMENCLATURE	SOURCE	GFE? Y/N
X	XXXX-XX-XXX-XXXX			SOS: xxx	
X				CAGE: xxxxx	
X				Contractor Provided	
X				(name address and contact information of provider)	
X			(provide enough information to positively identify items with procure locally sources)	Procure Locally	

- b. SUPPORT EQUIPMENT *{This is a list of all special purpose tools, special purpose test equipment and/or software required. The list should also include special personnel protective equipment (other than safety glasses and hearing protection). Torque wrenches include the required torque value/range. Fill in the fields in the below tables as much as possible, as applicable.}*

- (1) Special Tools *{Insert or delete the outline "(1)" and table below and insert None.}*

TABLE 6.X – SPECIAL TOOLS REQUIRED

QTY	NSN/NIIN	PART NUMBER	NOMENCLATURE/DETAILS	SOURCE	GFE? Y/N
X	XXXX-XX-XXX-XXXX				
X					

- (2) Special Test Equipment *{Insert or delete the outline "(2)" and table below and insert None.}*

TABLE 6.X – SPECIAL TEST EQUIPMENT REQUIRED

QTY	NSN/NIIN	PART NUMBER	NOMENCLATURE/DETAILS	SOURCE	GFE? Y/N
X	XXXX-XX-XXX-XXXX				
X					

(3) Software *{Insert or delete the outline “(3)” and table below and insert None.}*

TABLE 6.X – SOFTWARE REQUIRED

QTY	NSN/NIIN	PART NUMBER	NOMENCLATURE/DETAILS	GFE? Y/N
X	XXXX-XX-XXX-XXXX			
X				

c. TECHNICAL DOCUMENTS

As a result of this TCTO, the following documents have been updated and are required to accomplish this TCTO:

- (1) Drawings – Consult NE-TIMS (<http://10.38.16.120:1088/ne-tims/index.html>) for the most current drawing revision.
 - a) *{List drawings that are required in order to complete the TCTO. If no drawings are required, delete the outline “a)” and insert None. Otherwise, insert the following information.}* Coast Guard Drawing *{insert drawing number, revision and title}* XXX-XXX, Rev. X, Title
 - b) *{Insert additional drawings as necessary}*
- (2) Technical Publications (TP) - Consult NE-TIMS (<http://10.38.16.120:1088/ne-tims/index.html>) for the most current technical publication revision.
 - a) *{List TPs that are required in order to complete the TCTO. If no TPs are required, delete the outline “a)” and insert None. Otherwise, insert the following information.}* Coast Guard Technical Publication *{insert number}* XXXX, *{insert title}* Title
 - b) *{Insert additional TPs as necessary}*
- (3) Other *{Insert other technical documents required to complete the TCTO, i.e., manufacturer’s instructions, illustrated parts breakdown, OSS, etc.}*
 - a) *{List other documents required or delete the outline “a)” and insert None.}*
 - b) Other

d. MANPOWER AND PERSONNEL

{Fill in the below, using the existing as an example of personnel required. Labor hours should be a gross estimate}

<u>WORK PHASE</u>	<u>SKILLS</u>	<u>LABOR-HOURS</u>
Installation	AWS-Certified Welder	16.0
Inspection	Marine Chemist	1.0
Inspection	QA	0.5
TOTAL		17.5

7. HOW WORK IS ACCOMPLISHED {*The following list provides general guidelines for this section.*

- (1) *This section should be included as an enclosure to the TCTO! If provided in an enclosure, insert the following:* This TCTO shall be accomplished in accordance with Enclosure (*insert #*).
- (2) *This section shall include guidance on equipment removals and installations as applicable.*
- (3) *For assets accomplishing the TCTO (i.e., ship's force), give a concise description (Statement of Work/specification) in sequential steps (numbered steps 1, 2, 3, etc) how the work shall be accomplished, using only one action verb per sentence. Ensure all tabulated materials, kits, special tools, software, etc. in Section 6 herein are referenced within the Statement of Work/specification. Include any illustrations as necessary and give step-by-step instructions for performing all inspections, replacements, retrofit changes, etc., required by the TCTO.*

For all others accomplishing the TCTO, a performance-based Statement of Work (SOW)/specification should be provided (i.e., commercial contractor, ISA, etc.). Performance-based specifications in general provide a listing of the documents (references) and materials/special tools/equipment, etc., from Section 6 herein and states to reach the end objective of the TCTO while using the references as guidance.

For those TCTOs that shall be accomplished by contractors, provide only the amount of detail required in the SOW/specification for the asset to ensure that contractor is performing work as required by the contractor. The final version of the TCTO will list the applicable contract number and state where the contract's SOW may be found.

- (4) *Acronyms shall be spelled out in title case then followed by the acronym in the first occurrence as in the following example: Time Compliance Technical Order (TCTO).*
- (5) *Work procedures written within the body of the TCTO should reference any figures, charts and forms from within the procedures, but the actual figures, etc., shall only appear at the end of the TCTO Body, in the order in which they were referenced in the procedure.*
- (6) *If equipment pre- and/or post-operational tests are required (System Operational Verification Tests (SOVT) and/or equipment pre-installation tests (PITCO)), these tests shall be written into the SOW/specification.*
- (7) *Chemicals required shall be listed in the Authorized Chemical List (ACL). If a chemical is required that is not in the ACL, a CG Form 22 shall be completed to add the chemical to the ACL via activity to ESD. There must be a warning listed for the chemical prior to citing the work procedure involving use of that chemical. Formatting examples are shown below.}*

8. SUPPLEMENTAL INFORMATION

a. DESIGN INTERFACE

- (1) General – {*Provide a brief, yet detailed description of the TCTO design interface as applicable, i.e., The pump being installed sits on the existing foundation modified as shown on Coast Guard Drawing XXX-XXX. The new pump connects to the existing power supply and piping. Etc.*}
- (2) Weight and Center-of-Gravity Information – This TCTO presents {*choose and insert one of the three following options based on the criteria provided:*

Option 1: no effect in weight and Center-of-Gravity. If the TCTO involves only an adjustment or procedure that does not affect asset weight or stability.

