

DEPARTMENT OF THE NAVY
MILITARY SEA TRANSPORTATION SERVICE
WASHINGTON 25, D. C.

COMSTS 9670.2A
M-4R15
14 July 1955

COMSTS INSTRUCTION 9670.2A

From: Commander Military Sea Transportation Service
To: Distribution List

Subj: Ship Electronics Installation Record System for MSTs ships in service (USNS); instructions for maintaining

Encl: (1) Instructions for Maintaining the Ship Electronics Installation Record System for MSTs Ships in Service (USNS)

1. Purpose. This instruction promulgates instructions for maintaining the Ship Electronics Installation Record System in MSTs ships in service (USNS).
- *2. Cancellation. This instruction cancels and supersedes COMSTS INSTRUCTION 9670.2.
- *3. Background.
 - a. The Ship Electronics Installation Record System is a system for recording and reporting the current status of electronic installations in naval ships and for promulgating this information to interested activities.
 - b. The system was originally developed to apply only to commissioned ships of the Navy.
 - c. This instruction contains the necessary instructions and procedures to be followed in installing the system to all MSTs ships in service (USNS).
4. Action. All commands shall insure that the Ship Electronics Installation Record System is maintained current and accurate for all MSTs ships in service (USNS) in accordance with the instructions contained in enclosure (1).
- *5. Reports. The 4110 record form is the reporting medium used with this system. Instructions for the distribution of the record and the procedure for submitting reports to it are contained in enclosure (1).

N. K. DIETRICH
Deputy

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INSTRUCTIONS FOR MAINTAINING
THE SHIP ELECTRONICS INSTALLATION RECORD SYSTEM FOR
MSTS SHIPS IN SERVICE (USNS)

SECTION I - INTRODUCTION

1. The SHIP ELECTRONICS INSTALLATION RECORD SYSTEM is a system using form NAVSHIPS 4110 for recording and reporting the current status of electronic installations on naval ships and for promulgating this information to interested activities.
2. This system is applicable to all MSTS ships in service (USNS) having electronic equipment on board. These special instructions are promulgated as these ships are, in general, outfitted with commercial-type electronic equipment not found in regular U. S. Navy vessels.
3. Attention is invited to section IV - Procedure for reporting the electronic installations in MSTS ships in service (USNS).
4. The importance of reporting and keeping current a copy of the form NAVSHIPS 4110 for each ship is readily apparent when some of the uses of this form are known. Some of its uses are:
 - a. Makes readily available to interested commands accurate and current information concerning electronic equipment installed on units under their command.
 - b. Reduces the time required for maintaining and analyzing records, and for promulgating essential information to interested activities.
 - c. Serves as a basis for determining vacuum tube and electronic maintenance parts allowances for MSTS ships.
 - d. Serves as a planning base for improvement of ships' electronic installations.

SECTION II - GENERAL

1. Briefly, the Ship Electronics Installation Record System functions as outlined in this section.
2. Immediately after a ship is assigned to COMSTS for administrative and operational control and is designated as an MSTS ship in service (USNS), an initial report listing the electronic equipment on board shall be submitted to COMSTS in a form identical to the printed NAVSHIPS 4110 (see fig. 1). Blank forms 4110 for this purpose should not be requested as none can be furnished.
3. From the data appearing in the ship's initial report, machine-tabulating cards are prepared.
4. Utilizing the tabulating cards, printed records of electronic equipment installed on individual ships (NAVSHIPS 4110) are prepared, and distributed to interested activities as indicated in section IV.
5. Whenever a change is made in a ship's electronic equipment installation, a corrected NAVSHIPS 4110 is submitted to COMSTS and the record for that ship is corrected, reprinted, and distributed to the recipients of the previous record. Unless notified to the contrary, COMSTS will assume that this printed NAVSHIPS 4110 is accurate in all respects.
- *6. Where no change has been reported within one year from the date of the latest printed record for any ship, the record shall be verified on its anniversary date by the submission of a copy to COMSTS marked to indicate the new effective date. Thus no record will become more than one year old.

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SECTION III - INSTALLATION RECORD FORM

1. The Ship Electronics Installation Record form (NAVSHIPS 4110) is a printed and ruled form designed for use with specific tabulating machines (see fig. 1).
2. The data on the form are divided into two general classifications: (1) SHIP data and (2) EQUIPMENT data. Information concerning each of these classifications is included as follows:
 - a. SHIP DATA - The data under SHIP heading apply only to the specific ship involved and are obtained from the current Naval Vessel Register.
 - b. EQUIPMENT DATA - The principal items comprising the ship's electronic installation are listed under the EQUIPMENT heading. The listings in the first three columns are grouped in a standardized manner; first by category code, then by location code, and finally by equipment type and model. The arrangement of the groups is as follows:
 - (1) FIRST GROUPING - All items in category ONE are listed first. Then all items in category TWO, and so on, through the range of the category numerals.
 - (2) SECOND GROUPING - All items within each category group are further grouped according to the location code number. These subgroups are also arranged in numerical sequence.
 - (3) THIRD GROUPING - The items within each location code subgroup are listed first, according to type number in numerical sequence and, second, in accordance with model letters in alphabetical sequence.
3. The fourth and fifth columns under the EQUIPMENT heading list the serial number and voltage, respectively, of each item. The listings in these columns are not in numerical sequence.
4. The keys to the CATEGORY, LOCATION, and VOLTAGE code numerals are given in section VI.

