



DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
47123 BUSE ROAD, UNIT # _____
PATUXENT RIVER, MD 20670-1547

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MEMORANDUM

From: Assistant Commander for Research and Engineering, Naval Air Systems Command,
22347 Cedar Point Road, Unit 6, Patuxent River, MD 20670-1161

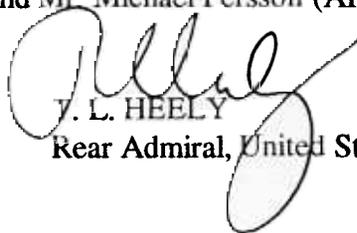
TEAM WIDE IMPLEMENTATION OF NEW SYSTEMS ENGINEERING
STAFFING REQUIREMENTS FOR CLASS I ENGINEERING CHANGE
PROPOSALS

(a) NAVAIRINST 4130.1

(b) NAVAIRSYSCOM Memo Ser AIR-1.1A/AMBPR of 25 Sep 01

- (1) Procedures for implementing a revised Systems Engineering Staffing Process for Class I Engineering Change Proposals
- (2) Flight Clearance/ECP Chop List

1. This memorandum revises the configuration control requirements of reference (a) by authorizing the implementation of a revised Systems Engineering (AIR-4.1) staffing process designed to improve the coordination of technical reviews of Class I Engineering Change Proposals (ECPs) prior to Configuration Control Board (CCB) approval. Enclosure (1) provides the implementing instructions for the revised AIR-4.1 staffing process.
2. This process standardizes the staffing requirements for Class I ECP and Flight Clearance (FC) processes. The revised "Two-Part" ECP process, implemented via reference (b), will eliminate redundant staffing activities and shorten the current ECP/FC process approval time. Enclosure (2) provides a list of generic performance monitors that should be included as required for each technical review. This will allow modifications to be incorporated cheaper and faster.
3. This process will be incorporated in the next update of the reference (a). The points of contacts are Mr. John B. Jones (AIR-1.1.3) and Mr. Michael Persson (AIR-4.1), respectively.



J. L. HEELY

Rear Admiral, United States Navy

Subj: TEAM WIDE IMPLEMENTATION OF NEW SYSTEMS ENGINEERING STAFFING REQUIREMENTS FOR CLASS I ENGINEERING CHANGE PROPSOSALS

Distribution:

PMA202, PMA203, PMA205, PMA207, PMA209, PMA213, PMA222, PMA225, PMA226, PMA248, PMA251, PMA260, PMA/PMW187, PMA201, PMA231, PMA233, PMA234, PMA241, PMA242, PMA259, PMA265, PMA268, PMA272, PMA257, PMA261, PMA264, PMA271, PMA273, PMA275, PMA276, PMA290, PMA299, PMA208, PMA258, PMA263, PMA280, PMA281, PMA282, PMA SFAE-UAV, AIR-2.0, AIR-1.0BFM, AIR-1.1.5, AIR-3.1.8, AIR-7.6, AIR-7.6.1, PEO(A), PEO(A)-ACQ, PEO (T)-ACQ, PEO (W)-ACQ, AIR-4.0, AIR-4.0P, AIR-4.1, AIR-4.2, AIR-4.3, AIR-4.4, AIR-4.5, AIR-4.6, AIR-4.7, AIR-4.8, AIR-4.9, AIR-4.10, AIR-4.11

Procedures for Implementing a Revised Systems Engineering Staffing Process for Class I Engineering Change Proposals

A new and shorter "Two-Step" Engineering Change Proposal (ECP) approval process has been developed under the Acquisition Management Business Process Reengineering (CP1-1) Initiative. One of the objectives of CP1-1 was to reduce the average ECP/modification cycle-time from initial funding to the last modification installation. The new Two-Step ECP approval process has been designed to do just that without sacrificing Configuration Management (CM) process integrity and discipline.

The Two-Step ECP Process (Attachment (I)) differs significantly from the existing ECP process. The existing process requires Government approval of a Class I ECP prior to obligating APN funding for nonrecurring (NR) efforts. The new process allows for the expenditure of APN funding for NR engineering to develop the change. Once the design change has been finalized, the appropriate Configuration Control Board (CCB) approves the formal configuration change.

Step I - Obligating APN-5 Funding for NR services and deliverables.

1. The Program Manager (PMA)/Integrated Program Team (IPT) must first request an advance ECP number from the ECP originator. It does not matter if the ECP originator is a defense contractor or Government organization. The advanced assignment of the ECP number will ensure that all contractual activities associated with the early NR related efforts remain linked together for proper management oversight at the Naval Air Systems Command (NAVAIRSYSCOM)/Department of Defense (DOD) acquisition and comptroller levels.