Option 2: negligible change in weight and Center-of-Gravity as shown below. Insert data from ESD demonstrating negligible changes. These are changes in weight or moment that do not significantly affect intact or damaged stability. Although each case is unique due to different limiting factors, the general thresholds listed below apply:

Non-Self-Righting Small Boats (less than 65 feet in length): Changes that create more than a 0.002 ft change in the center of gravity in any direction (vertical, longitudinal, or transverse) or net weight changes of more than 1/5 of 1% of the full load displacement require a TCTO.

All Other Vessels: Changes that create more than a 0.001 ft change in the center of gravity in any direction (vertical, longitudinal, or transverse) or net weight changes of more than 1/20 of 1% of the full load displacement require a TCTO.

Option 3: significant change in weight and Center-of-Gravity as follows: This is for changes in weight or moment that significantly affect intact or damaged stability and thus require full documentation. These also include any changes that require ballast compensation. The format prescribed below indicates how this information should be documented in the TCT. Insert the data in place of the "X's" below:}

Total weight removed: XX.X pounds at:
XX.XX ft above the baseline
XX.XX ft (port/stbd) of centerline.
XX.XX ft (fwd/aft) of frame (xx)

Total weight added: XX.X lbs. at:
XX.XX ft above the baseline
XX.XX ft (port/stbd) of centerline.
XX.XX ft (fwd/aft) of frame (xx)

Net change in:
VCG (+/- XX.XXX ft)
TCG (+/-XX.XXX ft)
LCG (+/-XX.XXX ft)

New VCG: X.XXX ft above the baseline
New TCG: XXX.X ft (port/stbd) of centerline
New LCG: X.XXX ft (fwd/aft) of (frame or station)

b. ADDITIONAL TECHNICAL DOCUMENTS AFFECTED *{Non-supply or maintenance-related documents!}*

{Insert the following sentence or None. In addition to the documents identified in Section 6.c.1, the following data has been changed as a result of this TCTO: If applicable, fill in the below table using the existing as examples, for those documents affected by this TCTO other than those identified in Section 6.c.1 and/or any APLs and/or MPCs }

TABLE 8.1 – TECHNICAL DOCUMENTS AFFECTED

DOCUMENT TYPE	NUMBER	CG-22 NUMBER (or N/A)	REVISION DATE
Ship's Information Book	XXXX		Month Year
Engineering Operating Procedure			

c. MAINTENANCE PLANNING

{Insert None or the following as applicable} Per the Reliability Centered Maintenance analysis, {the maintenance planning can be addressed as either a simple function herein, i.e., the {insert component} only requires to be cleaned and inspected at XX intervals.

{Or} the maintenance associated with this TCTO shall be in accordance with the {new, modified} Enclosure (X) Maintenance Procedure Cards. New or modified MPCs are to be provided as enclosures. More than one enclosure may be generated for convenience if for example one card is modified and another is newly created}.

d. TRAINING AND TRAINING SUPPORT

{If the TCTO affects training requirements, including formal training curricula (i.e., A- or C-schools), include a statement describing the new training requirements. Training should also address initial training and any required follow-on training. At a minimum, it is recommended that personnel familiarize themselves with the applicable Tech Pubs. Otherwise, insert None.}

e. COMPUTER RESOURCES SUPPORT

{If the TCTO requires computer/IT support, include a statement describing the requirements. Otherwise, insert None.}

f. PACKAGING, HANDLING, STORAGE AND TRANSPORTATION

{Specifically state how the parts/kits/materials required to accomplish this TCTO will be delivered to the required location, any storage requirements and/or special delivery requirements, i.e., heavy equipment requiring forklift/crane services, etc. Otherwise, insert None.}

g. FACILITIES

{Provide a brief description on the effects this TCTO may have on any facility. Ensure the facility is identified by name and address. Otherwise, insert None.}

9. RECORDS

a. ACTION REQUIRED ON MAINTENANCE RECORDS

(1) Upon completion of this TCTO, the asset shall complete the applicable portion of the TCTO Cover Sheet: Asset Number, Operating Activity (OPFAC), Technician's Signature, and Technician's ID blocks, and any desired remarks. Additional remarks may be made on the reverse side of the TCTO Cover Sheet. The asset shall then forward the completed and signed TCTO Cover Sheet to the TCTO Coordinator.

(2) *{For modernized units, use the following and delete the other option:}* The affected item is tracked in the Significant Component History Report (SCHR) and shall automatically updated upon completion of the TCTO when the FTO enters the completion date in ACMS.

{For Non-Modernized Units, use the following and delete the other option:} Maintenance Standards/Maintenance Items (MIs) have been spawned in FLS for each asset and shall be marked as “Completed” for each asset as the TCTO is accomplished. The configuration tree within FLS will automatically be updated upon moving the MI status to “Completed”.

b. ACTION REQUIRED ON SUPPLY RECORDS *{The below instructions are provided to address supply record changes. If no changes are required, insert None. NOTE: If any inventory changes were affected, this information should be indicated in this section. If there was a SICR processed for the change, there shall generally be information in this paragraph.}*

(1) Modification Required for Existing Allowance Parts Lists (APL) ***{NOTE: For large APL modifications, include the modified APLs as an enclosure to the TCTO!}***

{If there are no modifications required to existing APLs (separate from deleting existing APLs), insert None and delete the following table below and remaining verbiage.}

{If there is modification of existing APL(s) required and the APLs are provided as enclosures, insert} Upon completion of this TCTO, the APLs provided in Enclosure (X) shall be modified. Ensure part(s) removed from the APL are also removed from stock and properly disposed.

