PAMBANSANG PUNONGHIMPILAN TANOD BAYBAYIN NG PILIPINAS
(National Headquarters Philippine Coast Guard)
139 25th Street, Port Area
1018 Manila

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NHQ-PCG/ CG-10

STANDING OPERATING PROCEDURE

NUMBER 03-22

AIRCRAFT MATERIAL SUPPLY AND SPARE PARTS MANAGEMENT SYSTEM

I. GENERAL:

Material control and management system involves requisition/procurement, storage, distribution, consumption/usage, accounting, and disposal. Material control may be defined as regulation of the functions of an organization relating to storage, procurement, and usage of materials in such a way as to maintain an even flow of production related to the conduct of inspection, maintenance, and repair of every aircraft to lessen time when aircraft is on ground or in "not operational" status.

II. OBJECTIVE:

a) Ensure the continuous availability of all types of materials
b) Prevent loss during the storage.
c) Procurement of material of right quality and quantity to avoid quality issues.
d) Procurement of right quantity to avoid overstocking of material/spares which may cause deterioration of quality of material as some types of material are classified to be "Time Based Objects" or may expire after a certain period.
e) Maximize the cost effectiveness and economic benefit of bulk procurement that may cause favorable terms and conditions which may reduce the price without affecting quality.

III. PURPOSE:

This SOP prescribes the rules and regulations governing the management of the aircraft material supplies and spare parts for maintaining the airworthiness of different PCG Aircrafts. This involves the mandatory storage management of maintenance spare parts of all the aircraft to keep them readily available in the storage room. This will also define the responsibilities of PCG personnel involve in the procurement, recordkeeping/inventory, and distribution of maintenance parts of air assets.

IV. SCOPE:

This SOP applies to all PCG Officers and Non-Officers involved in the maintenance, inspections, and repairs of the different PCG air assets.

V. DEFINITION OF TERMS:

Aircraft – any contrivance now known or hereafter invented, used or designed for navigation or for flight in the air.

Aircraft Avionics – a term designating any electronic device, including its electrical part for use in an aircraft, including radio, automatic flight control and instrument system.

Aircraft Engine – An engine used or intended to be used for propulsion of aircraft and includes all parts, appurtenances and accessories thereof, other than propellers

Airframe – Any and all kinds of fuselages, booms, nacelles, cowlings, fairings, empennages, airfoils, surfaces and landing gear, and all parts, accessories, or controls, of whatever description, appertaining thereto but not including powerplants and propellers.

Airworthiness – the ability of an aircraft or other airborne equipment or system to operate without significant hazard to aircrew, ground crew, passengers (where relevant) over which such airborne system are flown.

Aircraft Readily Available Spares (ARAS) – mandatory spares that are readily available for replacement for easily deranged parts.

Avionics/Aircraft Maintenance Group (AAMG) – Support operating unit of Coast Guard Aviation Force primary in charge with the maintenance of PCG assets

Component Assembly – A combination of internal parts, such as engine, control box, or fuel pump, which constitute a complete assembly.

Corrosion – The gradual destruction of materials (usually metals) by chemical reaction with its environment.

Derangement – Something that disturbs the operation of function of a specific component

Equipment – The set of articles or physical resources serving to equip a person or thing
Inspection – Most generally an organize examination or formal evaluation exercise. The results are usually compared to specified requirements and standards for determining whether the item or activity is in line with these targets. Inspection is usually non-destructive.

Inspection and Survey (INSURV) – This inspection identifies all repairs/alterations to avionics and electricals that must be conducted in accordance with the aircraft repair manual, service bulleting and aircraft directives.

Request for Quotation (RFQ) – this is the canvass of parts to different suppliers to establish budget that will be included in the programming of parts to be requested

Spares and Repair Parts – Spares are components of assemblies used for maintenance replacement purposes in major end items of equipment. Repair parts are those piece parts, such as individual parts or non-repairable assemblies, required for the repair of spares or major end items

Spare – an interchangeable part that is kept in an inventory and used for the repair or replacement of failed units

Tool – any physical item that can be used to achieve a goal. Especially if the item is not consumed in the process.

Scheduled Maintenance Inspection (SMI) – Covers more than just inspections, programs are established to track the life cycle identifying and correcting failure trends of parts before they pose a hazard to the equipment or personnel. Each type of aircraft in the PCG Inventory is following scheduled inspections upon reaching the required flying hours.