SECTION IV-- PROCEDURE

1. The necessary data for punching a set of cards and for printing the initial machine-tabulated installation record, NAVSHIPS 4110, for a given ship should be obtained from inspections by qualified personnel and must contain all the data required for filling in the ultimate Ship Electronics Installation Record form, NAVSHIPS 4110. It should be typed and arranged identically to the printed form for convenience.
2. It is necessary that a machine-printed record be compiled as soon as possible for every ship. If a ship has not received a printed record (NAVSHIPS 4110) at any time in the past, a list of the electronic equipment aboard should be compiled immediately in accordance with these instructions and forwarded to COMSTS for initial processing. Requests for initial records should not be forwarded to COMSTS unless accompanied by such a list. Upon receipt of this list, COMSTS will have cards punched, and from these the initial record will be printed and copies distributed.
3. NAVSHIPS 4110 DISTRIBUTION - for MSTs ships in service (USNS).

	<u>No. of Copies</u>	<u>Activity</u>
	2	COMSTS file
*	2	Cognizant subordinate commander or contract-operator file
	2	Ship file

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- a. COMSTS COPIES - These copies are retained on file for COMSTS administrative use.
- * b. SUBORDINATE COMMAND AND CONTRACT-OPERATOR COPIES - Two copies are furnished for file and reference purposes.
- c. SHIP COPIES - Two copies are furnished the ship concerned via the cognizant subordinate commander or contract operator. In order that these records may be of use to holders they must be correct and up to date at all times. Accordingly, immediately upon receipt of these copies, the ship should check the listing against the electronic equipment on board. If the record is entirely correct and in complete agreement with the installed equipment, the ship copies should be filed. However, upon checking the record, if it is found to contain errors, omissions, or in any manner does not agree with the ship's installed equipment, both copies shall be corrected with red pencil or red ink, and one copy shall be returned immediately to COMSTS for reprinting and redistribution. The remaining corrected copy should be retained in the ship's file for information and record pending receipt of the reprinted copies from COMSTS. Fig. 2 shows the proper method for making corrections.
4. When a change in the electronic equipment installation is made, the ship's copies of the installation record shall be revised to agree with a new installation. The necessary changes shall be noted on both copies, in red pencil or red ink, and the date of revision indicated in the space provided at the top of the form. One copy shall then be forwarded to COMSTS, via the cognizant subordinate commander or contract operator, for reprinting and redistribution, and the other marked-up copy returned to the ship's file for information and record pending receipt of the reprinted copies. THIS MARKED-UP COPY SHOULD BE DESTROYED UPON RECEIPT OF THE REPRINTED COPIES. SUPERSEDED COPIES ARE NOT TO BE MARKED AND FORWARDED TO COMSTS AS CORRECTED COPIES.

SECTION V - SPECIAL INSTRUCTIONS

1. All applicable electronic equipments and separate units not included under an equipment nomenclature, either installed or on board, must be reported on the ship's installation record. Unreported items falsely indicate a shortage and will cause unwarranted procurement and expense. The ship's electronic allowance list should be used as a criterion in determining the material or equipment to be reported.
2. Corrected records shall be mailed via the cognizant subordinate commander or contract operator to COMSTS, addressed as follows:

COMMANDER MILITARY SEA TRANSPORTATION SERVICE
DEPARTMENT OF THE NAVY
WASHINGTON 25, D. C.

A forwarding letter is not necessary. Just place the marked form in a properly addressed envelope, seal, and mail.

3. DO'S AND DON'TS FOR GUIDANCE

SUBMIT REPORTS PROMPTLY WHEN REQUIRED.

Check all installation records immediately upon receipt.
Make all corrections, changes, and additions in RED pencil or RED ink.
Delete entries by drawing a red line through portion to be corrected.
Write in new items in any available space on form; machine will place in order.
Use complete model letters, including series number where applicable, and type numbers.
Report all electronic equipment on board.
List serial number of all items. If none, indicate by writing the word "NONE" in the serial number column.
List location code "900" for all portable equipment.
Date all returned installation record forms.

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via the cognizant
subordinate commander
or contract operator

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Do not retype corrected installation records.
Do not change the position of any entry to place in proper order on form;
machine will do this.
Do not omit slants and dashes from applicable model letters and type numbers.
Do not use incomplete model letters.

SECTION VI - CODES

1. EXPLANATION OF CODING. The limitations of the tabulating machines utilized in this system necessitate the use of code numerals on the printed form to represent certain data which otherwise would require lengthy numbers or a group of words. Code numerals have been assigned to represent data required in the following three columns on the installation record form:
 - a. Equipment Category *110 - RADAR ROOM*
 - b. Equipment Location
 - c. Equipment Voltage
2. EQUIPMENT CATEGORY. Use the following numerals to designate equipment category:
 - 1 - RADIO includes communication transmitters, receivers, radio navigation (Loran and radio direction finders), etc.
 - 2 - RADAR
 - 3 - SONAR - Echo depth-indicating and recording equipment
 - 4 - TEST EQUIPMENT
 - 6 - NANCY and RADIAC EQUIPMENT
 - 8 - POWER SUPPLIES including rectifiers, motor-generators, and battery chargers.
3. EQUIPMENT LOCATION. Use the following numerals to designate equipment location:

10 - RADIO ROOM	800 - ELSEWHERE
125 - RADIO MTR-GEN ROOM	820 - CAPTAIN'S CABIN
170 - ENTERTAINMENT PROGRAM CENTRAL	830 - WARDROOM
190 - ELECTRONICS REPAIR SHOP	870 - CODING ROOM (CRYPTO)
340 - PILOTHOUSE	900 - PORTABLE
380 - CHARTHOUSE	910 - SPARE

