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COMNAVAIRPAC/
COMNAVAIRLANTINST 5400.27C
NAVAIRPAC N72
NAVAIRLANT N81
19 MAY 1998

COMNAVAIRPAC/COMNAVAIRLANT INSTRUCTION 5400.27C

Subj: STANDARD REPAIR PARTY MANUAL FOR NAVAL AIR FORCE

1. **Purpose.** To issue the Standard Repair Party Manual for ships of the Naval Air Force, U.S. Atlantic and Pacific Fleet. Due to extensive revision, paragraph markings have been omitted. This instruction should be read in its entirety.
2. **Cancellation.** COMNAVAIRPAC 9880.2G/COMNAVAIRLANT 5400.27B
3. **Scope.** The COMNAVAIRPAC/COMNAVAIRLANT Repair Party Manual provides standardized policy and guidance for shipboard damage control parties. This manual applies to all ships in the Force. Pertinent references are listed at the beginning of each chapter. This is a complete revision and individual paragraph changes are not marked. **When tailoring the Repair Party Manual, ships are authorized to retain as much or as little of the non-directive content of the Repair Party Manual as desired, based on individual ship circumstances.** Mandatory items are specified with explicit, directive wording such as "will" or "shall." Advisory items are identified by *suggested* wording such as "may" or "can," "should" or "could." Those sections that are advisory in nature may be deleted at the Commanding Officer's and Engineer Officer's discretion.
4. **Action.** This instruction becomes effective as a ship's instruction after completion of the following:

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- a. Ship specific information is tabulated and inserted where required.
- b. Ship commanding officer shall issue this manual as a ship's instruction by letter.
- c. At least one copy of this manual will be distributed to and maintained in Damage Control Central, each Damage Control Repair Station and at Command Control Stations.
- d. No changes shall be made to provisions and intent of this manual except as noted in paragraph 4a, above, without the approval of the Type Commander. The Repair Party Manual is designed solely as a reference for the ship. It is not intended to serve as an inspection checklist.
- e. This instruction must be in place prior to the start of the first Basic Phase of the Inter-deployment Training Cycle after this instruction's date.


R.L. LEITZEL
Chief of Staff


R.L. CASEY
Chief of Staff

Distribution: (SNDL Parts 1 and 2)

21A1 CINCLANTFLT
21A2 CINCPACFLT
26J AFLOAT TRAINING GROUP AND DETACHMENT
28A CARRIER GROUPS
28B CRUISER-DESTROYER GROUPS
29B AIRCRAFT CARRIERS

Stocked:

COMNAVAIRPAC (N004)
COMNAVAIRLANT (N02A12)

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LIST OF ACRONYMS

AFFF	- Aqueous Film Forming Foam
ASFP	- At Sea Fire Party
CBR	- Chemical, Biological and Radiological
CBR-D	- Chemical, Biological and Radiological Defense
CCS	- Central Control Station
CCSW	- Central Control Station Watch
CDO	- Command Duty Officer
CMWDS	- Counter Measure Wash Down System
CRT	- Casualty Response Team
DCA	- Damage Control Assistant
DCC	- Damage Control Central
DCRS	- Damage Control Repair Station
EDO	- Engineering Duty Officer
EEBD	- Emergency Escape Breathing Device
EOOW	- Engineering Officer of the Watch
EOS	- Engineering Operating Station
ETR	- Estimated Time of Repair
FF	- Fire Fighting
FM	- Fire Marshal
GFEA	- Gas Free Engineer Assistant
GFE	- Gas Free Engineer
GFEPO	- Gas Free Engineer Petty Officer
GRP	- Glass Reinforced Plastic
IET	- Inport Emergency Team
LD	- Load Dispatcher
MOPP	- Mission Oriented Protective Posture
MSFD	- Main Space Fire Doctrine
NFTI	- Navy Firefighting Thermal Imager
OBA	- Oxygen Breathing Apparatus
OOD	- Officer Of the Deck
OSL	- On Scene Leader
PKP	- Purple - K - Powder
PPWO	- Propulsion Plant Watch Officer
RPL	- Repair Party Leader
RLO	- Repair Locker Officer
R&A	- Rescue & Assistance
RDO	- Reactor Duty Officer
SCBA	- Self Contained Breathing Apparatus
TML	- Team Leader
UL	- Unit Locker