{Or for small modifications to APLs, you may list the information below and insert} Upon completion of this TCTO, the following APL(s) shall be modified. Ensure part(s) removed from an APL are also removed from stock and properly disposed. *{Multiple APLs may be listed in the below table. An example of a modification would be replacement of a component on an APL with an upgraded component with a different part number. The “ACTION” below would be “Remove” for the existing and “Add” for the upgraded component}*:

TABLE 9.X –MODIFICATION TO EXISTING APL(S)

APL NO	ACTION	QTY	HSC	FUNCTIONAL DESCRIPTION
xxxxxxx		x	xxxx	<i>{insert}</i> part number and/or stock number, noun name, descriptor

(2) APL(s) to Remove ***{NOTE: For large APL removals, include the removed APLs as an enclosure to the TCTO!}***

{If there are no removals required, insert None and delete the following table below and remaining verbiage.}

If there are removals of existing APLs required and the APLs are provided as enclosures, insert} Upon completion of this TCTO, the APLs provided in Enclosure (X) shall be removed. Ensure all parts associated with the APLs are also removed from stock and properly disposed.

{Or for small removals of APLs, you may list the information below and insert} Upon completion of this TCTO, the following APL(s) shall be removed. Ensure all parts associated with the APLa are also removed from stock and properly disposed.

TABLE 9.X – APL(S) TO REMOVE

APL NO	QTY	HSC	FUNCTIONAL DESCRIPTION
xxxxxxx	x	xxxx	<i>{insert}</i> part number and/or stock number, noun name, descriptor

(3) APL(s) to Add ***{NOTE: For large APL additions, include the removed APLs as an enclosure to the TCTO!}***

{If there are no additions required, insert None and delete the following table below and remaining verbiage.}

{If there are removals of existing APLs required and the APLs are provided as enclosures, insert}
Upon completion of this TCTO, the APLs provided in Enclosure (X) shall be added.

{Or for small removals of APLs, you may list the information below and insert} Upon completion of this TCTO, the following APL(s) shall be added.

TABLE 9.X – APL(S) TO ADD

APL NO	QTY	HSC	FUNCTIONAL DESCRIPTION
xxxxxxxx	x	xxxx	<i>{insert}</i> part number and/or stock number, noun name, descriptor

{General formatting is as indicated below. Note that if these items are included, they are to be referenced from within the text of the TCTO, specifically Section 7 (How Work is Accomplished):}

FIGURES

- Figures shall be labeled and described as in the following example:
FIGURE 1 – DESCRIPTION...

TABLES

- Tables shall be labeled and described as in the following example:
TABLE 1 – DESCRIPTION...

CHARTS

- Charts shall be labeled and described as in the following example:
CHART 1 – DESCRIPTION ...

FORMS

- Forms shall be labeled and described as in the following example:
FORM 1 – DESCRIPTION ...

WARNING

WARNINGS ARE DONE IN BOLD CAPITAL LETTERS. THE TEXT IS FULLY JUSTIFIED.

CAUTION

USE THE SAME FORMAT AS A WARNING EXCEPT ONLY THE HEADING IS IN BOLD PRINT.

NOTE

USE THE SAME FORMAT AS A WARNING, BUT IN ITALICS.

APPENDIX C: TCTO PHASE 1 FORM



Adobe Acrobat
Document

APPENDIX D: SFCCB FEASIBILITY BOARD CHECKLIST

Availability	Shall the SFCCB result in an acceptable change in the asset's availability?
Reliability	Shall the SFCCB result in an acceptable change in the asset's reliability?
Logistic Supportability	Shall the SFCCB be logistically supportable?
Maintainability	Shall the SFCCB be maintainable by fleet personnel?
Interoperability	Shall the system be interoperable with other systems with which it must interface?
Compatibility	Shall the equipment be compatible with its operating environment?
Human Factors	Shall human factors aspects of the proposal support mission completion?
Training	Is training developed to support the system's operation and maintenance by fleet personnel?
Documentation	Is the technical documentation to support operation and maintenance of the proposal available and drafted?
Safety	Shall the SFCCB proposal be safe to operate and maintain?
Mission Specific Equipment Installation	Is this an A-kit/B-kit candidate?
Transportability	Shall the proposal affect the transportability of an asset?
Natural environmental effects and inputs	Is the proposal designed to minimize environmental impacts during the operational and disposal phase of the asset's lifecycle?
Commonality	Is the system/equipment under consideration part of a Coast Guard common system program (formal or informal)?

ABOVE POINTS ARE ADDRESSED INDIVIDUALLY AS FOLLOWS:

1. Availability
 - a. Shall the SFCCB result in an acceptable change in the asset's Availability?

2. Reliability
 - a. Shall the SFCCB result in an acceptable change in the asset's reliability?

3. Logistic Supportability
 - a. Shall the SFCCB be logistically supportable?

4. Maintainability
 - a. Shall the SFCCB be maintainable by fleet personnel?

5. Interoperability
 - a. Shall the system be interoperable with other systems with which it must interface?

6. Compatibility
 - a. Shall the system be compatible with its operating environment?

7. Human Factors
 - a. Shall human factors aspects of the proposal support mission completion?

8. Training
 - a. Is training developed to support operation and maintenance of the proposal available and drafted?

9. Documentation
 - a. Is the technical documentation to support operation and maintenance of the proposal available and drafted?

10. Safety
 - a. Shall the SFCCB proposal be safe to operate and maintain?

FIT, FORM OR FUNCTION: (YES) (NO)

PROTOTYPE RECOMMENDED: (YES) (NO)

SFCCB PHASE 1 RECOMMENDED: (YES) (NO)

Does an ORD exist? YES (See attached) NO (Give brief explanation below)

Prototype Evaluation Plan Developed? YES (See attached) NO (Give brief explanation below)

NOTE

The Prototype Evaluation Plan (PEP) must adequately address the 10 elements of logistics.

Modifications to EILSP Attached? YES (See attached) NO (Give brief explanation below)

OPERATIONAL EFFECTIVENESS:

OPERATIONAL SUITABILITY:

RISK ASSESSMENT

COLOR CODE

RED

YELLOW

GREEN

WHITE

DESCRIPTION

High level of risk identified

Moderate level of risk identified

Little or no risk identified

Not evaluated or assessed

Critical Operational Issues (COI)	Color Code
*Technical Performance	
Availability	
Reliability	
Logistic Supportability	
Maintainability	
Interoperability	
Compatibility	
Human Factors	
Training	
Documentation	
Safety	

NOTE:

APPENDIX E: FIT, FORM AND FUNCTION GUIDELINES

The Feasibility Board shall assess whether a draft TCTO constitutes a change to fit, form or function during the Feasibility Board review for the TCTO. Changes to fit, form or function are defined below.

