



DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
WASHINGTON, DC 20380

MCO 4555.3C  
LA-2-cfb  
19 Sep 1983

MARINE CORPS ORDER 4555.3C W/CH 1

From: Commandant of the Marine Corps  
To: Distribution List

Subj: Recovery and Utilization of Precious Metals

Ref: (a) DoD 4160.21-M, Defense Utilization and Disposal Manual  
(b) SECNAVINST 5530.5 (NOTAL)

Encl: (1) Precious Metal-Bearing Items  
(2) Precious Metal Scrap Recovery Percentages  
(3) Precious Metal Area Representatives

1. Purpose. To establish Marine Corps policy and assign responsibility for a program for the recovery of precious metals contained in excess material, residual material, and scrap generated by Marine Corps activities and for utilization of those recovered precious metals as Government-furnished material (GFM) to reduce the cost of new procurement.

2. Cancellation. MCO 4555.3B.

3. Summary of Revision. This revision contains a substantial number of changes and should be completely reviewed.

4. Background

a. The Department of Defense (DoD) Precious Metals Recovery Program (PMRP) is assigned to the Defense Logistics Agency (DLA). Under DLA, the Defense Property Disposal Service (DPDS-R), Federal Center, Battle Creek, Michigan 49016, is responsible for programs associated with the collection, recovery, and processing of precious metals which include silver, gold, platinum, and the platinum family of noble metals (palladium, iridium, rhodium, osmium, and ruthenium). The Defense Industrial Supply Center (DISC) is responsible as the commodity integrated material manager (CIMM) for supply management of the refined precious metals recovered under the PMRP. The expenditure of available resources to recover these precious metals is justified by such factors as the criticality of chemical properties of these metals as used in Defense items, the limited worldwide quantity of these metals, the relative ease of recovery procedures, and the current high prices of precious metals on the open market.

b. A precious metal indicator code (PMIC) has been developed and incorporated in the Defense Integrated Data System (DIDS) and Military Standard Requisitioning and Issue Procedure (MILSTRIP) Programs. DoD item managers will assign a PMIC to every item in the supply system. Retroactive coding will be accomplished on an item-by-item basis as file maintenance is required. Effective 1 November 1983, the PMIC will be a mandatory entry on all disposal related MILSTRIP documents. Liaison with the DoD item manager will be required when an item has not been assigned a PMIC in the DIDS.

5. Policy

a. Participation in the PMRP is mandatory for all Marine Corps activities.

b. Reutilization of excess precious metal-bearing items will take precedence over precious metal recovery.

c. DLA is responsible for providing silver recovery equipment to generating activities for use in photographic processing laboratories, printing plants, and microfilm and microfiche producing facilities, as well as base or station photographic laboratories and hobby shops.

d. Marine Corps funds will not be obligated or otherwise committed for major maintenance, replacement parts for existing equipment, or for the purchase of new or replacement equipment for this program. These requirements will be funded or supplied by DLA.

e. Marine Corps activities will operate and-maintain equipment provided to them for use in the PMRP and will be responsible for performing operator level preventive maintenance on recovery equipment in their possession. Preventive maintenance includes day-to-day adjustment, cleaning, replacement of fuses and other available minor repair parts, and any like action which can be performed with a minimum of technical knowledge and effort and within the limitations of reasonably available common tools and equipment, as a safeguard against excessive equipment downtime.

f. Acquisition project officers or item managers will ascertain the availability of precious metals by interrogating the item manager of precious metals stocks at DISC before initiating a new procurement action for precious metals or for precious metal-bearing material and will include a provision for the use of recovered precious metals as GFM in all such procurement requests when it is in the best interest of the Government to do so.

g. Precious metals will not be provided as GFM on new procurement contracts which are solely for foreign military sales (FMS), since these customers are not participants in the PMRP.

6. Procedures

a. Recovery

(1) Identification of precious metal-bearing scrap is a key element of the PMRP. Enclosure (1) provides information for use in the identification of precious metal-bearing items. Enclosure (2) provides data to convert the known precious metal content to troy ounces and to determine a reasonable estimate of recovery potential in troy ounces. Activities should also consult the precious metals master file to identify items or components containing recoverable amounts of precious metals. The precious metals master file may be ordered from Defense Logistics Services Center (DLSC-AP), Federal Center, Battle Creek, MI 49016.