CESSNA CARAVAN 208EX

Every 100 Flying Hour

BRITTEN NORMAN ISLANDER

50 hours total flying time
100 hours total flying time
500 hours total flying time
1000 hours total flying time
2000 hours engine operating time
2000 hours propeller operating time

AIRBUS H-145 HELOCOPTER

Annual Inspection
12 months Inspection
24 months Inspection
36 months Inspection and so on
25 hours total flying time
(Visual Inspection)
400 hours total flying time
(Intermediate Inspection)
800 hours total flying time
(Periodic Inspection)

VI. POLICIES:

a) At all times, all aircraft should maintain a mandatory spare needed to replace easily deranged parts and equipment. Logistic Officers of each Division shall see to it that aircrafts have the minimum supply intended for the mandatory inspection schedules. Likewise, all performing Aircraft Machinist (AD) or Crew should thoroughly inspect supply and spare parts mandatory on board to ensure readiness when needed.

b) It is the responsibility of all maintenance personnel to comply with all guidance to ensure required repairs, inspections and documentation are completely compliant, safe, timely and effective manner.

c) Logistics Officer of respective Divisions (Fixed Wing/Rotary Wing) shall maintain the spare and repairs parts of the next scheduled SMI and initiate request to higher Headquarters via the AF-10 for the acquisition of the same to replenish expended parts and maintain the availability for the next SMI.

d) The office of the Aviation Staff for the Avionics and Maintenance shall be responsible for the programming of spare parts for each aircraft. It shall create an information system interface that contains inventory of supplies and materials for aircraft maintenance.

e) Only the Officer-In-Charge Aviation for Logistics and staff with the presence of Avionics and Maintenance staff shall be authorized to recieve the delivery of the materials ,spare and repaire parts.Only the personnel in charge from the Office of the Aviation staff for Avionics and Maintenance shall be responsible for the stocking in the designated supply room in charge of the AAMG.

f) After repair/inspection, concern chief crew shall ensure that all waste materials used during the conduct of SMI/repairs are collected for proper turn-into Disposal Division, AAMG and accomplish / submit necessary Waste Material Report for records keeping. Said part to be inspected by Quality Assurance Inspector to determine its serviceability whether Serviceable, Repairable, Beyond Economical Repair (BER) and/or Condemn equipment or material. All equipment/material declared as condemned shall be recorded with clear image informing the Commander, AAMG or authorized personnel from AAMG and/or supply rooms for proper recording and disposal.

g) Spare Parts identified to be repairable shall be properly stored and kept for future programming of its repair.

h) All transactions shall be logged into a designated logbook inside supply room, prepared by Member AAMG and noted by Commander, AAMG to ensure proper accounting of accepted and release of materials, spares, and repair parts.

VII. PROCEDURES:

a) Programming of Parts for each aircraft

i. Before end of each calendar year up to the first (1st) quarter of the succeeding year, concern staff (AF-4/AF-10) identifies the tail number of PCG aircraft for repair based on a Multi-Year Maintenance and Repair Cycle of the Coast Guard Aviation Force. Said cycle is based on the conditional status of each aircraft considering the age since acquisition, total flying hour, and repair/maintenance program undertaken of the preceding year vis-à-vis DSRT set for the operational requirements of the Philippine Coast Guard. Otherwise, all other aircraft not due for repair will be allocated with funds for SMI spares and carry Aircraft Readily Available Spares (ARAS) based on the projected flying/operating hours set for the year.'

ii. Upon identification, a careful inspection – Pre-overhaul Test and Inspection (POT&I) for airframe and machinery, and Inspection & Survey (INSURV) for avionics and electrical equipment is to be conducted in accordance with the aircraft repair manual, service bulletins and aircraft directives.

iii. In coordination with AAMG, spare parts (SMI and ARAS) and repairs to be undertaken will be consolidated for market research and Request for Quotation (RFQ) to establish budget.

iv. Concern Staff the conducts cost benefit analysis on the mode of procurement applicable to procure spares and services for the repair.

v. Upon careful study and once budget is established, it shall be included in the PPMP and prepared for submission and approval for higher headquarters.

b) Requisition of Spares for deranged Aircraft

i. Upon receipt of the information that a part of the aircraft has incurred derangement, the Pilot-In-Command (PIC), or the Division Commander (Rotary Wing/Fixed Wing) via the Division Maintenance Officer, to which the aircraft is under control shall submit a derangement report stating the cause and status of the damaged part after initial conduct of inspection and troubleshooting.