2. The PMA/IPT, in partnering with the contractor, must first develop a NR Statement Of Work (SOW) which meets the post MS III APN-5 criteria specified by DOD Financial Management Regulation (FMR) Volume 2A. The ideal scenario is for the Government and contractor to start preparing the NR SOW prior to the receipt of APN funding. The final NR SOW shall be limited to the following services and/or deliverables:

- Kit prototype (post MS III) manufacture/procurement installation
- Installation equipment prototype manufacture/procurement
- Testing of kit prototype and associated equipment
- Technical support associated with the prototype kit and installation equipment
- Formal Class I ECP and preliminary technical directive that describe the final modification and
- Installation including logistics support

Enclosure (1)

Although funding documents for the NR SOW tasking may be issued prior to the receipt of the formal ECP, PMA's must still comply with the DOD FMR Volume 2A guidance, which defines efforts properly financed from procurement (e.g., APN) appropriations. In other words, engineering efforts to determine what a modification will ultimately be or to determine how to satisfy a deficiency are not considered proper APN charges and therefore should be properly financed from development (i.e., research, development, test and evaluation) appropriations.

3. During the testing phase, all configuration changes shall be authorized for flight using the existing Flight Clearance Policy for Manned Air Vehicles, NAVAIR Instruction 13034.1B. Staffing of all flight clearance and ECP MAT packages shall be staffed using the AIR-4.0 Routing Sheet (enclosure 2). The appropriate program Assistant Program Manager for Systems Engineering (APMSE) shall determine engineering routing requirements for all ECP MAT packages. The APMSE shall determine the appropriate competencies that must review each ECP. The APMSE shall not perform the technical review for a proposed change on behalf of the appropriate technical competency. AIR-4.0P shall be included in the approval process for final staffing actions by AIR-4.0 for all ECPs, thus providing airworthiness certification coincident with the configuration change. This route sheet, with approving signatures, shall be attached to the MAT package prior to submittal to the CCB.

4. A draft NAVAIRSYSCOM CCB directive shall be prepared and must include NAVAIR Forms 4130/1, 4130/2, 4130/3 and 4130/4. The 4 page CCB directive will serve as the acquisition requirements and authorization document for the contracts (AIR-2.0) and comptroller (AIR-7.6) departments. The NR services and/or deliverables identified and funded by the CCB directive must be limited to those identified in paragraph 2 above and be consistent with the final NR SOW. Once the CCB directive has been staffed and approved by the PMA/IPT (including AIR-7.6) it shall be transmitted to AIR-1.1.5 for a final technical assessment and assignment of a NAVAIR CCB tracking number. AIR-1.1.5 will also be signing the MAT approval when the PMA in question does not have a decentralized CCB. These procedures have been carefully designed to ensure that they do not violate existing DOD financial regulations and that all NR activities and/or deliverables are properly identified, priced and funded.

Step II - Staffing, approval and implementation of the formal Class I ECP

NOTE

This step is applicable to both the traditional ECP process as well as the two step ECP process.

Once the design has been finalized and the formal ECP has been prepared and submitted to the Government PMA/IPT as a NR product deliverable under Part I, the existing NAVAIRSYSCOM ECP/CCB staffing/approval procedures outlined in NAVAIR Instruction 4130.1C shall be followed. The AIR-4.0 Routing Sheet (enclosure (2)) shall be used for

engineering staffing. It is anticipated that the improved quality of the formal ECP developed jointly by the contractor and Government under Part-I of this process, will significantly shorten the current ECP staffing, approval and implementation time by approximately 3 to 12 months. If the formal TD technical publication, or Naval Air Training and Operating Procedures Standardization change are not an immediate product of the CCB approval, a flight clearance shall be processed coincident with the ECP MAT package. **Issuance of this flight clearance does not authorize the modification of an aircraft. Per OPNAV Instruction 4790.2 series, the Type Commander may only modify one aircraft without a NAVAIRSYSCOM approved ECP or TD.**

Developmental Test (DT) and Operational Test (OT) Configuration Management Processes

DEVELOPMENTAL TEST (DT)

The Commander, NAVAIRSYSCOM Aircraft Controlling Custodian (ACC) controls temporary, prototypical configuration change processes for research, development, test and evaluation (RDT&E) undergoing DT in accordance with the Type Commander's Prototype Mod Authority defined in OPNAV Instruction 4790.2 series. Due to the scope of the NAVAIRSYSCOM RDT&E modification effort, the ACC (AIR-5.0D) has delegated the authority for flight test prototype configuration control to the Test Wing Commanders. Each Test Wing Commander maintains control of test aircraft configuration using locally managed processes.