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ORGANIZATION AND RESPONSIBILITIES

101. References

- (a) OPNAVINST 3120.32 (Series), Standard Organization and Regulations of the U.S. Navy
- (b) NWP 3-20.31, Surface Ship Survivability
- (c) NSTM Chapter 555, Shipboard Firefighting
- (d) NATOPS 00-805-14, U.S. Navy Aircraft Firefighting and Rescue Manual
- (e) CNAP/ CNAL 3500.20 (Series), Aircraft Carrier Training and Readiness Manual
- (f) NAVSEA S5090-B1-MMO-5090-B1-MMO-010, Stowage Aid Booklet for Damage Control Equipment

102. Required Chapter Annexes

- a. 1-1, Damage Control Order of Succession.
- b. 1-2, At Sea Fire Party Organization.
- c. 1-3, Damage Control Communications Plan (primary and secondary two-way).
- d. 1-4, Repair Party Organization Chart.
- e. 1-5, Repair Party Mustering Locations.
- f. 1-6, Specific Damage Control Repair Station (DCRS) Missing/OOC Items
- g. 1-7, List/Diagram of Spread Stowage
- h. 1-8, Damage Control Command and Control Organization Chart.
- h. 1-9, Inport Emergency Team Manning Chart.
- I. 1-10, Rescue and Assistance Detail Manning Chart.
- j. 1-11, Damage Control Repair Station and Unit Locker Areas of Responsibility. A sample is provided.

NOTE: REPAIR LOCKER LEADER'S NOTEBOOK IS NOT REQUIRED. ALL INFORMATION CONTAINED IN A REPAIR LOCKER LEADER TYPE NOTEBOOK MUST RESIDE WITHIN THE REPAIR PARTY MANUAL (RPM).

- a. **Authority to Sprinkle/Flood Magazines.** The Commanding Officer shall publish policy regarding authority to order the sprinkling of magazines. The policy should distinguish between fires in a magazine and fires in adjacent compartments to a magazine. The decision to flood a magazine can have serious consequences on the damage control effort and the ship's ability to continue uninterrupted combat operations. The decision to flood a magazine shall only be made by the Commanding Officer or person delegated by the Commanding Officer.
- b. **Damage Control Measures Requiring Command Approval.** The following damage control actions shall not be taken without considering the tactical situation or the consequences/impact on other ship mission capabilities. They are, therefore, command directed:
 - (1) Ballasting/de-ballasting
 - (2) Counter-flooding
 - (3) Changes to material condition of readiness (e.g. X, Y, Z).
 - (4) Establishing/changing Maximum Permissible Exposure (MPE).
 - (5) Jettisoning.
 - (6) Activation/deactivation of the countermeasure wash down system (CMWDS).
 - (7) Sending Chemical, Biological, and Radiological (CBR) monitors or decontamination teams outside the skin of the ship when in a CBR environment.
 - (8) Activation of magazine sprinkler/flooding systems.
 - (9) Transferring contaminated (CBR) aircraft from the flight deck to the hangar deck.

104. Required Damage Control Central Equipment, Materials, Publications

- a. Liquid loading diagram updated to reflect the latest tank and void soundings shall be maintained in DC Central and a copy posted at Secondary DC Central.
- b. Complete set of DC plates.
- c. Flooding Effects Diagram (if provided) or locally prepared stability data cards.