ii. Maintenance crew then continues to conduct repair and troubleshooting of the noted discrepancy. The squadron maintenance officer, who is also under the administrative control of AAMG, will check the availability of spare part from Material and Tools Control Branch of AAMG and shall accomplish "Spare Parts Withdrawal Form" if available to be submitted to said division for filing and documentation. Said form shall be duly signed by concerned Crew Chief and Repair OIC/Pilot-In-Command to withdraw needed spare parts and as approved by the OIC, shall be released by the personnel-in-charge. The Crew that was tasked to withdraw said item shall likewise sign in the portion "Received by".

iii. If the needed spare/item is available, aircrew installs it back to the aircraft upon withdrawal while the deranged item/waste materials will be sent back to the AAMG's Disposal Division with accomplished "Waste Material Report/Turn-in Form" for proper disposition. However, if not, a "Procurement/Repair Request Form" shall be accomplished indicating the spare/item needed and work requested to be done to be signed by concerned Division Commander. Said request form shall be submitted to: Aviation Staff for Maintenance and Repair (AF-10) for airframe and machineries related repairs/items; Aviation Staff for WCEIT (AF-11) for repairs/items concerning avionics; or Aviation Staff for Logistics (AF-4) for POL products for appropriate action.

iv. In some instances where immediate repair is necessary and repair/procurement of needed part is not readily available, it will be resorted to a substitute/alternate/swapping as a last option subject to the approval of C, CGAF to prevent unnecessary downtime to the aircraft. In this case, concerned crew shall accomplish "Substitute Spare Part Request Form" in three (3) copies *(CC: AAMG, Source AC, Recipient AC)* to ensure proper documentation and accounting of the part needed. They shall indicate the reason justifying the rationale of the said substitution and shall be included and logged to each of the aircraft's logbook.

v. Upon receipt of the procurement request, concerned staff (AF-10/AF-11) shall canvass from several qualified Supplier and procures needed repair/item/product. Said staff shall assess the request whether it shall be programmed under the normal budget cycle or be procured immediately under emergency funds. If identified to be of immediate concern, concerned staff shall also inform concern unit to conduct pre-repair inspection while procurement documents are being prepared.

vi. The supplier, after being identified to be the most eligible in terms of quality, cost, and delivery schedule for the request, shall deliver the item/repair services in the designated delivery site. CGAF QC is the tasked to inspect and check the item/s delivered using pass/fail criterion and accomplish the "Delivery Inspection/Receipt Form". They shall also take pictures of the items delivered and received all pertinent documents related to the procurement delivery and attach said form. They shall secure it until receipt of the Material and Tools

Control Branch of AAMG and keep it for filing and documentation. However, if items delivered fail the inspection, it shall be given back to the Supplier and will not be accepted until desired conditions are met.

vii. Upon careful inspection of the item by CGAF QC, CG SAO receives and records the item while COA conducts post repair/delivery inspection as mandated by the PCG Procurement Process.

viii. Concerned staff (AF-10/AF-11) with Supply POIC the withdraws the item from CG SAO and be brought to the Material and Tools Control Branch of AAMG for proper receiving and issuance to deranged aircraft.

c) Receiving and stocking of spares

i. Upon receipt of the item/spare parts from the Supplier through concern staff (AF-10/AF-11), concerned storekeeper (Fixed Wing or Rotary Wing) of Material and Tools Control Branch of AAMG then log and record pertinent information such as Supplier's name, warranty period and terms and conditions for the said procurement.

ii. Properly protect, rack and stack parts into proper classification and identification for issuance and transport to the next operation/installation. For parts or material that will be installed in the next few operations, issue parts in applicable handling fixture.

iii. Do not use transportation handling fixtures to store parts, including temporary storage unless written approval to do so was obtained from the manufacturer.

iv. Issue parts based on oldest parts first. Provided that, they are effective and not obsolete nor being withheld because of discrepancies.

v. For parts and materials where age control is not applicable, issuance of first in first out should be practiced but is not mandatory.

vi. For shelf-life parts or age sensitive material being issued to the production shops, issuance based on oldest first is done without exception.

vii. For shelf-life parts or age sensitive material being issued as spares or to be transported to deployed PCG Aircraft in Coast Guard Air Stations/Sub-Station, item/spare is to have sufficient shelf life remaining when received to comply with the needs and expectations of the recipient.

viii. For that portion of a specific repair/inspection behind schedule, issue parts on an as needed basis, or up to a specific amount set by that repair/inspection crew. This reduces handling damage to parts if it was properly logged and noted by the Material and Tools Control Branch of AAMG.