- a.) **Fit:** A change that affects component interface to peripheral systems.

- b.) **Form:** A change to form that affects:
 - Stability of asset.
 - Non-Self-Righting Small Boats (less than 65 feet in length): Changes that create more than a 0.002 ft change in the center of gravity in any direction (vertical, longitudinal, or transverse) or net weight changes of more than 1/5 of 1% of the full load displacement require a TCTO.
 - All Other Assets: Changes that create more than a 0.001 ft change in the center of gravity in any direction (vertical, longitudinal, or transverse) or net weight changes of more than 1/20 of 1% of the full load displacement require a TCTO.
 - Shape of component.
 - Size of component.
 - Dimensions of component.
 - Mass of component.
 - Other visual parameters which uniquely characterize the component.

- c.) **Function:** A change that affects component/asset operational characteristics or actions that the component/asset is required to perform. Performance parameters include operational requirements such as:
 - Range.
 - Speed.
 - Lethality.
 - Performance characteristics.
 - Reliability.
 - Maintainability.
 - Survivability.
 - Safety, including:
 - Operational logistics parameters.
 - Respective tolerances.

APPENDIX F: TCTO PROTOTYPE ASSESSMENT, CHECKLIST AND TECHNICAL REVIEW

Prototype Assessment and Technical Review Checklist

The following items shall be submitted to the ESD for any Prototype Assessment and Technical Review. It is understood that some items may not be fully developed at this stage but there should be adequate information for prototype installation and operation and to justify the design and selection of the prototype components. This list may also be used as an indication for items which the Product Lines may want to task the ESD to develop in early stages of the TCTO development.

- _____ PEP
- _____ RCM Analysis and Approval
- _____ MRL & Approval
- _____ MPC Activity In Process
- _____ PIP – to include all 10 elements of Logistics below:
 - _____ *Design Interface*
 - _____ *Maintenance Planning*
 - _____ *Manpower & Personnel*
 - _____ *Supply Support*
 - _____ *Support Equipment*
 - _____ *Technical data (drawings, tech manuals, IPBs, etc)*
 - _____ *Training & Training Support*
 - _____ *Computer Resources Supported*
 - _____ *Packaging, Handling, Storage & Transportation*
 - _____ *Facilities*
- _____ TEMPEST/EMC
- _____ Technical Publications.
- _____ Other documents chosen by PL which can clarify the proposal.

For whatever installation is being made the following plans should be developed and provided for review.

If data is available, mark and provide.

If data is not available enter “N/A”.

If data is not required enter “D” for delete.

If these items are needed, they shall be identified as such in the response to the review from ESD.

Naval Architecture and Marine Engineering Branch Review

- _____ Ripout and removal specifications
- _____ Ripout and removal drawings
- _____ Installation specifications
- _____ Installation drawings, including full Bill of Materials.
- _____ Modifications to Select Record Drawings (SRDs), or guidance drawings to support a prototype.
If SRDs are not submitted, then they must be modified by the final install.

The following items apply to specific NAME Section requirements.

Electrical Systems Review: Information to demonstrate the following:

- _____ Changes or impacts to the electrical generation/distribution system to include but not limited

to generators, switchboards, breakers, transformers, cables, wire-ways, load centers, panel boards, Uninterruptible Power Supplies (UPSs) as well as IC systems and machinery control/monitoring systems.

- _____ Calculations or design criteria for any changes against existing plant and/or distribution system equipment ensuring adequate capacities, ratings and sizes.
- _____ Identified impacts on all interfaced/integrated equipment/systems
- _____ Standards applicable to the installation and testing of the new equipment.

Pollution Prevention Review: Information to demonstrate the following:

- _____ Verification that all potential environmental impacts associated with the TCTO meet the applicable regulations.
- _____ Modifications required to the Authorized Chemical List (ACL).
- _____ Use of new HAZMAT and changes to the ACL or equivalent chemicals

Naval Architecture Review: Information to demonstrate the following:

- _____ Weight, moment, and center of gravity (TCG, LCG, VCG) values for each component of the TCTO.
- _____ Verification of strength of any structural modifications.
- _____ Modifications to Docking Plans.
- _____ Habitability related changes, space configurations.

Auxiliary Systems Review: Information to demonstrate the following:

- _____ Changes or impacts to distributed systems capacities and piping; this includes but is not limited to compressed air, fuels, lubricating oil, cooling water systems, potable water, feed-water, hydraulic systems, HVAC&R, chill water, black and grey water, oily water, ballast and deballasting, drain systems, bilge suction, and distributive damage control systems such as watermist, AFFF, sea water sprinkling, or combustion air and exhaust systems.
- _____ Calculations or design criteria for any changes in distributed system capabilities including pumps, piping, or controls, for the above systems. As a minimum this is to include piping flow velocities and pressures under varying operating situations. If pumps are being changed include the pump curves.
- _____ Materials used for all components of the distributive systems above.
- _____ Any other modifications to Auxiliary Systems to include but not be limited to water makers, boilers, compressors, incinerators, Hydraulic Power Units (HPUs), steering gear, flight safety equipment, pumps, etc.
- _____ Changes or impacts to weight handling systems, including recommendations for modifications where necessary. This includes impact of structural modifications or dimensional changes which could affect operational limitations and/or characteristics.
- _____ Heat load generated by any new electronic equipment or machinery and identification of any required modifications to ventilation, air conditioning, or heating systems.
- _____ All modified/new drawings for the above.

Propulsion Systems Review: Information to demonstrate the following:

- _____ Airborne noise and vibration impacts and recommendations for modifications where necessary.
- _____ Propulsion powering impacts and recommendations for modifications to prevent overloading

and degraded reliability of propulsion equipment where necessary. This may include conducting underway propulsion performance trials (during the prototype evaluation) and modifications of either the speed/pitch profiles for controllable pitch propeller equipped vessels or modifying the pitch of fixed pitch propellers.

- _____ Impact of the TCTO on equipment access (i.e. Engine and Reduction Gear removal routes). Provide recommendations for modifications where necessary.