(2) Precious metals and precious metal-bearing scrap will be segregated from nonprecious material by generic category; i.e., silver, gold, platinum, etc. Suitable controls against loss by theft will be established; and a locked storage area, with limited access for authorized personnel only, will be provided. Safeguards will be established to ensure accountability and control of precious metals between pickup and delivery points. Records will be maintained in avoirdupois pounds and ounces of current inventory, receipts, and issues of precious metals and precious metal-bearing scrap.

(3) Marine Corps activities will not discard unserviceable precious metal-bearing items, scrap, residue, or waste but will collect, segregate, and store the material securely until it can be turned in to a Defense property disposal office (DPDO) or shipped to a collection or recovery point designated by DPDS-R.

(4) Precious metal-bearing scrap and waste material will be segregated, as required in the preceding, prior to turn-in to DPDO. Include on the disposal turn-in document (DTID) any available information pertaining to precious metal content (metal type, quantity, and location within the item) of the scrap material turned in. A receipt will be obtained at the time of turn-in.

(5) Transportation, packaging, crating, and handling costs incurred in the shipment or transfer of precious metal-bearing material from a generating activity to the servicing DPDO will be borne by the generating activity.

(6) Transportation, packaging, crating, and handling costs incurred in making DPDS-R authorized shipments to a designated

collection/recovery activity (other than the servicing DPDO) or contractor facility will be charged to the appropriate DPDS-R fund citation obtained from the servicing DPDO.

(7) Generating activities using DPDS-R approved PMRP transportation fund citations for shipping precious metal-bearing material will forward two copies of all shipping documents to the Commander (Attn: DPDS-CF), Defense Property Disposal Service, Federal Center, Battle Creek, MI 49016.

(8) Documentation of shipments of precious metal-bearing material will show the net avoirdupois weight of material shipped. Shipments will be made by the most economical means available which is consistent with safe transit and delivery. All reasonable care will be taken in the packing of material for shipment so as to minimize the possibility of theft or loss through leakage or container damage. Parcel-post shipments will be registered.

(9) Recovery equipment includes but is not limited to electrolytic recovery units, chemical recovery cartridges, plastic hypocollection containers and replacement parts. When cost effective and environmentally acceptable, film burners/incinerators (for reduction of film and photographic paper to ash for shipment) will be provided by DPDS-R after evaluation of the activity's requirements.

(10) PMRP supplies, such as litmus test paper, plastic collection containers, silver recovery cartridges, fittings, control valves, and other replacement parts, may be obtained without charge by contacting the servicing precious metal area representative (DMAR) or DPDS-R. It is not necessary to use MILSTRIP formats or to identify the requested material by national stock number (NSN). Noun names will be sufficient identification.

(11) Generating activities will apprise their servicing DPDO of the need for PMRP assistance/recovery equipment to start up silver recovery operations or to enhance the effectiveness of ongoing silver recovery operations to ensure maximum recovery.

(12) In addition to the foregoing, DLA has designated PMAR's who may be contacted for technical assistance or information for resolution of PMRP problems. Enclosure (3) is a list of PMAR locations and the geographic areas for which they are responsible.

b. Utilization

(1) Activities procuring precious metals or precious metal-bearing material will screen the DoD inventory of Government-owned assets of precious metals and utilize those

assets as GFM in lieu of contractor-furnished material (CFM) in production contracts for major systems and equipment when such action is determined to be more advantageous to the Government. (This does not apply to procurement actions solely for FMS customers.) See paragraph 5g, preceding. Requisitioners will contact the item manager at DISC (Code ODBA-YC), AUTOVON 442-3045 or 442-3052, to obtain the latest unit price, verify availability, and reserve specific assets. Unit prices will include transportation and insurance.

(2) Solicitations for bids on items requiring precious metals shall include a provision advising bidders/offerors of the Government's intention to provide the precious metals required as GFM. These solicitations shall also provide that the bidders/offerors indicate the quantity and types of precious metals they will require for the contract. In the event that the bidders/offerors require varying quantities of precious metals because of design differences, the current market value of the GFM shall be added to the bids to ensure that no competitive advantage results from the provision of GFM.