ix. Material and Tools Control Branch of AAMG has the authority to allow the stocking of parts to exceed the allowable requirements, based on size, weight, space availability, etc., if it provides appropriate protection.

x. Mixing of items/spares/material is not acceptable. Racking, shelves, bins, etc. are to be identified in a manner that is easily recognized and visible. Stocking of raw material with similar dimensional characteristics, but different material characteristics are to be stocked in a manner that mixing of material is

prevented. Vigilant stocking procedures require the verification of the type of part number and correct storage location.

xi. **Tagging System –** High Value aviation parts and material are tagged with a color-coded tag and stored by location as specified by the Material Control Management. As they are transferred to a new location or moved through assemblies, inventories are updated using a manual logbook to be reconciled with software database to be created that automatically identifies low balance and present number of spares being maintained in the stock room. Color Coded Tagging includes:

GREEN TAG (SERVICEABLE) – are factory new spare parts and newly repaired parts ready for issuance and installation

YELLOW TAG (REPAIRABLE) – Items/spares removed from aircraft that can be repaired/overhauled for future installation

RED TAG (CONDEMN) – Beyond economical repair/unserviceable spare parts for disposal

d) Withdrawal of spares needed for Aircraft repair

i. Upon availability of spare parts needed for the repair/inspection of the deranged aircraft/aircraft on inspection, concern Dock Chief/Crew Chief fills up "Spare Parts Withdrawal Form" to be noted by the Squadron Commander/Pilot-In-Command and submitted to Material Control Division AAMG as a requirement for the requisition of needed spare parts for the ongoing repair/inspection.

ii. For proper accountability, storekeeper then files the approved Spare Parts Withdrawal Form and properly log for easy reference.

e) Waste Material during the conduct of SMI/repair

i. After the repair/inspection, concern dock chief/crew chief shall ensure that all waste material used during the conduct of SM/repairs are collected for proper turn-over to Disposal Division, AAMG and accomplish/submit necessary Waste Material Report for record keeping.

ii. Said parts are to be inspected by concern Quality Assurance Inspector (QAI) to determine its serviceability (repairable/BER).

iii. If waste materials are found to be BER to include scraps used during the repair/inspection, said items/spares shall be secured by the Disposal Division, AAMG. In coordination with the supply office, waste materials are to be turned over for proper disposition and future accounting by competent authorities. Otherwise, spare parts identified to be repairable shall be stored and kept for future programming of its repair.

f) Records keeping and Documentation

i. Storekeeper shall maintain a comprehensive, complete and well-organized documentation of all spare parts in its inventory. Said documentation shall include a logbook that indicates the date receipt of the spare parts or the date

when delivered in the storeroom, the supplier who delivers, the QAI whoi inspects the part and warranty period.

ii. On a separate logbook, storekeeper shall log all items withdrawn/requested for issuance for installation to the aircraft. He/she shall also indicate the information relative to the spare parts withdrawn to include the Supplier and warranty coverage for easy reference during unexpected breakdown of parts for replacement.

iii. Withdrawal forms shall also be kept together by the storekeeper in Material Control Division while Waste Material reports to be kept in the Disposal Division for future reference during post repair inspection to be conducted by competent authorities.

g) Handling and storage of spares and equipment

i. The storehouses/rooms must secure a full protection of stored spare parts against direct weather influences (i.e., storehouses must have a waterproof roof and must be closed to protect spare parts against dust, wind,draught, direct sunshine, etc.). Other influences, which may increase the corrosion, such as exhalations, increased salinity etc., must be also exclueded during storage. The ambient air temperature inside the storehouse may range for 0 °c to +40 °c at the average relative air humidity up to 70%.

ii. The storekeeper shall used appropriate hand gloves in properly storing material supply, spare parts and other equipment procured especially that us highly sensitive.

h) Preservation of Spare parts

i) Metal parts

For the outside preservation of metal spare parts without surface treatment the protective agent is used (Corrosion Control Oil-Aviation Standards). After applying the protective agent, the spare part is to be wrapped in the preservative paper. The protection period of 5 years applies to a part wrapped in this way. The preservation protects the product during all the guarantee periods.
Should the organization need spare parts to be protected for a longer period, manufacturer can supply said spare parts being wrapped in PE bags, which are sealed. The protection period for the spare part being wrapped in this way is 10 years. Inspect wheter the cover has not suffered damage every two years. The preservation protects the product during all the guarantee periods.

