



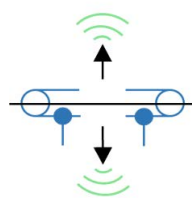
SHIPBOARD

EMI/EMP

PROTECTION

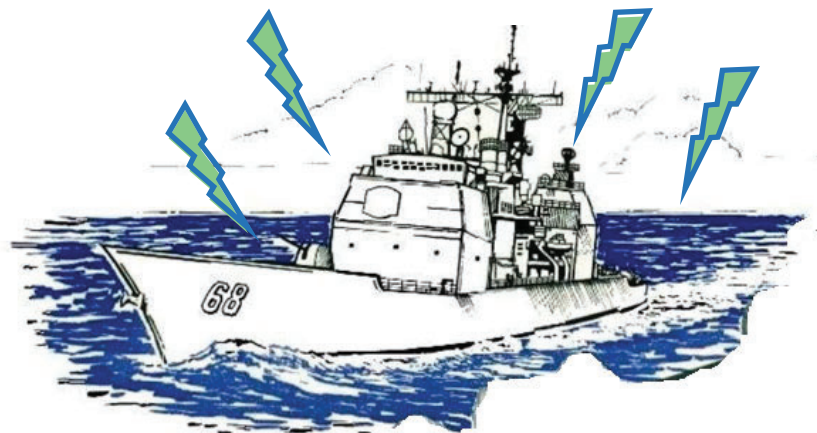
ADAPTERS

For Over Thirty Years Proudly Serving
The U.S. Navy With Unparalleled EMI/EMP
Protection **When It Matters.**



SEEPSA

SHIPBOARD EMI/EMP
PROTECTION ADAPTERS





SEEPa

(Shipboard EMI/EMP Protection Adapters)

Shield grounding adapters provide 360° grounding of shielded cables. The **SEEPa** adapter has been field tested, and proven to consistently provide shielding effectiveness in the 70-80 db range. The heat shrinkable weather seal provides an easily installed barrier against harsh maritime environments, that cause damaging corrosion.

SEEPa adapters are available in styles compatible with MIL-S-24235 stuffing tubes, NPT pipe threads and panel connections, in sizes to meet all shipboard applications. Standard materials include Cadmium Plated Aluminum, Corrosion Resistant Stainless Steel (316, 304, or 303 CRES), and Brass.

FIELD TESTED AT EMPRESS I AND DURING "AT SEA" PORTION OF USS ANZIO/EMPRESS II TRIAL. TEST REPORTS ALV UPON REQUEST

- SE (SHIELDING EFFECTIVENESS) = 72db
- PROVIDES 360° GROUNDING OF SHIELDED CONDUIT
- DOUBLE IRIS SPRING DESIGN INCREASES ATTENUATION OF UNWANTED RF ENERGY
- MEETS AND EXCEEDS THE REQUIREMENTS:

MIL-STD-1310H STANDARD PRACTICE: SHIPBOARD BONDING, GROUNDING, AND OTHER TECHNIQUES FOR ELECTROMAGNETIC COMPATIBILITY, ELECTROMAGNETIC PULSE (EMP) MITIGATION, AND SAFETY

S9407-AB-HBK-010 REV 2 HANDBOOK OF SHIPBOARD ELECTROMAGNETIC SHIELDING PRACTICES

SAE-AS81765/1

INSULATING COMPONENT, MOLDED, ELECTRICAL, HEAT SHRINKABLE POLYOLEFIN, CROSSLINKED, SEMI-RIGID AND FLEXIBLE

AVAILABLE STYLES:

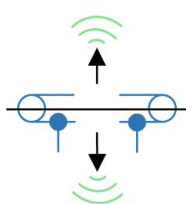
- S** - Stuffing Tube
- SF** - Straight Female Thread
- N** - NPT Male Pipe Thread
- NF** -NPT Female Pipe Thread



Note: Special Materials and Sizes are available upon request.

Foranne adapters are provided in kit form to provide easy access to all the materials necessary for an easy, effective installation.