 - a. The location of the MAJOR UNIT only need be indicated for all equipments unless exceptions are noted herein. Speaker-Amplifiers, such as used on the broadcast entertainment system, which are located in uncoded spaces shall be assigned code "800."
 - b. Portable equipment, such as electronic test equipment and portable life-boat radio equipment, which may be moved about the ship, shall be assigned code "900."
 - c. Radar equipment shall be indicated by coding the location of the main frame, transmitter/receiver unit.
 - d. Radiotelephone equipment, shall show the location of the transmitter/receiver and also the remote-control unit.
4. EQUIPMENT VOLTAGE. Use the following numerals to designate equipment input voltages:

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- | | |
|---------------------------------|-----------------------------------|
| 0 - No power required | 9 - 230 volts 1-phase 60 cycles |
| 1 - 6 volts D.C. | 10 - 230 volts 3-phase 60 cycles |
| 2 - 12 volts D.C. | 11 - 440 volts 3-phase 60 cycles |
| 3 - 24 volts D.C. | 12 - 120 volts 1-phase 400 cycles |
| 4 - 27 volts D.C. | 13 - 120 volts 1-phase 800 cycles |
| 5 - 32 volts D.C. | 14 - no external power required |
| 6 - 115 volts D.C. | 15 - 440 volts 1-phase 60 cycles |
| 7 - 230 volts D.C. | 16 - 240/120 volt 3-wire D.C. |
| 8 - 115 volts 1-phase 60 cycles | 17 - 115 volts 3-phase 60 cycles |
- X - *Miscellaneous electrical power not listed above.*

- a. The importance of properly indicating the input voltage or voltages to all applicable equipments and units cannot be overemphasized. The voltage or voltages coded and listed in the appropriate column shall be those which are required to operate the equipment or unit properly. If the equipment includes a motor-generator, rectifier, or other conversion unit as an integral part of the main equipment, the input voltage of this conversion unit shall be listed as input voltage of the equipment. Example: a CRM-ET-8012 radiophone would be coded "Category 1, voltage 6 or 8."
- b. In some installations, the main motor-generator has been removed from the radio unit and remotely installed in a motor-generator room. The motor-generator remotely installed would be listed under Category 8, with voltage code as appropriate.
- * c. In installations of older models of radio units the motor-generator sets have been replaced with rectifier power supplies. All such rectifier power supplies shall be listed separately whether physically installed within the radio unit or externally.
- d. Frequently, the conversion unit is not a part of the complete equipment but was added to adapt the basic unit to the available voltage supply. In such cases, the equipment and the conversion unit shall be listed separately with respective input voltages. Example: An A.C. AN/SPN-5 radar installed in a D.C. ship with insufficient A.C. voltage available requiring the provision of a motor-generator PU-163, PU-164, or similar. The AN/SPN-5 would be coded under Category 2, voltage 8, and the motor-generator would be coded under Category 8, voltage 6 or 7.

SECTION VII - LISTING OF ELECTRONIC EQUIPMENTS

1. The lists on the following pages contain all known items of electronic equipment and associated auxiliary units installed in MSTs ships in service (USNS).
- a. These lists indicate the preferred designator to be used for each item. It will be noted that some of the items of commercial equipment have been assigned military nomenclature, which is to be used as the preferred designator.
- b. Items indicated by an asterisk (*) are selected long-range items. The remaining items are either obsolescent and expected to be deleted by attrition; or are new items coming into service in small quantities and not yet selected for long-range support because of insufficient quantities.
- c. It will be noted that there are no listings of Category 5 (Ordnance Electronic Equipment) or Category 7 (Intercommunications Equipment), since no Category 5 equipment is currently installed in these ships, and the integration of Category 7 equipment into this record system has not yet been made effective.

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LIST VII - 1

EQUIPMENT CATEGORY 1 (RADIO)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED NOMENCLATURE
A - RADIO STATION ASSEMBLIES (RADIO UNITS AND RADIO CONSOLES) -			
FT-102	Mackay	Marine Radio Unit	*CFT-FT-102
FT-105	Mackay	Marine Radio Unit	*CFT-FT-105
FT-106	Mackay	Marine Radio Unit	*CFT-FT-106
MRU-10-11	Mackay	Marine Radio Unit	*CFT-MRU-10-11
MRU-10-11-13	Mackay	Marine Radio Unit	*CFT-MRU-10-11-13
3U	Radiomarine	Radio Unit	*CRM-3U
4U	Radiomarine	Radio Unit	*CRM-4U
5U	Radiomarine	Radio Console	CRM-5U
500U	Radiomarine	Radio Console	*CRM-500U
B - RADIOPHONE EQUIPMENT -			
ET-8012()	Radiomarine	Transmitter-Receiver set	CRM-ET-8012()
ET-8050	Radiomarine	Transmitter-Receiver set	CRM-ET-8050
MR-608-4()	Mackay	Remote control, U/W 214-series	*CFT-MR-608-4()
NT-23230	Military	Remote control, U/W TCP-series	23230
R-96/SR	Military	Receiver, U/W T-83/SR	R-96-SR
TCP()	Military	Transmitter-Receiver set	TCP()
T-83/SR	Military	Transmitter, U/W R-96/SR	T-83-SR
32RA/8	Collins	Transmitter	COL-32RA-8
210()	Mackay	Transmitter-Receiver set	CFT-210()
214 C	Mackay	Transmitter-Receiver set	*CFT-214 C
214D	Mackay	Transmitter-Receiver set	*CFT-214D
214E	Mackay	Transmitter-Receiver set	*CFT-214E
C - LIFEBOAT RADIO SETS -			
ET-8053	Radiomarine	Portable type	*CRM-ET-8053
ET-8055	Radiomarine	Fixed type	*CRM-ET-8055
401-A	Mackay	Portable type	*AN-SRC-6A
402-A	Mackay	Fixed type	*AN-SRC-9
D - LORAN RECEIVING EQUIPMENT -			
DBE	Military		DBE
LR-8803	Radiomarine		CRM-LR-8803
Mk2-Mod1	Sperry		*AN-SPN-7
Mk2-Mod2	Sperry		*AN-SPN-7A
E - RADIO DIRECTION FINDERS			
AR-8703()	Radiomarine		*CRM-AR-8703
AR-8707()	Radiomarine		*CRM-AR-8707
AR-8709()	Radiomarine		*CRM-AR-8709
AR-8714	Radiomarine		CRM-AR-8714
DF-1018	Bludworth		*CBJL-DF-1018
DF-1024	Bludworth		*CBJL-DF-1024
105()	Mackay		*CFT-105()
106()	Mackay		*CFT-106()
4001A	Mackay		*CFT-4001A
4003A	Mackay		*CFT-4003A