(3) After ascertaining that the required precious metals are available and that GFM precious metals should be provided, a funded requisition in MILSTRIP format will be forwarded (preferably by message) to DISC (Code ODBA-YC).

(4) Requisitions will include the following as "exception data":

(a) Precise "ship to" address (specifying building and office, including ZIP code) where the precious metals are to be delivered. All appropriate "mark for" designations must be provided in the event they differ from the "ship to" addresses. The name(s) of the receiving official(s) shall be specified whenever possible.

(b) Contract number to which GFM precious metals will be applied.

(c) End item application (NSN, part number or other identification of the end item) and the quantity of precious metal which will be used per unit, if known.

(d) Specific contact point at the requisitioning activity, including the name, code, and telephone number.

7. Action

a. Procuring contracting officers shall:

(1) Ensure that each solicitation/contract specifies that the required precious metal will be supplied as GFM, when available and in the Government's best interest.

(2) Ensure that the quantity of precious metal requested by the contractor is commensurate with that required in the manufacturing process, considering the contractor's individual item design.

(3) Ensure that, when precious metals are to be furnished as GFM to a subcontractor, the contract identifies the subcontractor and location.

(4) Take appropriate action to assure that administrative contracting officers:

(a) Provide surveillance over all GFM precious metals and ensure that all residual precious metals are returned to the Government.

(b) Furnish prompt disposition instructions to contractors when residual precious metals are reported on hand by the contractor after completion of the contract.

(c) Request assistance from the administrative office having cognizance of the subcontractor's plant when precious metals are to be furnished as GFM to a subcontractor.

b. The inventory control point shall:

(1) Place command emphasis on this program, and allocate the resources (personnel and automatic data processing (ADP) support) necessary to ensure compliance with this Order.

(2) Evaluate items as to their recoverable precious metal content, and assign a PMIC to each new or existing item under their cognizance.

(3) Annotate the procurement specifications that precious metals will be supplied as GFM when in the Government's best interest.

(4) Take appropriate action to requisition precious metals from DISC.

c. Commanders of major commands shall:

(1) Appoint a PMRP coordinator-who will establish, monitor, and coordinate a formal Precious Metals Recovery Program within their activities to ensure that excess precious metal-bearing items, scrap or residue is processed for recovery in accordance with this Order. The name, code, address, and telephone number of each command PMRP coordinator will be provided to the Commandant of the Marine Corps (Code LMM-2) who will also be informed of any changes to this designation.

(2) Local programs will include all of the following as appropriate to the mission and/or assigned equipment and facilities of the activity:

(a) Publication of a PMRP instruction.

(b) Collecting all sensitized photographic and oscillograph materials (including both processed and unprocessed materials), silver bearing photographic fixing and stabilizing solutions, and silver recovered from photographic solutions for turn-in to the servicing DPDO or for shipment to a designated collection or recovery point.

(c) Ensuring that other precious metal-bearing items (such as expended or outdated silver or silver oxide batteries) or any item identified as such by a PMIC are not discarded but collected, secured, segregated, and turned in for recovery of the precious metals as described above.

(d) Limiting the storage of excess precious metal-bearing items and scrap to a maximum period of 30 days.

(e) Operating and maintaining assigned recovery equipment.

(f) Training personnel in the operation of the recovery equipment and in the handling of recovered precious metals.

(g) Establishing and maintaining records of litmus paper tests, dates of silver harvest and amount harvested (where applicable), and dates of canister changes.

(h) Providing security for the recovery equipment and the in-use canisters to preclude pilferage. Refined precious metals will be securely stored in accordance with the provisions of reference (b).

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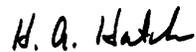
(i) Establishing and maintaining physical security and audit trail procedures for harvested silver, canisters, and other recoverable precious metals from the point of origin to the DPDO, U.S. Postal Service, or public carrier, as appropriate.

(j) Obtaining a signed receipt for all turn-ins from the post office, public carrier, or DPDO, as appropriate, and maintaining a file of those receipts for a period of 3 years.