ii. Plastic and rubber parts

For the preservation of plastic and rubber parts the protective agent (talcum powder) is used. The protection period is 3 years. Storage period of some plastic and rubber parts is prescribed directly by the manufacturer according to the used material, manufacturing technology, etc.

iii. Engine and machineries

Short-term conservation of engines designated as spare part is for the storage time of max. 6 months. After 6 months for further storage, it is

necessary the conservation restore. It is necessary to do the following steps:

a. Fill up the engine with the specified amount of engine oil.

b. Remove the servo pump and to cover the hole in the front cover of the engine or to connect the servo pump on the engine by means of hoses with small tank filled with hydraulic oil.

c. Start the engine (if starting on the "brake" of engines is not possible, then starts the engine on a suitable stand in the open air due to escape of exhaust fumes); leave running for max. 5 minutes at the range from 600 to 1200 revs/min. In the case of solid control of injection pump freely move with lever of control of injection pump.

By the above steps, the conservation will be extended for the maximum of another 6 months.

VII. RESPONSIBILITIES:

a. Crew (Rotary/Fiexed-Wing Division)

i. Responsible for the maintainance, repair, and inspection of Aircraft.
ii. Properly inspect equipment and prepare the list of spares to be requested for replacement.
iii. Ensure that mandatory spares are onboard aircraft.

b. Member, Maintainance and Avionics Wing (Rotary/ Fixed-wing Division)

i. Monitor and keep the technical order time compliance status for all aircraft spare parts and equipment
ii. Maintain records of all important maintenance and avionics actitivities that takes place.
iii. Ensure the readiness and completeness of all spare parts needed for next SMI.

c. OIC, Logistics and Comptroller, Rotary-Wing Division/Fixed Wing Division, CGAF

i. Ensures proper storage of supplies and effective inventory monitoring of RWD assets.
ii. Responsible for the maintenance repair and provides logistical requirements for the rotary assets.

d. Commander, Rotary Wing Division/Fixed Wing Division

i. Exercise overall supervision on the timely and efficient schedules of maintenance inspection and repair of rotary aircraft in coordination with the Commander, AAMG.
ii. Maintain enough supply of material, spare and repair parts for the mandatory inspection of rotary aircraft. Request for spare parts replensihment uponcompletion of the preceding SMI.

e. Officer-In-Charge, Material and Tools Control Branch

i. Identify and supervises material requirement of aircraft.

ii. Responsible for the storage, accounting, and issuance of spare parts.

f. Commander, Avionics and Aircraft Maintanance Group (AAMG), CGAF

i. Exercises sound management for materials and equipment to achieve and maintain safety in ground and fight.

g. POIC, Aircraft Repair Branch, Aviation staff for Avionics and Maintenance

i. Closely supervise and accountable for the aircraft spare parts allocation and storage.
ii. In charge for the monitoring of material and spare parts through the material information system interface.

h. Office-in-Charge, Aviation Staff for Avionics and Maintenance, HCGAF

i. In charge for the proper management of repair and maintenance fund of all Coast Guard Assets to attain higher level of operational readiness.
ii. In-Charge in the programming of spare parts as required by the different aircraft for Rotary and Fixed Wing Division. Coordinate with AAMG for the preparation of the consolidated request of material and spare parts supply.
iii. Check and validate all maintenance and spare parts prior submitting to O/CG-10
iv. Manage and facilitate the acquisiting of all spare parts.

i. Commander, Coast Guard Aviation Force (CGAF)

i. Ensure proper validation and endorsement of maintenance, Spare and Repair Parts request to CPCG (Attn: CG-10)
ii. Supervision the creation of Material Information system Interface for the centralized monitoring and accounting of all spare parts at CGAF.
iii. Advise the Office of the Deputy Chief of Coast Guard Staff for Ships and Aircraft Engineering, CG-10 regarding any deranged acquired by all PCG air assets.

j. Office of the Deputy Chief of Coast Guard Staff for Ships and Aircraft Engineering, CG-10

i. Check and validate the request of HCGAF for the availabilty of maintenance, spare and repair parts.
ii. Monitor the proper implementation of this SOP.

IX **RESCISION:**

All other publications in conflict with this SOP are hereby rescinded.

X. **EFFECTIVITY:**

This Standing Operating Procedure shall take effect upon approval.

BY COMMAND OF COAST GUARD ADMIRAL ABU:

OFFICIAL:

TITO ALVIN G ANDAL
CG COMMO
Chief of Coast Guard Staff

EDILYN M CABRERA
CG LTJG
Acting Coast Guard Adjutant