CONTINUED

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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EQUIPMENT CATEGORY 1 (RADIO) (CONT'D)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED NOMENCLATURE
F - RADIO TRANSMITTERS -			
ET-8003	Radiomarine	Emergency	*CRM-ET-8003
ET-8010C	Radiomarine	Main	*CRM-ET-8010C
ET-8010CA	Radiomarine	Main/Emergency	*CRM-ET-8010CA
ET-8010E	Radiomarine	Main	*CRM-ET-8010E
ET-8019A	Radiomarine	High Frequency	*CRM-ET-8019A
ET-8019E	Radiomarine	High Frequency	*CRM-ET-8019E
ET-8023D1	Radiomarine	High Frequency	*CRM-ET-8023D1
RM-154	Radiomarine	Master Osc., U/W CRM-500U	*CRM-RM-154
TDA	Military		TDA
TDB	Military		TDB
TDK	Military		TDK
149A	Mackay	Emergency	*CFT-149A
155B	Mackay	Main	*CFT-155B
167()	Mackay	High Frequency	*CFT-167()
2001	Mackay	Main	*CFT-2001
2002	Mackay	Emergency	*CFT-2002
2003	Mackay	High Frequency	*CFT-2003
G - RADIO RECEIVERS -			
AN/URR-39	National	Mfr's Model NC183-MR	*AN-URR-39
AR-8506-B	Radiomarine		*CRM-AR-8506B
AR-8510	Radiomarine		*CRM-AR-8510
BC-1004()	Military		BC-1004C
CR-91a	RCA		*CRV-CR-91a
NC-183DT	National		*CNA-NC-183DT
R-100/URR	Military		R-100-URR
R-203A/SR	Military		R-203A-SR
RAO()	Military		RAO()
RBO()	Military		RBO()
RCH()	Military		RCH()
RME-50	R.M.E. Inc.		CME-RME-50
SLR-F	Scott		CZC-SLR-F
SLR-H	Scott		CZC-SLR-H
SLR-12B	Scott		CZC-SLR-12B
SP-210X	Hammarlund		BC-1004C
SX-28	Hallicrafters		CHL-SX-28
S-38A	Hallicrafters		CHL-S-38A
128()	Mackay		*CFT-128()
138()	Mackay		*CFT-138()
3001	Mackay		*CFT-3001
H - AUTO ALARMS AND ALARM KEYS -			
AR-8600X	Radiomarine	Auto Alarm	*CRM-AR-8600X
AR-8650	Radiomarine	Alarm Keyer	*CRM-AR-8650
101-B	Mackay	Auto Alarm	*CFT-101B-AA
101-B	Mackay	Alarm Keyer	*CFT-101B-AK
5001	Mackay	Auto Alarm	*CFT-5001
5100	Mackay	Alarm Keyer	*CFT-5100

CONTINUED

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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EQUIPMENT CATEGORY 1 (RADIO) (CONT'D)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED NOMENCLATURE
I - MISCELLANEOUS ITEMS -			
AM-215()/U	Navy	Audio Amplifier	AM-215()-U
ATS-3	Radiomarine	Antenna-Transfer Switch	CRM-ATS-3
ATS-4	Radiomarine	Antenna-Transfer Switch	CRM-ATS-4
ATS-7	Radiomarine	Antenna-Transfer Switch	CRM-ATS-7
NT-49131-()	Navy	Speaker-Amplifier	49131-()
NT-49545	Navy	Speaker-Amplifier	49545
NT-49546	Navy	Loudspeaker	49546
NT-49620	Navy	Speaker-Amplifier	49620
RM-15	Radiomarine	Antenna-Switching Unit	CRM-RM-15
RM-22	Radiomarine	Time-Signal Jack Box	CRM-RM-22
RM-25	Radiomarine	Auto-Alarm Bell/Light Unit	CRM-RM-25
RM-26	Radiomarine	Auto-Alarm Bell Unit	CRM-RM-26
15670	Galbraith	Audio Control and Distribution Unit	CCBB-15670