(k) Informing the PMAR or DPDS-R of local requirements for equipment, major maintenance, spare parts, or supplies.

d. The Commandant of the Marine Corps (Code LMM-2) has been designated the Marine Corps point of contact for the Precious Metals Recovery Program. - Any questions, problems, suggestions, etc., concerning this program shall be referred to this point of contact by telephone AUTOVON 224-1600 or 225-3981.

8. Reserve Applicability. This Order is applicable to the Marine Corps Reserve.



H. A. HATCH  
Deputy Chief of Staff  
for Installations and Logistics

DISTRIBUTION: E plus 7000176 (10)  
7000156 (7)

Copy to: 8145001



DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
WASHINGTON, DC 20380-0001

MCO 4555.3C Ch 1  
LMM-2-dt  
30 Jan 1986

MARINE CORPS ORDER 4555.3C Ch 1

From: Commandant of the Marine Corps  
To: Distribution List

Subj: Recovery and Utilization of Precious Metals

Encl: (1) New page inserts to MCO 4555.3C

1. Purpose. To transmit new page inserts to the basic Order.
2. Action. Remove the present pages 1 and 2 of enclosures (1) and (2) to the basic Order, and replace them with the corresponding pages contained in the enclosure.
3. Change Notation. The paragraphs denoted by an asterisk (\*) symbol contain changes not previously published.
4. Filing Instructions. This Change transmittal will be filed immediately following the signature page of the basic Order.

A handwritten signature in cursive script, appearing to read "J. Walls".

J. WALLS  
Assistant Deputy Chief of Staff  
for Installations and Logistics

DISTRIBUTION: E plus 7000176 (10)  
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PCN 102 057605 01

PRECIOUS METAL-BEARING ITEMS

1. Precious metal-bearing items, residue, and material include but are not limited to gold, silver, platinum, and the platinum group from prosthetic appliances; gold, silver, platinum, and platinum group grindings and dust; gold or silver lined, clad, or plated decorations, badges, awards, medals, buttons, and other insignia; silver batteries; silver and gold wire; platinum and palladium wire; silver and gold turnings; spent hypo (fixer) solutions; exposed silver-bearing film/paper regardless of format or condition; unexposed outdated film/paper; dental amalgam scrap; electrical and electronic hardware containing gold, silver, platinum, or any of the platinum group metals; microfilm/microfiche masters and reproducing paper; precious metal-bearing solutions, such as silver nitrate; and disposable electrocardiograph electrodes.

2. National stock number items which contain potentially recoverable precious metals are so coded in the Management Data List (MDL) under the precious metal indicator (PMI)

3. Scrap sources are as follows:

a. Silver Bearing Materials

Anodes

Assemblies--Electrical

Silver/Copper Batteries

Silver/Cadmium Batteries

Silver/Magnesium Batteries

Blanking Scrap--Punchings

Brazing Alloys

Brushes--Electric Motors

Chemical Salts

Clad Bi-Metal Parts

Contacts

Dental Amalgam

Film

ENCLOSURE (1)

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Industrial X-Ray  
Medical X-Ray  
Lithographic  
Photographic Negatives  
Filters--Plating  
Flake--From Hypo Solution Recovery Systems  
Hooks--plating--Nodules  
Jewelry Sweeps  
Paints--Paste  
Paper--Reproduction  
Plated parts--Electrical--Electronic  
Plated Serving Pieces  
Plated Utensils  
Plated Wire  
Powders--Granulated  
Punchouts  
Relays--Electrical  
Resins  
Silver-Lined Bearings--Diesel Locomotives and Aircraft  
Sludges--Plating and Precipitates  
Solutions--Plating  
Tin Lead Alloys--Contaminated

ENCLOSURE (1)  
Ch 1 (30 Jan 1986)

Turnings

Wave Guides

Wiping Rags

b. Gold Bearing Materials

Brazing Alloys

Clad Metal Parts

Electrical Contacts

Dental Scrap

Dental Sweeps and Grindings

Diodes

Filled Scrap

Filters--Plating

Flakes

Flashings

Foil

Hook--Plating--Nodules

Jewelry Scrap

Jewelry Sweeps and Grindings

Paints and Paste

Peelings

Placer Gold

Plated Parts--Electrical

Plated Wire

Powders

Printed Circuit Boards

Printed Circuit Boards With Components

ENCLOSURE (1)