Technical Information Branch Review: The ESD-TIMB shall provide an initial review of the TCTO for the following requirements that need to be addressed during the prototype development:

(Documentation shall be defined as OEM manuals, drawings, and technical publications.

Technical publications are those already existing in NE-TIMS.)

- _____ Is the equipment currently in use by another Product Line/Asset?
 - *Is another Product Line/Asset developing a similar TCTO?*
 - *Is documentation from other Product Line/Asset usable?*
- _____ Does any documentation exist in the NE-TIMS database for the items that will be affected in the TCTO?
 - *Cost savings for using data that already exists.*
 - *Eliminate redundancy of two possible data sets.*
 - *Use existing documentation if possible.*
- _____ Is there documentation from OEM for the new equipment that will be installed during the prototype?
 - *Will documentation need to be procured?*
 - *Documentation should be staged.*
 - *If prototype is approved staging will allow for documentation to be included in NE-TIMS.*
- _____ Is there documentation for items being removed, updates to PLANSETS?
 - *Remove applicability for hull prototyped.*
 - *Modify drawings to reflect change.*
 - *Plan for removing obsolete documentation once prototype is implemented in the fleet.*
- _____ Have current documents been reviewed to see if changes will be required?
 - *Manuals such as the SIB, CIB, BIB, and GIB are often overlooked.*
 - *Selected record drawings (SRDs) are often overlooked.*
 - *Refrain from listing manufacturer's name in these books, keep terms generic.*
- _____ What other equipment is "touched" by the prototype?
 - *Documentation for systems "touched" by the prototype may need to be addressed.*
 - *Consider the trickle down that may occur as a result of the prototype.*
- _____ Will documentation be hosted by TIMB/NE-TIMS?
 - *Some electronic manuals are hosted by C3CEN and mentioned as so in the TCTO.*
- _____ Are any entries of "Not Affected" for technical publications, Section 8.c. of TCTO really correct?
 - *As a rule this should only be used for structural changes that do not affect configuration.*
- _____ Are the naming and actions used in the development of the prototype TCTO consistent throughout?
 - *Example: [Modify – Radio] versus [Install – VHF Transponder]*
- _____ Do graphics exist or need to be captured for future development of MPCs or other support documents?

APPENDIX G: PROTOTYPE EVALUATION AUTHORIZATION MEMO TEMPLATES

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Surface Forces Logistics Center
{Insert} Product Line Name Product Line

{Insert} Street Address
City, ST Zip Code-xxxx
Phone: (xxx) xxx-xxxx
Fax: (xxx) xxx-xxxx

4720
DD Mon YYYY

MEMORANDUM

From: First Initial. Middle Initial. Last Name, Rank SFLC {insert} PL Name Product Line Manager {or appropriate title if designee} Reply to {See 3 in instructions, pg 3} Attn of: First Initial. Middle Initial. Last Name, Rank or Title (XXX) XXX-XXXX

To: {Insert asset, i.e.,} CGC Northland
Thru:

Subj: AUTHORIZATION TO PROTOTYPE {Insert} EQUIPMENT NAME ON {Insert asset (Class-Hull No), i.e.,} CGC NORTHLAND (WMEC 904)

Ref: (a) Naval Engineering Manual, COMDTINST M9000.6 (series)
(b) Surface Forces Time Compliance Technical Order (TCTO) Process Guide, CGTO PG-85-00-40-S

1. In accordance with references (a) and (b), you are hereby authorized to prototype the {insert} Equipment Name onboard CGC {insert} Asset name. Enclosure (1) provides a copy of the draft TCTO. {Provide a brief technical explanation of the intent of the proposed TCTO here, i.e., "The intent of the proposed change is to improve the reliability of RB-S collaring systems, and decrease lifecycle cost."}. Surface Forces Logistics Center (SFLC) Engineering Services Division (ESD) has verified that the installation does not pose a threat to the cutter or crew. The official evaluation period for this prototype shall begin on the date of installation and continue until {insert date (DD Mon YYYY) or other suitable end criteria}. Your completion of the Prototype Evaluation Plan (PEP), provided as Enclosure (2), is critical in determining whether the proposed changes are suitable for further implementation. SFLC has assigned case file number {insert SFLC Projects case file number, WXXX-XXX-XX-XXX} to this Project as part of the SFLC Projects Status Database.

2. Funding for this prototype will be provided by {insert funder, i.e., SFLC} via {insert funding source, i.e., AC&I, AFC-45, etc} funds.

3. Logistics support for this prototype shall include: {Provide brief narratives for each of the applicable below in paragraph 3.a-3.j}

- a. Maintenance Planning. {insert} Brief narrative {describing planned maintenance to be done, or insert "No maintenance is required for this prototype". Also, provide direction for use of MPCs if applicable and choose one of the following: "Use the existing MPCs for the replaced item and provide feedback on them in the PEP" or "Use the attached MPCs during the prototype period and provide feedback on them in the PEP "}
- b. Manpower and Personnel. {insert} Brief narrative.

- c. Supply Support. *{insert}* Brief narrative or None.
- d. Support Equipment. *{insert}* Brief narrative or None.
- e. Technical Data. *{insert}* Brief narrative.
- f. Training and Training Support. *{insert}* Brief narrative or None.
- g. Computer Resources Support. *{insert}* Brief narrative or Not applicable.
- h. Facilities. *{insert}* Brief narrative or Not applicable.
- i. Packaging, Handling, Storage, and Transportation. *{insert}* Brief narrative or Not applicable.
- j. Design Interface. *{insert}* Brief narrative or Not applicable.

4. The cutter shall notify the Product Line Point-of-Contact (POC) listed below upon commencement and completion of the prototype installation. Please return the completed PEP along with any supporting documentation to the Product Line {choose} by DD Mon YY or within (X) weeks after the end of the prototype period.

5. The Product Line POC for this project is *{insert}* Rank/Title First Name Last Name and may be contacted at *{insert}* (XXX) XXX-XXXX for any questions or concerns.