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- d. Clinometers for determining actual list and trim.
- e. AN/PDR-65 High Range Survey Meter (may be only available on Bridge).
- f. Deck plan (may be locally prepared to plot areas contaminated by CBR agents).
- g. Propulsion Plant and Vital Auxiliary Status Board to display equipment status and plot engineering casualties.
- h. Damage Control Book and Ship's Information Book.
- i. Tank sequencing chart and/or tables.
- j. Closure Log.
- k. Damage Control Tag-Out Log or listing of installed Damage Control equipment currently tagged out.
- l. Lists of preplanned routes to ready and deep shelter, combat systems equipment casualty control supply support centers, battle dressing stations, battle messing, and other battle logistics supply centers/storerooms.
- m. Charts, nomograms and other required materials to calculate various radiological factors.
- n. Repair Party Manual with a completed set of Master Chapter Annexes and a Master Set of Repair Locker Kill Cards (Hard copy or ADP Program).
- o. The following references and instructions are to be included:
 - CBR Defense Bill
 - Casualty Power Bill
 - Jettison Bill
 - Securing and Salvage Bill
 - Strip Ship Bill
 - Toxic Gas Bill
 - NWP 3-20.31 Surface Ship Survivability
 - NSTM Chapter 555, Shipboard Firefighting
 - NATOPS 00-80R-14, U.S. Navy Aircraft Firefighting and Rescue Manual
 - NSTM Chapter 079, Vol. 2, Practical Damage Control
 - Ship's Damage Control Book
 - NSTM Chapter 079, Vol. 1, Stability and Buoyancy
 - NSTM Chapter 070, Radiological Recovery of Ships after Nuclear Weapons Explosions
 - NSTM Chapter 470, Shipboard BW/CW Defense Countermeasures

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- NAVMED P-5041, dtd 05/94, Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries
- NSTM Chapter 074, Vol. 3, Gas Free Engineering
 - Modified "Z" Plan

105. **Damage Control Central Succession.** Provisions must be made for the functions of Damage Control Central to be carried out by other stations should Damage Control Central be evacuated. Most ships are built with the Damage Control Repair Station (DCRS) furthest from Damage Control Central having most of the interior communications circuits necessary to provide a secondary Damage Control Central. The succession of Damage Control Central on each ship shall be annotated in the Repair Party Manual Chapter 1, Annex 1-1 and posted at all DCRS's.

106. **Duplicate DC Materials for Command and Control**

- a. To ensure the Commanding Officer is aware of and can better visualize the damage control situation, a duplicate set of Damage Control plates showing the hull, all decks, and compartments will be provided to command and control stations (Damage Control subdivision plates 2 thru 5).
- b. The plates need not be permanently mounted or hard laminated like those in Damage Control Central. Due to space considerations, they may be cut down or modified as appropriate so long as they remain functional.
- c. A copy of the Repair Party Manual complete with Chapter Annexes shall also be provided to all command and control stations.
- d. A major conflagration will disrupt the repair organization and may require reorganization at a topside location. The Damage Control Assistant (DCA) shall make provisions to provide the topside location with a copy of the complete Repair Party Manual and damage control plates for plotting and evaluating damage. Every effort should be made by Evacuating personnel to take essential items to maintain an effective displaced Repair Locker.

107. **Damage Control Repair Station (DCRS) Inventories**

- a. DCRS inventories shall be according to the ship's Allowance Equipage Lists (AEL). A paper copy of the ship's current DCRS AEL(s) if available and a current inventory shall be maintained in each DCRS's. A Shortage/OOC List will be maintained in Chapter 1, Annex 1-6.
- b. To assist in inventories, ships are authorized to use the following:
 - (1) Damage Control - Operating Space Item Management System (DC-OSIMS) Program.

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- (2) Inventory Aid Booklet for Damage Control Equipment (NAVSEA S5090-B1-DCB-010)
- c. As much as possible, the equipment should be distributed throughout the DCRS's designated area of responsibility via spread stowage and listed or diagramed in Chapter 1, Annex 1-7.
- d. Additionally, each DCRS shall maintain a copy of the ship's Damage Control Book, laminated damage control plates and an annotated copy of the Repair Party Manual complete with the Repair Party Manual Chapter Annexes in each DCRS.

108. DC Organization

- a. DCRS's will be organized according to ref (b), chapter 2 (see ref b fig 2-3). This organization will be described in Chapter 1. Annex 1-8.
- b. Repair Party assignments shall be IAW Ref (b), Chapter 2 (see Ref (b) fig 2-4) and annotated in Chapter 1, Annex 1-4.
- c. At Sea Fire Party. The exact composition is left to individual unit Commanding Officers; however, it must functionally comply with ref (b) chapter 9. This will be promulgated in Chapter 1. Annex 1-2.