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AN/SPN-4	Raytheon	Mfrs. Model CX-1002	*AN/SPN-4
AN/SPN-5	RMCA	Mfrs. Model CR-101A	*AN/SPN-5
AN/SPN-5A	RMCA	Mfrs. Model CR-101A (Mod.) (Contr. NObsr 52358)	*AN/SPN-5A
AN/SPN-5B	RMCA	Basic AN/SPN-5, with added functions of antenna de-icer, true-bearing assembly and variable-range markers	** *AN/SPN-5B
AN/SPN-13	GE	Mfrs. Model MN-5	*AN/SPN-13
AN/SPN-18	RMCA	Mfrs. Model CR 104	AN/SPN-18
AN/SPS-21	NAVY	Navy Model AN/SPS-21 Radar Set	AN/SPS-21
CR-101A	RMCA	Mfrs. designation of basic AN/SPN-5 set	AN/SPN-5
CR-104	RMCA	Mfrs. designation of AN/SPN-18	AN/SPN-18
CR-106	RMCA	Mfrs. Model CR-106 Radar Set	CRM-CR-106
CX-1002	Raytheon	Mfrs. designation of AN/SPN-4 set	AN/SPN-4
CX-1401	Raytheon	Mfrs. Model CX-1401 Radar set	CRP-CX-1401
CX-1402	Raytheon	Mfrs. Model CX-1402 Radar set	CRP-CX-1402
MK2-Mod. Ø Sperry		Mfrs. Model MK2-Model Ø Radar set	CS-MK2-Mod. Ø

RM-TBA RMCA True Bearing Assembly,
U/W Radar Set AN-SPN-5 *CRM-RM-TBA

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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* Use only when system is completed with all three modification

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LIST VII - 3

EQUIPMENT CATEGORY 3 (SONAR)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED DESIGNATOR
- ECHO DEPTH-SOUNDING SYSTEMS -			
AN/UQN-1B	Navy	Echo-Sounding Equipment	AN-UQN-1B
NJ-series	Navy	Echo-Sounding Equipment	NJ - { }
NK-series	Navy	Echo-Sounding Equipment	NK - { }
NMB-series	Navy	Echo-Sounding Equipment	NMB - { }
NMC-series	Navy	Echo-Sounding Equipment	NMC - { }
DE-102	SubSig.	Indicating-Fathometer System	CBM-DE-102
DE-103	SubSig.	Recording-Fathometer System	CBM-DE-103
ES-101	Bludworth	Echo Depth-Sounder System - Indicatory System	CBJL-ES-101
ES-102	Bludworth	Echo Depth-Sounder System - Recorder System	CBJL-ES-102
ES-103	Bludworth	Indicator/Recorder System- c/o ES-101 and ES-1022	*CBJL-ES-103
ES-116	Bludworth	Indicator/Recorder System- c/o ES-119 and Recorder	*CBJL-ES-116
ES-119	Bludworth	Indicating Depth-0-Meter System	CBJL-ES-119
ES-120	Bludworth	Recording Depth-0-Meter System	CBJL-ES-120
712-series	SubSig.	Indicating-Fathometer System	*CBM-712-()
896	SubSig.	Indicating-and Recording- Fathometer System	*CBM-896
896A	SubSig.	Indicating-Fathometer System	*CBM-896A
- SONAR ACCESSORY ITEMS -			
ES-1022	Bludworth	Fathometer Recorder	CBJL-ES-1022
ES-1120A	Bludworth	Depth Recorder	CBJL-ES-1120A
1215	SubSig.	Fathometer Recorder	*CBM-1215

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LIST VII - 4

EQUIPMENT CATEGORY 4 (TEST AND MEASURING EQUIPMENT)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED DESIGNATOR
- PART I: MILITARY MODELS -			
AN/USM-3()	- - - -	Test Tool Set	AN-USM-3 ()
BC-221-()	- - - -	Frequency Meter	BC-221-()
BC-1060-A	- - - -	Oscilloscope	BC-1060-A
I- 77	CTU	Multimeter (Mfr's Model 323)	I- 77
I-117	- - - -	Multimeter	I-117
I-134	CDU	Oscilloscope (Mfr's Model 224)	I-134
I-151-B	CHK	Signal Generator (Mfr's Model 198)	I-151-B
I-166-A	CTO	Multimeter (Mfr's Model 22)	I-166-A
I-176-A	CKE	Multimeter (Mfr's Model 237-F)	I-176-A
I-177	CHK	Tube tester (Mfr's Model 540)	I-177
LM-series	- - - -	Frequency Meter	LM- ()
ME-25-U	CHK	Multimeter (Mfr's Model 902-072)	ME-25-U

*Items indicated are selected long-range items. See paragraph 1.b., section VII.

CONTINUED

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LIST VII - 4

EQUIPMENT CATEGORY 4 (TEST AND MEASURING EQUIPMENT) (CONT'D)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED DESIGNATOR
- PART I: MILITARY MODELS (CONT'D) -			
OE-series	CV	Analyzer	OE- ()
OQ-series	CV	Tube tester (Mfr's Model 788)	OQ- ()
OS-8A-U	CHK	Oscilloscope	OS-8A-U
OZ-series	CHK	Tube tester/Multimeter (Mfr's Model 550-X)	OZ- ()
OAL-series	CPF	Tube tester (Mfr's Model 920P)	OAL- ()
OBL-series	Various	Oscilloscope	OBL- ()
OBU-series	- - - -	Radar Test Set	OBU- ()
OCR-1	CTU	Multimeter (Mfr's Model 335)	OCR-1
TS-34A-AP	- - - -	Oscilloscope	TS-34A-AP
TS-268-U	- - - -	Crystal Test Set	TS-268-U
TS-291-U	- - - -	Multimeter	TS-291-U
TS-294A-U	CJZ	Multimeter (Mfr's Model 664)	TS-294A-U
TS-297-U	- - - -	Multimeter	TS-297-U
TS-352-U	- - - -	Multimeter	TS-352-U
TS-376-U	OTO	Voltmeter (Mfr's Model 650-SC)	TS-376-U
TV-3()-U	- - - -	Tube tester	TV-3()-U
10223	- - - -	Test Tool Kit	10223
60039	CIS	Multimeter (Mfr's Model 542)	60039
60044	- - - -	V. T. Volt-Ohmmeter	60044
60064	CDU	Oscilloscope (Mfr's Model 224-A)	60064
60086	CSV	Multimeter (Mfr's Model 260)	60086