The Naval Air Warfare Center Aircraft Division uses a CM process that is governed by NAWCAD Instruction 13050.1A. It is a de-centralized process that delegates authority to modify aircraft to the Test Squadron Commanding Officer under his authority as Aircraft Reporting Custodian.

Naval Air Warfare Center Weapons Division uses a CM process that is governed by NAWCWPNs Instruction 13034.1. It is a centralized process, governed by the Aircraft Configuration Control Board (ACCB) that requires ACCB chairperson approval to modify aircraft.

Both processes:

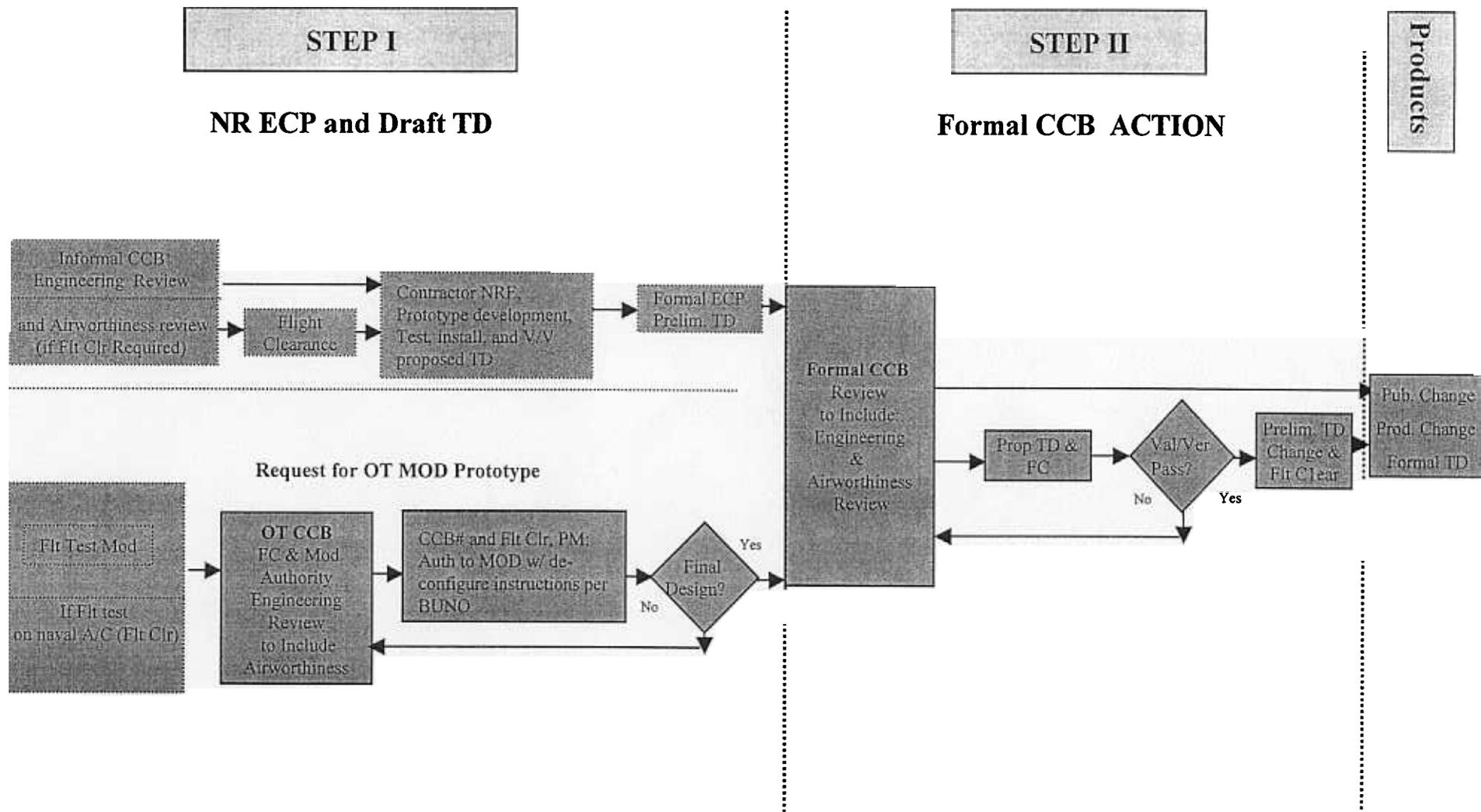
- Ensure that test-related prototype configuration changes on test aircraft are properly reviewed and authorized and are in concert with the plans/priorities for test aircraft utilization
- Control test aircraft re-configuration, modifications, and project work
- Document and archive test aircraft configuration
- Serve as a checklist for, and a record of, configuration change process compliance
- Are under review in pursuit of establishing a single NAVAIRSYSCOM RDT&E Modification CM Process under the auspices of the TYCOM's Prototype Modification Authority

The processes do not provide authority to proceed with testing (ground or flight), nor does it serve as a flight clearance document.