109. Inport Emergency Team (IET) Organization

- a. Inport Emergency Team (IET). The unit Commanding Officer will develop an IET which is an effective Casualty Control Team appropriate to current circumstances (including machinery space fires). IET manning will be described in Chapter 1. Annex 1-9.
- b. The ship must be able to demonstrate an effective organization to relieve or replace the IET in case of catastrophic events. (e.g., R&A, Back-up Fire Party, Fire Quarters, etc.) This organization will be promulgated in Chapter 1, Annex 1-9.

NOTE: *THE TERM CIRCUMSTANCES SHOULD INCLUDE CONSIDERATIONS FOR COLD IRON, COLD IRON WITH FLAMMABLE LIQUID SYSTEMS RUNNING, AUXILIARY STATUS AND OPERATION OF MAIN ENGINES.*

- 110. Rescue and Assistance Team (R&A)/Re-entry Locker.** The Rescue and Assistance Detail is required when a ship is underway or out-of-homeport. They shall maintain the functional capabilities listed in Ref. (b), Chapter 2. The R&A detail shall be event specific, that is, only those functions appropriate to a particular casualty will be dispatched with the

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appropriate equipment. R&A manning will be described in Chapter 1, Annex 1-10. Re-entry Locker should be established and stowed as per Ref. (b) Chapter 2.

CHAPTER ANNEX 1-1

DAMAGE CONTROL ORDER OF SUCCESSION

Secondary DC Central:

Third Alternate DC Central:

Fourth Alternate DC Central:

AT SEA FIRE PARTY ORGANIZATION

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CHAPTER ANNEX 1-3

DC COMMUNICATIONS PLAN

From To Primary Secondary Tertiary

DCRS ORGANIZATION CHART

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CHAPTER ANNEX 1-5

DCRS MUSTERING LOCATIONS

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CHAPTER ANNEX 1-6

DCRS CURRENT MISSING/OOC DC ITEMS OR DC-OSIMS REPORT

ITEM	NSN	REQ #	STATUS
Pump, Sub	7HH4320-00-368-3186	xxxxxxxxxxxx	OOC/Wiring

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CHAPTER ANNEX 1-7

LIST / DIAGRAM SPREAD STOWAGE

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DC COMMAND AND CONTROL ORGANIZATION

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CHAPTER ANNEX 1-9

INPORT EMERGENCY TEAM MANNING

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RESCUE AND ASSISTANCE DETAIL MANNING

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CHAPTER ANNEX 1-11

DAMAGE CONTROL REPAIR STATION (DCRS) AND UNIT LOCKER (DCUL)
AREAS OF RESPONSIBILITY

- NOTE 1:** *UNDER MAJOR EQUIPMENT INCLUDE THE FOLLOWING TYPE INFORMATION: MAGAZINES-TYPE OF MUNITIONS: MAJOR ELECTRICAL DISTRIBUTION COMPONENTS - EMERGENCY SWITCHBOARDS, LOAD CENTERS; VITAL AUXILIARY MACHINERY/SYSTEMS - EMERGENCY DIESELS, FIRE PUMPS, AIR COMPRESSORS, FRESH WATER PUMPS, AC PLANTS, REFRIGERATION PLANTS; STOWAGE OF CHEMICAL WARFARE PROTECTIVE CLOTHING AND DECONTAMINATION SUPPLIES (e.g., HTH); SOURCES OF ADDITIONAL SUPPLIES WHICH CAN BE USED/NEEDED IN A MAJOR CONFLAGRATION - FOUL WEATHER GEAR, BLANKETS, SHIPS STORE CLOTHING, COVERALLS, MEDICAL SUPPLIES.*
- NOTE 2:** *SPACES WHICH ARE NORMALLY LOCKED (e.g., STOREROOMS, OFFICES, STATEROOMS, etc.) AND UNMANNED DURING GENERAL QUARTERS SHOULD BE ANNOTATED TO AIDE THE RPL AND INVESTIGATORS. SHIPS MAY INCLUDE DIVISIONS RESPONSIBLE/PHONE NUMBERS TO AIDE IN OPENING LOCKED SPACES.*

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CHAPTER 2

INVESTIGATING DAMAGE

201. References

- (a) NSTM Chapter 079, Volume 2, Practical Damage Control
- (b) NWP 3-20.31, Surface Ship Survivability

202. Required Chapter Annexes

- a. 2-1, Tanks and Voids. A sample is provided. A listing of all tanks and voids in each DCRS's area of responsibility, along with their access, sounding tube and air escape (if fitted).