Punchouts

Resins--Plating

Salts--Chemical

Sludges--Plating

Solutions

Sponge

Tin Lead Alloys--Contaminated

Transistors

Wiping Rags

Wire

c. Platinum Bearing Materials

Catalysts

Chemicals

Clad Materials

Contacts

Dental Alloys

Dental Scrap

Dental Sweeps and Grindings

Jewelry Scraps

Jewelry Sweeps

Laboratory Ware

Magneto Points

Powders and Paste

ENCLOSURE (1)

Solutions--Plating

Spark Plugs--Aircraft

Thermocouple Wire

d. Palladium Bearing Materials

Catalysts

Clad Materials

Contact Points

Dental Alloys

Dental Scraps

Dental Sweeps

Jewelry Scrap (Sweeps)

Paste

Plated Parts

Powders

Relays--Electrical

Salts--Chemicals

Sludges

Solutions

Wire

e. Scrap Containing Combinations of Precious Metals (Gold, Silver, Platinum, and Palladium)

Electronic Scrap

High Temperature Resistant Alloys

Paints

Paste

ENCLOSURE (1)

MCO 4555.3C  
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Powders

Relays--Electrical

Resins

Ribbons

Rings

Salts

Solutions

Sweeps

Telephone Switching Scraps

Thick Film

Wire

ENCLOSURE (1)

PRECIOUS METAL SCRAP RECOVERY PERCENTAGES

	Silver Percentage (By Weight in Pounds)	Conversion Factor Pounds to Troy Ounces of Anticipated Precious Metals (See Note)
<u>Silver-Bearing-Scrap Designations</u>		
* Used anodes, drillings from anodes and grain silver, wire for welding or brazing, silver flakes and sludge from electrolytic processing of hyposolutions, and all other silver of a purity content of 90 percent or better	90	(13.13)
Silver foil battery plates separated by magnesium plates and silver chloride sheets (primarily MR 61-0 and MR 67-1 batteries)	41	(5.98)
X-ray film, exposed industrial and aerial film, millimeter film, and all types of shredded or cut-up film	1	(.15)
Battery cell sections consisting of a plastic container (approximately 1/8-inch thick); some cells containing a silver chloride solution (primarily MR 53-0, 42-0, 58-0, and 66-0 batteries)	15	(2.22)
Silver-bearing amalgam	24	(3.50)
Silver-bearing plated electrical components such as leads, capacitors, and other silver plated or bonded materials	4	(.58)
Silver sludge and silver-bearing ash	22	(3.21)
Silver-bearing missile batteries encapsulated in epoxy-type plastic with metal cases and attachments	10	(1.46)

ENCLOSURE (2)  
 Ch 1 (30 Jan 1986)

	Silver Percentage (By Weight in Pounds)	Conversion Factor Pounds to Troy Ounces of Anticipated Precious Metals (See Note)
<u>Silver-Bearing Scrap Designations (con.)</u>		
Silver recovery cartridge consisting of a spun metallic filter through which spent hyposolution has been filtered	4	(.58)
Desalter Kits	24	(3.5)
<u>Gold-Bearing Scrap Designations</u>		
Dental scrap	40	(5.8332)
Metallic (foil, leaf, wire, casting, and brazing alloy)	65	(9.4790)
Dental sweepings	15	(2.1875)
Electronic scrap (plate or washed)	.40	(.0583)
Integrated circuits/assemblies and pins (not boards or transistors) (pins are ferro magnetic)	12.	(1.7500)
Electronic circuits/assemblies and strips	6.50.	(.9479)
Electronic hardware, pins and connectors	.60	(.0875)
Rivets (gold-plated)	.50	(.0729)
Electronic chassis parts	.20	(.0292)
Eyeglass frames (gold-filled)	4	(.5833)
Buttons	.90	(.1313)
Insignia and medals	.10	(.0146)

ENCLOSURE (2)

	Silver Percentage (By Weight <u>in Pounds</u> )	Conversion Factor Pounds to Troy Ounces of Anticipated Precious Metals <u>(See Note)</u>
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Gold-Bearing Scrap Designations (con.)