#

Enclosures: (1) Draft TCTO
(2) Prototype Evaluation Plan

Copy: *{insert}* Distribution (*see below for examples*)
COMDT (CG-45, CG-731, CG-751, etc.)
C4ITSC

WARNING! DELETE THE FOLLOWING INSTRUCTIONAL PAGE!

Prototype Authorization Letter General Instructions – DELETE THIS PAGE UPON COMPLETION OF THE TEMPLATE!

1. All red italicized text is instructional only and shall be deleted upon completing this template.
2. All text in the final letter shall be black and no italicized text shall exist.
3. In the “Reply to” line, use the following abbreviated designation: *SFLC-Product Line-Branch-Section*, i.e., SFLC-MECPL-ENG-SES
4. Ensure the header is filled out appropriately on all pages following the first page.

Blind Copy:

APPENDIX H: TCTO QUALITY ASSURANCE (QA) CHECKLIST

The TCTO QA checklist below shall accompany all TCTOs in the routing process, as outlined in [Chapter 2](#) and [Chapter 3](#) of this Process Guide.

Quality Assurance Checklist Time Compliance Technical Order Development

Asset Applicability: _____

System Applicability: _____

TCTO #: _____

Title: _____

Step	QA Action	N/A	Correct	Incorrect	Comments
APPLICATION					
	Applicable Boat Class Identified				
	Applicable Hulls Identified				
	Prototype installation location and date Identified				
PURPOSE					
	Purpose of TCTO stated				
	If a revision, TCTO states the purpose of the original TCTO and brief explanation of why the original TCTO is revised. Includes "This TCTO supersedes [TCTO MLB-47 TJ2000]."				
TCTO COORDINATOR					
	Coordinator Identified by Name				
	Coordinator telephone and fax number provided				
WHEN TO BE ACCOMPLISHED					
	States period that TCTO is to be completed within.				
BY WHOM TO BE ACCOMPLISHED					
	States who shall be accomplishing the work directed by the TCTO (unit, depot, contractor, etc.)				
WHAT IS REQUIRED					
	Part numbers are verified.				
	NIIN numbers are verified.				
	Kit/Parts/Materials Required paragraph IAW TCTO Process Guide.				
	Action Required on Items in Stock paragraph IAW TCTO Process Guide.				
	Kit/Parts/Materials Required to Modify Items in Stock paragraph IAW TCTO Process Guide.				
	Disposition of Removed and Replaced Parts/Materials paragraph IAW TCTO Process Guide.				
	Any chemicals required shall be listed in the Authorized Chemical List (ACL).				
	Includes quantity, NSN, part				

	number, nomenclature and source using the following five column table in TCTO process guide.				
	Part numbers consistent with the text and figures.				
	Drawings Required paragraph IAW Process Guide.				
	Estimated Size, Weight and Cost of Kits IAW Process Guide.				
	Personnel Information And Requirements IAW Process Guide.				
	Special Tools, Fixtures and Software Required IAW Process Guide.				
	Tools are listed in alpha-numeric order.				
	All tools have part number and cage assigned. Note: some fabricated tools may not have part numbers.				
	Tool Format is: Noun Name, SPMIG ####, P/N: #####, CAGE: #####, SCAT: ####, NIIN: ###-##-####.				
	Only the tool noun name is used in the body.				
HOW WORK IS ACCOMPLISHED					
	WARNING Warning text is fully justified. The headings are typed in 12 point bold and uppercase. The body is typed in 10 point bold upper/lowercase.				
	Only approved WARNINGS are used.				
	CAUTION Use the same format as a warning except only the heading is in bold print.				
	<i>NOTE</i> A note uses the same format as a warning and a caution, but in italics.				
	Warning for chemicals listed prior to citing the procedure involving use of that chemical.				
	Tag-outs use the following text: "Complete Red Danger Tags IAW COMDTINST 9077.1 (series) and attach them to the following in the "OFF" position:" This is followed by a list of components to be tagged. If the position is to be other than OFF it shall be indicated in parentheses after the				

	component name, ex. ("Closed " position).				
	Steps removing Tag-outs use the following text: "Remove Danger Tags IAW COMDTINST 9077.1 (series) from the following and place in the normal position". This is followed by a list of components, usually the opposite of the Tag-out step.				
	When a procedure specifies "tighten", other than "hand tight" include the following note NOTE There is no torque value required, do not over-tighten.				
	QA requirements identified in text by: ** Q.A. (1) REQUIRED AT THIS POINT **				
	Quality Assurance inspections show as a line item estimate in the personnel information paragraph (para 6.b.).				
	Level of detail appropriate to the entity performing the work.				
	Describes what to do with all of the parts and/or material listed in paragraph 6.a.(1).				
SUPPLEMENTAL INFORMATION					
	Operational Checkout Requirements IAW TCTO Process Guide.				
	Weight And Center Of Gravity Information IAW TCTO Guide				
	Weight, Moment and Stability Data Certified by SFLC NAME Branch.				
	Auxiliary Design Interface Analysis performed/reviewed by SFLC NAME.				
	Electrical Design Interface Analysis performed/reviewed by SFLC NAME.				
	Propulsion Design Interface Analysis performed/reviewed by SFLC NAME.				
	TEMPEST Inspection requirement.				
	Equipment Integrated Logistical Support Plan (EILSP)				
	Technical Manuals properly identified and updated.				
	Training Equipment/Doctrine identified and updated.				
RECORDS					
	Action Required On Maintenance				