203. Principles of Investigation

- a. Investigate thoroughly
- b. Investigate cautiously
- c. Report damage quickly, clearly, and concisely
- d. Take appropriate initial action
- e. Continue investigation, report in at least every 15 minutes
- f. Repeat the process

These principles are based on the investigator knowing his area of responsibility.

204. Investigator Requirements

- a. Travel in pairs.
- b. Wear an OBA (or SCBA when available), anti-flash gear, helmet w/light, and long sleeves. CBR protective mask and inflatable life vest need not be worn, but must be assigned and readily available in the DCRS.
- c. Investigators shall carry only the equipment deemed necessary, based on initial response, to conduct investigation. The investigator kit is designed to respond to all types of damage investigation, and if carried in whole will slow down the investigation process. Required equipment is:

- Adjustable wrench (suitable for ATF, WTD/WTH with dogs)

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- Explosionproof flashlight
- Firefinder
- Message blanks

d. Investigators will be familiar with Chapter Annexes 2-1.

205. Investigation Procedures

a. To prevent further damage in the course of investigation, personnel shall:

- (1) Maintain positive control of watertight fittings during access, egress and inspection.
- (2) Secure compartments after inspection.
- (3) Look for hidden damage.

b. Each compartment should be inspected for:

- (1) Fire and/or smoke
- (2) Flooding
- (3) Structural damage
- (4) Electrical/cable way damage
- (5) Mechanical/equipment/vent duct damage
- (6) Personnel casualties

c. Personnel in manned spaces shall conduct investigation on station and report results to the cognizant supervisory watch station, which in turn shall report results to DC Central. Investigators will concentrate on unmanned spaces.

d. The inspection of the ship for damage must not be confined to the primary damage area. Inspect outward from the damaged area and along the projectile path, if applicable.

e. When investigating for underwater hull damage and flooding, caution must be used when opening a watertight closure to a potentially flooded space.

f. To determine if the space is flooded:

- (1) Check for condensation on adjacent bulkheads, if accessible.

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- (2) Tap on the bulkhead, a minimum of six inches from welds, with a dogging wrench or similar object listening for a distant change in the echo tone.
- (3) Carefully loosen air test fittings/sounding tubes if provided. Remember to tighten when done.

NOTE:

GREAT CAUTION MUST BE EXERCISED IN THE REMOVAL OF SOUNDING TUBE CAPS. BACK THE CAP OFF SLOWLY AND LISTEN FOR RUSHING AIR AND LOOK FOR TRICKLING WATER FROM THE THREADS; EITHER SYMPTOM MAY INDICATE THE TANK OR VOID IS OPEN TO THE SEA.

- (4) Check air escape/vents, remembering that they may be located several decks above the damaged space.
- g. When underwater hull damage is found or suspected, all tanks and voids shall be sounded and compared with the pre-damage soundings; the closest tanks and voids to the suspected damage should be sounded first, but underwater structural damage may not necessarily be confined to the adjacent area of the damage.
- h. Tell-tale indications of damage:
- (1) Smoke or toxic gases.
 - (2) Loss of electrical power or lighting.
 - (3) Loss of interior communications.
 - (4) Sudden pressure gauge change.
 - (5) Split seams, bulging bulkheads or warped decks.
 - (6) Unexplained change in list or trim.
 - (7) Unusual noise or vibration.
 - (8) Unexplained changes in tank sounds or content.
 - (9) Warm vent ducting.
 - (10) Hot machinery bearings.
 - (11) Hot electrical cables or circuits.
- i. Use of the Firefinder. Because the Firefinder is a heat indicating device, it can be used by the investigators to:

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- (1) Locate the source or seat of the fire.
- (2) Locate hot spots on bulkheads, decks, overhead and within ventilation ducting.
- (3) Locate overheating electrical cables, controllers, or component systems.