OPERATIONAL TEST (OT)

Commander, NAVAIRSYSCOM (AIR-1.0) manages the process to control configuration changes to all Navy and Marine Corps aircraft, including all fleet aircraft undergoing OT. In most cases, the normal ECP process will be utilized to support configuration changes needed for OT. In those cases requiring modification of multiple fleet aircraft for OT purposes in advance of ECP approval and/or TD distribution, the NAVAIRSYSCOM Configuration Control Board (CCB) will be utilized to approve configuration changes to OT aircraft, because it is beyond Type Commander authority to modify more than one aircraft without a NAVAIRSYSCOM approved ECP/TD. Authorization to use the OT/CCB process is provided by AIR-1.1.3. Once authorization is received to use the OTCCB process, the abbreviated "hand carry" CCB process will be used to route the CM package through the logistics and engineering competencies to provide rapid authorization for modifications to multiple fleet aircraft for OT purposes.

TWO STEP ECP PROCESS



Flight Clearance / ECP Chop List

Request ID

DTG

Date Received

Aircraft

TYCOM

Due Date

Specific T/M/S

Expiration Date

Subject

Facilitator

Airworthiness Officer

Required Engineering

	<i>Init.</i>	<i>Date</i>		<i>Init.</i>	<i>Date</i>		<i>Init.</i>	<i>Date</i>
<input type="checkbox"/> <i>System Safety</i>			<input type="checkbox"/> <i>Loads & Dynamics</i>			<input type="checkbox"/> <i>Engine Comp</i>		
<input type="checkbox"/> <i>Software Engrg</i>			<input type="checkbox"/> <i>Fatigue</i>			<input type="checkbox"/> <i>Avionics Sys Engrg</i>		
<input type="checkbox"/> <i>WSI</i>			<input type="checkbox"/> <i>Materials</i>			<input type="checkbox"/> <i>Avionics Sys Int</i>		
<input type="checkbox"/> <i>Wt and Bal</i>			<input type="checkbox"/> <i>Thermal</i>			<input type="checkbox"/> <i>Flt Info Sys</i>		
<input type="checkbox"/> <i>Rel and Maint</i>			<input type="checkbox"/> <i>Hydraulics Lnd</i>			<input type="checkbox"/> <i>EW Systems</i>		
<input type="checkbox"/> <i>EMI/HERO</i>			<input type="checkbox"/> <i>Fuel Containment</i>			<input type="checkbox"/> <i>RF Sensors</i>		
<input type="checkbox"/> <i>Surv/Vuln</i>			<input type="checkbox"/> <i>Mechanical Sys</i>			<input type="checkbox"/> <i>EO Sensors</i>		
<input type="checkbox"/> <i>Performance</i>			<input type="checkbox"/> <i>Propulsion Sys</i>			<input type="checkbox"/> <i>Crew Systems</i>		
<input type="checkbox"/> <i>Flying Qualities</i>			<input type="checkbox"/> <i>Fuel Systems</i>			<input type="checkbox"/> <i>Egress & Decel</i>		
<input type="checkbox"/> <i>Store Sep</i>			<input type="checkbox"/> <i>Engine Dev</i>			<input type="checkbox"/> <i>Human Sys</i>		
<input type="checkbox"/> <i>Flt Controls</i>			<input type="checkbox"/> <i>Electrical Power</i>			<input type="checkbox"/> <i>Store Int</i>		
<input type="checkbox"/> <i>Strength: TAC</i>			<input type="checkbox"/> <i>Fuels & Lube</i>			<input type="checkbox"/> <i>Safe Escape</i>		
<input type="checkbox"/> <i>Strength: R/P/S</i>			<input type="checkbox"/> <i>APU & Drive Sys</i>			<input type="checkbox"/> <i>Instrumentation</i>		
<input type="checkbox"/> <i>Class Desk</i>								
<input type="checkbox"/> <i>NAVAIR 4.0P</i>								

Enclosure (2)