Gold solutions, 8.3 lb per gal (.7 troy ounces per gal)	.60	(.0875)
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NOTE: Conversion factors shown in parentheses when used as multipliers applied to the number of avoirdupois pounds of scrap will produce a reasonably accurate estimate of the silver or gold content equated to troy ounces.

ENCLOSURE (2)

PRECIOUS METAL AREA REPRESENTATIVES

<u>Name/Address/Telephone</u>	<u>Area Covered</u>
ATTN: PMAR Building 2517/Stop No. 125 Meade Road Fort Belvoir, VA 22060 Comm: 703-664-6551 AV: 354-6551	Maryland Delaware Washington, DC Virginia (metropolitan DC area)
ATTN: PMAR DPDO Philadelphia, Bldg. 648 Philadelphia Naval Shipyard Philadelphia, PA 19112 Comm: 215-755-3735/3222 AV: 443-3736/3222	Massachusetts Maine New Jersey Rhode Island Connecticut Vermont New Hampshire Pennsylvania (eastern) New York (southeastern) Greenland Newfoundland
ATTN: PMAR Building SDA-211 South Annex Norfolk, VA 23511 Comm: 804-444-1318 AV: 564-1318	West Virginia Virginia (except metropolitan DC area) Bermuda
ATTN: PMAR DPDO Wright-Patterson Building 89, Area C Wright-Patterson AFB, OH 45433 Comm: 513-225-4291/4203 AV: 787-4291/4203	Indiana Michigan Ohio Pennsylvania (western) New York (except southeast)
ATTN: PMAR DPDO Charleston P.O. Box 5715 North Charleston, SC 29406 Comm: 803-743-3270 AV: 794-3270	Florida South Carolina North Carolina Georgia (eastern)
ATTN: PMAR DPDO McConnell Building 1349 McConnell AFB, KS 67221 Comm: 316-681-6718 AV: 743-6718	Illinois Missouri Kansas Nebraska Wisconsin Iowa Minnesota

ENCLOSURE (3)

MCO 4555.3C  
19 Sep 1983

Name/Address/Telephone

Area Covered

ATTN: PMAR  
DPDO San Antonio  
Building 3030, East Kelly  
Kelly AFB, TX 78241  
Comm: 205-925-5646/8791  
AV: 945-5646/8791

Oklahoma  
Arkansas  
Texas (except El Paso area)  
Panama

ATTN: PMAR  
3415/ABG/DPDR-OR  
Lowry AFB, CO 80230  
Comm: 303-370-2019  
AV: 926-2019

Colorado  
New Mexico  
Utah  
Wyoming  
Idaho  
Texas (El Paso area)  
Arizona (except Yuma area)

ATTN: PMAR  
Building 310-B  
Ft. Gillem  
Forrest Park, GA 30050  
Comm: 404-363-5129  
AV: 797-5129

Tennessee  
Louisiana  
Mississippi  
Kentucky  
Alabama  
Georgia (western)  
Puerto Rico  
Cuba

ATTN: PMAR  
DPDO Lewis-Puget Sound Branch  
P.O. Box 2B  
Puget Sound Navy Shipyard  
Bremerton, WA 98314  
Comm: 206-476-8618  
AV: 439-8618

Washington  
North Dakota  
South Dakota  
Montana  
Oregon  
Alaska

ATTN: PMAR  
DPDO Alameda, Building 6  
2155 Mariner Square Loop  
Alameda, CA 94501  
Comm: 415-869-3660  
AV: 686-3660

California (northern)  
Nevada (northern)

ATTN: PMAR  
Building 290, Box 78  
NAS North Island, CA 92135  
Comm: 714-437-5542  
AV: 951-5542

California (southern)  
Nevada (southern)  
Arizona (Yuma area)

Defense Property Disposal  
Region - Europe  
ATTN: DPDR-ER  
APO New York 09633  
AV: 695-1110, ask for Weisbaden, GE  
314-339-1110, ask for ext. 3833

Europe

ENCLOSURE (3)

<u>Name/Address/Telephone</u>	<u>Area Covered</u>
Defense Property Disposal Region - Pacific ATTN: DPDR-PR Camp H. M. Smith, HI 96861 AV: 462-9888, ask for Pearl Harbor 477-5238	Pacific

ENCLOSURE (3)