	Records (MPCs) IAW TCTO and MPC Development Process Guides.				
	SICRs submitted/processed.				
	Modification Identification Markings complete.				
LEVEL OF TECHNICAL REVIEW					
	The TCTO has undergone the appropriate level of technical review (within ESD, Product Line and/or OEM).				
FORMATTING					
	Outline IAW TCTO Process Guide.				
	Black, Arial 10-pitch font, except where indicated in TCTO Process Guide.				
	Text of the TCTO starts on page 2.				
	TCTO number is located on the upper right-hand corner of the header.				
	Page Number (page X of Y) is located on the bottom right-hand corner of the footer.				
	Short, concise technically accurate sentences.				
	Numerical quantities under ten spelled out unless followed by unit of measurement, time, or quantity used in series with other items expressed as numerals.				
	Illustrations and tables referenced in the text.				
	Figures numbered 1, 2,				
	Figures appear in the same sequence as referenced in the body.				
	Photographs and drawings appear as figures.				
	Drawings include a reference to the drawing number.				
	Photographs meet guidelines in process guide, JPEG format, have captions.				
	Dimensions listed in inches and feet, if appropriate metric dimensions added in parentheses.				
	Two letter abbreviations for dimensions, such as in, ft, mm, cm.				
	Dimension less than 1, have a 0 to the left of the decimal point. Example, 0.15 instead of .15.				
	Same accuracy used for a given dimension in text and on diagrams.				
	Measurements given in decimal				

	format are generally preferred with exception when clarity dictates the use of fractions				
	Revision TCTO requires a black revision bar in the margin next to where the change was made. A statement in paragraph 2.b. (purpose) of the TCTO, shall state the reason why the TCTO is being revised				
REFERENCES					
	All references are in title case.				
	References are listed in alphabetic order.				
	MPC references only include MPC number.				
	Use "Comply with MPC#####.# " when the entire procedure must be completed.				
	Use "Refer to MPC #####.#" when only a portion of the MPC is to be completed.				

Reviewer Information

Name: _____
Date: _____
Phone: _____
Email: _____

APPENDIX I: FINAL DEVELOPMENT TCTO CHECKLIST

Naval Architecture and Marine Engineering Branch Review:

The following information must be provided in the Final Development TCTO Package.

Any information not provided from [Appendix F](#) must now be provided.

_____ TCTO Package in final form.

_____ The ESD report from the Prototype Assessment and Technical Review annotated by TCTO Manager to identify the resolution to all comments. The final TCTO package should not be submitted until the required changes have been resolved to the satisfaction of the ESD branch that holds Technical Authority.

_____ All reference documents. If the version of the referenced document showing all changes brought about by implementation of the TCTO is available in NE-TIMS or other online site their location may be referenced rather than it being attached. If not they need to accompany the TCTO.

_____ If a prototype was not completed and/or a Prototype Assessment and Technical Review was not completed or if any of the information required by the Prototype Assessment and Technical Review Checklist has not previously been submitted for review, then this information needs to be submitted in addition to the information listed below. It is recommended that the PL contact appropriate ESD branches early for review of these items to prevent delay of the final TCTO review.

_____ TCTO Phase 2 Form signed by the Product Line Manager

Technical Information Branch Review:

(Documentation will be defined as OEM manuals, drawings, and technical publications. Technical publications are those already existing in NE-TIMS.)

The following information must be provided in the Final Development TCTO Package.

_____ Has documentation been entered into NE-TIMS to address equipment mentioned in the TCTO?

- Is it used by another Product Lines/Assets.
- Are PLANSETs current?

_____ Has OEM documentation been submitted to TIMB for inclusion into NE-TIMS?

- Manuals have been included and are current.
- Affected drawings revised to incorporate TCTO changes.

_____ Have hulls been removed from documentation [PLANSETs] for equipment that was removed as a result of the TCTO.

- Hull applicability could be removed gradually.
- Could remove entire PLANSETs if needed.

_____ Has documentation that will no longer be required been identified?.

- Plan to phase out the documentation.

_____ Has “Not Affected” for technical publications, Section 8.c. of TCTO only been used for structural changes that do not affect configuration..
- Justify any other use of same.

APPENDIX J: TCTO PHASE 2 FORM



Adobe Acrobat
Document

APPENDIX K: S1000D CHAPTERS

TCTOs and MPCs are classified and numbered based on the Standard Numbering System (SNS) found in S1000D. S1000D is an international specification for the procurement and production of technical publications. The S1000D extract below is associated specifically with marine vessels. S1000D Chapters are used in lieu of Ship's Work Breakdown Structure (SWBS) Codes for TCTO and MPC numbering. A detailed listing of all S1000D Chapters and associated sub-system codes are contained in reference [\(b\)](#).

CHAPTER DESCRIPTION

A0 - Propulsion - General
A1 - Power pack - General
A2 - Secondary propulsion drives
A3 - Emergency propulsion drives
A4 - Propulsion transmission systems - General
A5 - Propulsion support systems - General
A6 - Propulsion control systems -General
B0 - Structure - General
B1 - Hull - General
B2 - Body/cab - General
B3 - Special structures - General
B4 - Bulkheads/decks - General
B5 - Masts - General
C0 - Armaments - General
C1 - Gun systems - General
C2 - Guided missile systems - General
C3 - Rocket systems and pyrotechnics - General
C4 - Aircraft related weapon systems - General
C5 - Fire control systems - General
C6 - Torpedo systems - General
C7 - Electronic warfare - General
D0 - Electrical system - General
D1 - Electrical power generation - General
D2 - Primary supply and distribution systems - General
D3 - Electrical power converted supplies - General
D4 - Electrical power lighting - General
D5 - Electrical power support systems - General
D6 - Electrical power emergency supplies - General
D7 - Electrical control systems - General
D8 - Batteries - General
E0 - Communications - General
E1 - SHF/EHF - General
E2 - UHF/VHF - General
E3 - HF/MF - General
E4 - LF/VLF - General
E5 - Audio integration - General
E6 - Digital – General
E7 - Internal - General
E8 - Flight Control and instrument landing systems - General
F0 - Navigation - General
F1 - Independent - General
F2 - Dependent - General