- PART II: COMMERCIAL MODELS -

10-20	CPF	Tube tester/Multimeter	CPF-10-20
40	CPF	Multimeter	CPF-40
46	CHK	Tube tester	CHK-46
85	CPF	Multimeter	CPF-85
102	CBIK	Multimeter	CBIK-102
103	CBIK	Multimeter	CBIK-103
198	CHK	Signal Generator	I-151-B
201	CBFF	Multimeter	CBFF-201
215	CSV	Megohm Meter	CSV-215
221	CCAS	Multimeter	CCAS-221
224	CDU	Oscilloscope	I-134
224-A	CDU	Oscilloscope	60064
247	CSV	Multimeter	CSV-247
260	CSV	Multimeter	60086
335	CTU	Multimeter	OCR-1
431-1	CJZ	Multimeter	CJZ-431-1
432	CALU	Unidentified	CALU-432
446	CJZ	Multimeter	CJZ-446
488	CJZ	Multimeter	CJZ-488
533	CHK	Tube tester	CHK-533
534-B	CHK	Tube tester	CHK-534-B
542	CIS	Multimeter	CIS-542
553	CJZ	Oscilloscope	CJZ-553
564	CV	Multimeter	CV-564
600-A	CHK	Tube tester	CHK-600-A
605	CHK	Multimeter	CHK-605
625	CCAS	Tube tester	CCAS-625

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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LIST VII - 4

EQUIPMENT CATEGORY 4 (TEST AND MEASURING EQUIPMENT) (CONT'D)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED DESIGNATOR
- PART II: COMMERCIAL MODELS (CONT'D) -			
630	CABU	Multimeter	CABU-630
630	CTO	Multimeter	CTO-630
664	CJZ	Multimeter, V. T.	TS-294A-U
666	CTO	Multimeter	CTO-666
685	CV	Tube tester	CV-685
685-3A	CV	Tube tester	CV-685-3A
687	CV	Audio Level Meter	CV-687
769-1B	CV	Analyzer	*CV-769-1B
779	CV	Multimeter	CV-779
785	CV	Industrial Circuit Tester	CV-785
785-4B	CV	Industrial Circuit Tester	CV-785-4B
798	CV	Tube tester	CV-798
798-3A	CV	Tube tester	CV-798-3A
844	CPF	Multimeter	TS-616-U
910	CPF	Tube tester	CPF-910
920	CPF	Tube tester/Multimeter	CPF-920
981-3	CV	Tube checker	*CV-981-3
4956	CHK	Multimeter	CHK-4956
MR-462-1	CFT	Multimeter	CFT-MR-462-1
RM-10	CRM	Transmitter Test Antenna	CRM-RM-10
WV-77A	CRV	Multimeter	CRV-WV-77A

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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LIST VII - 6

CATEGORY 6 (RADIAC AND NANCY*)

- RADIAC -

<u>ITEM DESCRIPTION</u>	<u>PREFERRED DESIGNATOR</u>
** DOSIMETER, LOW RANGE Charger for IM-9/PD-series	IM-9/PD-series PP-354/PD-series
** DOSIMETER, HIGH-RANGE (NONSELF-INDICATING) Computer-Indicator for DT-60/PD	DT-60/PD CP-95/PD
SURVEY METER, LOW-RANGE	AN-PDR/8-series AN-PDR/27-series
SURVEY METER, HIGH-RANGE	AN-PDR/18-series

(*) Nancy equipment is not currently an allowance item.

(**) The following procedure is to be used in reporting Radiac Dosimeters. Do not report serial numbers. List equipment models by location with the total number of equipments for each location indicated under the Serial No. column.

EXAMPLE: Cat. 6 - Loc. 900-Item DT-60/PD-Ser. No. (Qty 2) - Voltage 0

*

LIST VII - 8

CATEGORY 8 (POWER EQUIPMENT)

<u>TYPE/MODEL</u>	<u>MANUFACTURER</u>	<u>ITEM DESCRIPTION</u>	<u>PREFERRED NOMENCLATURE</u>
ET-8010	Radiomarine	Main Motor Generator	CRM-ET-8010
ET-8010-A	Radiomarine	Emergency Motor Generator	CRM-ET-8010-A
ET-8024-MG	Radiomarine	Main Motor Generator	CRM-ET-8024-MG
H-115-DC	A. Chalmers	115V.DC to 115V., 60c, 1Ø, 5KVA M/G	CDD-H-115-DC
H-230-DC	A. Chalmers	230V.DC to 115V., 60c, 1Ø, 5KVA M/G	CDD-H-230-DC
MR-560-11	Mackay	L.V. Power Supply	*CFT-MR-560-11
MR-560-12A	Mackay	Rectifier Power Supply & Modulator	*CFT-MR-560-12A
MR-560-12B	Mackay	Rectifier Power Supply & Modulator	*CFT-MR-560-12B
MR-560-17	Mackay	Power Unit, U/W 105-B D/F	CFT-MR-560-17
MR-776-5	Mackay	Power Supply Selector Switch	CFT-MR-776-5
MG-501	Radiomarine	Emergency Motor Generator	CRM-MG-501
PTS	Radiomarine	Power Transfer Switch	CRM-PTS
PTS-1	Radiomarine	Power Transfer Switch	CRM-PTS-1
RM-2	Radiomarine	Battery Charger	CRM-RM-2
RM-3	Radiomarine	Battery Charger	CRM-RM-3
RM-8	Radiomarine	Line Filter Unit	CRM-RM-8
RM-29	Radiomarine	Rectifier Power Unit, U/W AR-8510	*CRM-RM-29