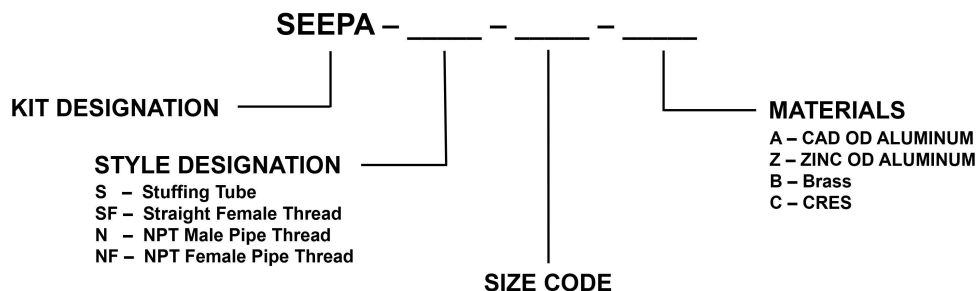


SEEPA

SHIPBOARD EMI/EMP
PROTECTION ADAPTERS



ORDERING INFORMATION

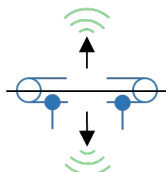


SIZE CODEs	STUFFING TUBE	STYLE S AND SF STUFFING TUBE THREAD	STYLE N AND NF NPT THREAD	MAX OD OF CABLE	MIN OD OF SHIELD
A-sm	A	7/8" - 12 UN 2A	1/4" NPT	.325"	.125"
A	A	7/8" - 12 UN 2A	3/8" NPT	.406"	.200"
B	B	1" - 12 UNF 2A	1/2" NPT	.515"	.260"
C	C	1 1/8" - 12 UNF 2A	3/4" NPT	.640"	.400"
D	D	1 1/4" - 12 UNF 2A	3/4" NPT	.750"	.400"
E	E	1 1/4" - 12 UNF 2A	1" NPT	.812"	.430"
F	F	1 5/16" - 12 UN 2A	1" NPT	.843"	.470"
G	G	1 1/2" - 12 UNF 2A	1" NPT	.953"	.580"
J	J	1 5/8" - 12 UN 2A	1-1/4" NPT	1.062"	.690"
K	K	3/4" - 12 UN 2A	1-1/4" NPT	1.172"	.800"
L	L	1 13/16" - 12 UN 2A	1-1/4" NPT	1.265"	.890"
M	M	2" - 12 UN 2A	1-1/2" NPT	1.406"	1.010"
N	N	2 1/16" - 12 UN 2A	1-1/2" NPT	1.515"	1.130"
P	P	2 3/16" - 12 UN 2A	2" NPT	1.625"	1.130"
R	R	2 5/16" - 12 UN 2A	2" NPT	1.750"	1.250"
S	S	2 11/16" - 12 UN 2A	2" NPT	1.875"	1.380"
T	T	2 7/8" - 12 UN 2A	2-1/2" NPT	2.062"	1.560"
V	V		2-1/2" NPT	2.187"	1.690"
W	W	3 1/8"-12 UN 2A	2-1/2" NPT	2.312"	1.810"
X	X		3" NPT	2.500"	2.000"

FOR INTERGRAL CABLE ENTRY SEAL:
USE "CES" SUFFIX (ie. SEEPA-S-A-A-CES)

Each SEEPA kit contains:

- Complete Grounding Adapter of the Specified Size and Style
- Required Amount of MIL-T22361 Anti-seize Compound, and Applicator.
- Abrasive Cleaning Strip
- Heat Shrinkable Weather Seal Boot
- Simple Installation Instructions



SEEPA Backfit Kit Available for:

SEEPA split design for insulation without removal of existing cable to increase performance of non-performing or poor performing grounding adapters.