F3 - Computing - General
G0 - Surveillance - General
G1 - Control - General
G2 - Radar - General
G3 - Sonar - General
G4 - Electromagnetic - General
G5 - Optical - General
G6 - Digital - General
G7 - Identification systems
H0 - Steering - General
H1 - Steering systems and control - General
H2 - Thrusters - General
H3 - Stabilizing systems and control - General
H4 - Diving control systems - General
H5 - Hydroplanes - General
J0 - Ventilation/ heating/ cooling - General
J1 - Climatic control systems - General
J2 - Ventilation systems - General
J3 - Air conditioning systems - General
J4 - Oxygen generating system - General
K0 - Hydraulic system - General
K1 - Main hydraulic power systems - General
K2 - Auxiliary hydraulics power systems - General
K3 - Pneumatic system - General
L0 - Electronic system - General
L1 - Cathodic protection - General
L2 - Degaussing - General
M0 - Auxiliary - General
M1 - Aircraft handling systems - General
M2 - Sea water systems - General
M3 - Fresh water systems - General
M4 - Fuels and lubricants systems - General
M5 - Gas systems - General
M6 - Cargo handling replenishment systems – General
M7 - Machinery - General
N0 - Survivability - General
N1 - Damage control - General
N2 - Escape facilities - General
N3 - Firefighting systems - General
N4 - Nuclear, biological, chemical - General
N5 - Salvage systems - General
N6 - Stability - General
P0 - Special equipment/ system - General
P1 - Special to type equipment - General
P2 - Special recovery equipment - General
P3 - Special fit equipment - General
P4 - Special purpose equipment - General
Q0 - Outfit and furnishings - General
Q1 - Preservations and coverings - General
Q2 - Protective coatings - General
Q3 - Storerooms - General

Q4 - Bathrooms and toilets - General
Q5 - Workshops - General
Q6 - Laboratories - General
Q7 - Test areas - General
Q8 - Galley/pantry/scullery - General
Q9 - Commissary - General
QA - Accommodation spaces - General
QB - Offices - General
QC - Control Centers - General
QD - Machinery spaces - General
QE - Medical, dental and pharmaceutical spaces - General
QF - Laundry - General
R0 - Training - General
S0 - Repair test and support - General

APPENDIX L: MESSAGE TCTO TEMPLATE

This is the Message TCTO template. The below general instructions are to be followed when using this template.

1. All *red italicized* text is instructional only and shall be deleted upon completing this template.
2. All text in the final message shall be black and no italicized text shall exist.
3. The Message TCTO shall be in all CAPS.
4. CGMS guidance shall be followed when generating/sending the Message TCTO.
5. The Enclosure TCTO Cover Sheet shall be attached to the outgoing Message TCTO.

DTG and Priority

FM *SFLC PLAD*

TO *Cutter(s)*

INFO *COMDT 731/751 and 451, OpCdr*

BT

UNCLAS

SUBJ: TIME COMPLIANCE TECHNICAL ORDER {*Number*} AFFECTING {*Insert affected asset class (and sub-class if applicable) and component of asset, i.e., SINGLE POINT DAVIT*}

REFERENCES: {*Insert all references, i.e., tech pubs, drawings, MPCs, existing TCTOs if message is supplemental or revision to existing, etc., in the order in which they appear in the message body*}

A. REFERENCE 1

B. REFERENCE 2

C. REFERENCE 3 {*etc*}

ENCLOSURE: TCTO TXXXX.X {*insert TCTO Number*} COVER SHEET

1. PURPOSE.

A. THIS TIME COMPLIANCE TECHNICAL ORDER (TCTO) APPLIES TO {*Insert asset class/sub-class*}.

B. THIS TCTO PROVIDES INSTRUCTIONS FOR {*Insert a brief description of the TCTO's purpose, i.e., "INSTALLATION OF THE FLIGHT DECK NET SAFETY MODIFICATIONS IN ACCORDANCE WITH REFERENCE B"*}.

C. {*Choose one of the following if applicable: "THIS TCTO SHALL REMAIN PERMANENTLY INSTALLED" or "THIS TCTO SHALL BE REMOVED {insert when}"*}.

2. BACKGROUND.

A. {*Insert an adequate discussion on the background of the Message TCTO, using the outline format illustrated herein*}.

B. {*Insert additional paragraphs as necessary*}.

3. ACTION.

A. THIS TCTO SHALL BE ACCOMPLISHED IMMEDIATELY AT THE FIRST OPPORTUNITY.

B. {*Insert the work to be accomplished under the "ACTION" heading following the below-illustrated outline format. In general, action descriptions should be concise with one action/verb per line. Separate each major action with a new paragraph and lower-tiered steps within that action as subparagraphs, using the following as an example:*} ALL UNITS SHALL CONDUCT THE FOLLOWING INSPECTION USING REFERENCES A AND B AS GUIDANCE:

1) REMOVE PIECE 1.

2) REMOVE PIECE 2.

3) INSPECT THE FOLLOWING:

A. COMPONENT 1.

B. COMPONENT 2.

C. RECORDS.

1) UPON COMPLETION OF THIS TCTO, EACH ASSET SHALL COMPLETE THE APPLICABLE PORTIONS OF THE ENCLOSED TCTO COVER SHEET (ASSET NUMBER, OPERATING

ACTIVITY (OPFAC), TECHNICIAN SIGNATURE, TECHNICIAN ID BLOCKS, REMARKS IF NECESSARY) AND FORWARD THE COMPLETED TCTO COVER SHEET TO THE MESSAGE TCTO TO THE POINT-OF-CONTACT (POC) IDENTIFIED IN PARAGRAPH 5 *{ensure the paragraph number is accurate}*.

2) *{Insert any additional instructions if necessary for additional records affected by the Message TCTO}*.

4. POCS:

A. *{Insert Primary POC OFFICE OR UNIT}*: RANK/PREFIX FIRST MI LAST AT (XXX) XXX-XXXX, OR EMAIL(AT)USCG.MIL.

B. *{Insert additional POCs OFFICE OR UNIT}*: RANK/PREFIX FIRST MI LAST AT (XXX) XXX-XXXX, OR EMAIL (AT)USCG.MIL.

5. ANY QUESTIONS OR CONCERNS REGARDING THIS MESSAGE TCTO SHOULD BE DIRECTED TO *{Insert}* RANK/PREFIX FIRST LAST, UNIT, POSITION TITLE AT EMAIL(AT)USCG.MIL OR (XXX) XXX-XXXX.

6. INTERNET RELEASE IS *{choose}* AUTHORIZED or NOT AUTHORIZED.

7. *{Insert}* RANK FIRST INITIAL. MI. LAST NAME, OFFICE AND POSITION TITLE, SENDS.

BT

NNNN