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

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LIST VII - 8 (CONT'D)
CATEGORY 8 (POWER EQUIPMENT)

TYPE/MODEL	MANUFACTURER	ITEM DESCRIPTION	PREFERRED NOMENCLATURE
101-A	Mackay	Charger Control Unit	CFT-101-A-BC
101-B	Mackay	Battery Charger	CFT-101-B-BC
104-B	Mackay	Battery Charger	CFT-104-B
108-B	Mackay	Battery Charger	CFT-108-B
116-A	Mackay	Main Motor Generator	CFT-116-A
120-A	Mackay	Emergency Motor Generator	CFT-120-A
120-A	Mackay	Battery Charger	CFT-120-A-BC
122-A	Mackay	Battery Charger	CFT-122-A
128-A	Mackay	Battery Charging & Transfer Panel	CFT-128-A-BC
131-A	Mackay	Battery Charger	CFT-131-A
131-B	Mackay	Battery Charger	CFT-131-B

* Items indicated are selected long-range items. See paragraph 1.b., section VII.

SECTION VIII
LISTING OF EQUIPMENT MANUFACTURERS

LIST VIII - 1

TABLE OF MANUFACTURERS' DESIGNATING SYMBOLS - BY MANUFACTURERS' NAMES

Allis-Chalmers Mfg. Co. 1941 Ristow Street	- Milwaukee, Wisconsin	CDD
Associated Research, Inc. 431 S. Dearborn Street	- Chicago, Illinois	CBFF
Bludworth Marine Div. of National - Simplex - Bludworth, Inc. 92 Gold Street	- New York, New York	CBJL
Bogue Electric Mfg. Co. 52 Iowa Avenue	- Paterson, New Jersey	CGU
Brelco Electronics Corporation 65 Vandam Street	- New York, New York	CAQZ
Chicago Industrial Instruments Co. 534 West Elm Street	- Chicago, Illinois	CALU
Collins Radio Company, Inc.	- Cedar Rapids, Iowa	COL
Dumont Lab., Inc., Allen B. 2 Main Avenue	- Passaic, New Jersey	CDU
Electronic Instruments Company	- Brooklyn, New York	CCAS
Electronic Measurements Company	- Red Bank, New Jersey	CBIK
Espey Mfg. Company 33 West 46th Street	- New York, New York	CKE

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TABLE OF MANUFACTURERS' DESIGNATING SYMBOLS - BY MANUFACTURERS' NAMES

Federal Telephone and Radio Corporation 100 Kingsland Road	- Clifton, New Jersey	CFT
Hallcrafters Company, The 2611 South Indiana Avenue	- Chicago, Illinois	CHL
Hammarlund Mfg. Company 460 West 34th Street	- New York, New York	CHC
Hickok Electrical Instrument Company 10514 Dupont Avenue	- Cleveland, Ohio	CHK
Link, Fred M. 125 West 17th Street	- New York, New York	CFL
Mackay Radio and Telegraph Company 345 Hudson Street	- New York, New York	CBSL
National Company, Inc. 61 Sherman Street	- Malden, Massachusetts	CNA
Precision Apparatus Company 92-27 Horace Harding Blvd.	- Elmhurst, L. I., New York	CPF
Radio City Products Company 152 West 25th Street	- New York, New York	CJZ
Radiomarine Corporation of America 75 Varick Street	- New York, New York	CRM
Raytheon Manufacturing Company 190 Willow Street	- Waltham, Massachusetts	CRP
RCA-Victor Div. of Radio Corporation of America	- Camden, New Jersey	CRV
Scott Radio Lab., Inc., E. H. 4450 North Ravenswood Avenue	- Chicago, Illinois	CZC
Simpson Electric Company 5216 West Kenzie Street	- Chicago, Illinois	CSV
Sperry Gyroscope Company	- Great Neck, L. I., New York	CS
Star Kimble Motor Division, Miehle Printing Press and Mfg. Co. 200 Bloomfield Avenue	- Bloomfield, New Jersey	CST
Submarine Signal Company Washington Street North	- Boston, Massachusetts	CBM
Superior Electric Company 32 Harrison Street	- Bristol, Connecticut	CABU
Supreme Instrument Corp. 414 Howard Street	- Greenwood, Mississippi	CIS
Technical Radio Company 275 9th Street	- San Francisco, California	CAFH
Triplett Elec. Instrument Company Harmon Road	- Bluffton, Ohio	CTO

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TABLE OF MANUFACTURERS' DESIGNATING SYMBOLS - BY MANUFACTURERS' NAMES

Triumph Mfg. Company 913-21 West VanBuren Street	- Chicago, Illinois	CTU
Weston Electrical Instrument Corporation 619 Frelinghuysen Avenue	- Newark, New Jersey	CV

SECTION VIII

LIST VIII - 2

TABLE OF MANUFACTURERS' DESIGNATING SYMBOLS - BY PREFIX LETTERS

CABU	Superior Electric Company
CAFH	Technical Radio Company
CALU	Chicago Industrial Instruments Company
CAQZ	Brelco Electronics Corporation
CBFF	Associated Research, Inc.
CBIK	Electronic Measurements Company
CBJL	Bludworth Marine
CBM	Submarine Signal Company
CBSL	Mackay Radio and Telegraph Company
CCAS	Electronic Instruments Company
CDD	Allis-Chalmers Mfg. Co.
CDU	Allen B. Dumont Lab., Inc.
CFL	Fred M. Link
CFT	Federal Telephone and Radio Corp.
CGU	Bogue Electric Mfg. Co.
CHC	Hammarlund Mfg. Company
CHK	Hickok Elec. Instrument Company
CHL	Hallicrafter Company
CIS	Supreme Instrument Corp.
CJZ	Radio City Products Company
CKE	Espey Mfg. Company
CNA	National Company
COL	Collins Radio Company, Inc.
CPF	Precision Apparatus Company
CRM	Radiomarine Corporation of America
CRP	Raytheon Manufacturing Company
CRV	RCA-Victor Division of Radio Corporation of America
CS	Sperry Gyroscope Company
CST	Star Kinble Motor Division, Miehle Printing Press and Mfg. Co.
CSV	Simpson Electric Company
CTO	Triplett Elec. Instrument Company
CTU	Triumph Mfg. Company
CV	Weston Electrical Instrument Corporation
CZC	E. H. Scott Radio Lab., Inc.

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SHIP ELECTRONICS INSTALLATION RECORD											
NAVSHIPS 4110 (Rev. 6-53)				Date Revised by Ship _____						BUSHIPS Report-9670-2	
SHIP		FLEET	DIS.	VOLTAGE	AREA	TYPE	STATUS	HOME	DATE	DISTRIBUTION	
TYPE	NUMBER	FRONTIER	CMD.			ALW		YARD	MO	DAY	YR.
AK	89			A			H		01	1	5
											33
SHIP		CATEGORY	LOCATION	EQUIPMENT MODEL	SERIAL NUMBER	VOLTAGE		REMARKS			
TYPE	NUMBER					1	2				
SAMPLE OF PRINTED RECORD		1	10	CFT-138-B	48M055						
		1	10	CFT-214-D	52M085						
		1	10	CFT-MRU-10-11	4	2	6				
		1	340	CFT-MR-608-4A	52M021		8				
		1	340	MBF	2116		0				
		1	380	AN-SPN-7A	220082		6				
		1	380	CFT-106-BD	49M044		8				
		1	800	CHL-S-38-A			1				
		1	800	CHL-SX-28	AB438511		8				
		1			NONE		8				
		1	900	AN-SRC-6A	53M0569						
		2	380	CRP-CX-1401		14					
		3	380	CBJL-ES-102	1183		8				
		4	10	LM-18	128		8				
		4	900	CRV-WV-77A	1680		8				
		4	900	OCR-1	9780		8				
		4	900	TV-3A-U	NONE	14					
		8	10	CFT-104-A	793		8				
		8	10	CFT-108-B	NONE						
		8	380	CFT-129-A	46M093		6				
				NONE		6					
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					-FIG 1-			* *			

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NAVSHIPS 4110 (Rev. 6-53)

SHIP ELECTRONICS INSTALLATION RECORD

Date Revised by Ship 3-1-55

BUSHIPS Report-9670-2

SHIP		FLEET	DIS.	VOLTAGE	AREA	TYPE	STATUS	HOME	DATE		DISTRIBUTION	
TYPE	NUMBER	FRONTIER	CMD.			ALW		YARD	MO.	DAY	YR.	
AOG	2			5			H		07	1	3	33

SHIP		CATEGORY	LOCATION	EQUIPMENT MODEL	SERIAL NUMBER	VOLTAGE		REMARKS
TYPE	NUMBER					1	2	
SAMPLE OF MARKED-UP REVISION	(REVISIONS SHOWN IN BOLD PRINT)	1	10	RA L - 7				
		1	10	RA O - 6	1 2 7 7		8	
		1	10	RA L - 2	1 2 5 5		8	
		1	10	PA J - 1 1	2 1 9 7		8	
		1	10	PA K - 1 3	1 1 0		8	
		1	10	PA S - 1 2	7 0		8	
		1	10		1 2 5 8 6		6	
		1	380	AN - SPN - 7				
		1	380	CRM - AR - 8 7 0 9	1 2 5		8	
		2	340	AN - SPN - 5	4 3 8 1		1	
		3	380	CBM - 7 1 2 - S	1 4 9		8	
		4	900	CV - 7 8 5			8	
		4	900	1 - 1 7 6			1 4	
		4	900	LM - 1 1 LM - 1 1			8	
		4	900	OQ - 3	1 9 5		8	
		4	900	TS - 2 9 7 - U			1 4	
		1	10	- NEW ITEMS -				
		1	340	CFT - MRU - 1 0 - 1 1 - 1 3	5 2 M 0 8 5	2	8	
		1	900	CFT - MR - 6 0 8 - 4 A	5 3 M 0 5 2 9		1 4	
		4	900	AN - SRC - 6 A	7 0 5		8	
8	800	AN - USM - 3 A			7			
8	800	CDD - H - 2 3 0 - DC	2 N 8 1 9 3 - 5		7			
		CDD - H - 2 3 0 - DC	2 N 8 1 9 3 3 3					

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- FIG 2 -

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