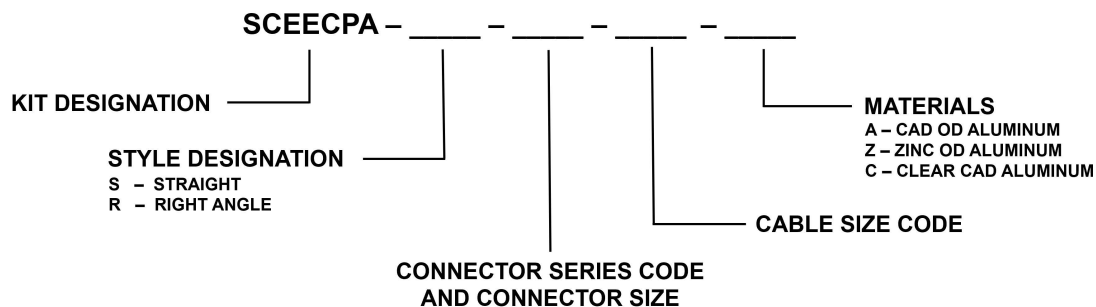
(Offering 12-20 db improvement in performance from initial installation)





FORANNE MANUFACTURING INC. **NOW OFFERING,**
SEEPa SHIELD GROUNDING CONNECTOR ADPATERs AVAILABLE IN A WIDE
 ARRAY OF STANDARD SIZES AND CONNECTOR SERIES

ORDERING INFORMATION



I - M2880/6
 SH Sizes: 11, 13, 15, 17,
 19, 23, 25, 29, 33

III - 5015 Series I
 SH Sizes: 10, 14, 16,
 18, 22, 24, 28, 32, 36

II- 38999 Series II
 SH Sizes: 8, 10, 12,
 14, 16, 18, 20, 22, 24

IV – 5015 Series II
 SH Sizes: 10, 12, 14,
 16, 18, 20, 24, 28, 32

V – 26482 Series II
 SH Sizes: 8, 10, 12,
 14, 16, 18, 20, 22, 24

ScEEcPA Back Shell Kits

Are designed to meet all thread, mechanical, material and plating specification / requirements per the desired connector series

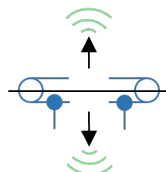
ScEEcPA assemblies are built to meet the same high standards as the **SEEPa** assemblies. Offering 12-20 db improvement in performance from initial insulation. **ScEEcPA** adapters are customizable to include material and plating requirements. Consult factory

Cable Size Code

SIZE CODE	MAX OD OF CABLE	MIN OD OF SHIELD
A-sm	.325"	.125"
A	.406"	.200"
B	.515"	.260"
C	.640"	.400"
D	.750"	.400"
E	.812"	.430"
F	.843"	.470"
G	.953"	.580"
J	1.062"	.690"
K	1.172"	.800"
L	1.265"	.890"
M	1.406"	1.010"
N	1.515"	1.130"
P	1.625"	1.130"
R	1.750"	1.250"
S	1.875"	1.380"
T	2.062"	1.560"
V	2.187"	1.690"
W	2.312"	1.810"
X	2.500"	2.000"

Each ScEEcPA kit contains:

- **Complete Grounding Adapter for the Specific Size and Series**
- **Required Amount of MIL-T22361 Anti-seize Compound, and Applicator.**
- **Abrasive Cleaning Strip**
- **Heat Shrinkable Weather Seal Boot**
- **Two EMI O Rings**
- **Simple Installation Instructions**





SHIELD GROUNDING PANEL MOUNT ADAPTERS ARE AVAILABLE
IN A WIDE ARRAY OF STANDARD SIZES AND MATERIALS.

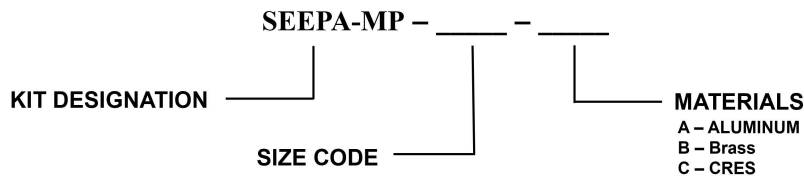
PROVEN SEEPA EFFECTIVENESS AND RELIABILITY



REDUCED OUTSIDE DIMENSION FOR
USE IN LIMITED SPACE APPLICATIONS

- DESIGNED FOR BOX OR PANEL MOUNT INSTALLATIONS UP TO 1/4" THICK
- PROVIDES 360° GROUNDING OF SHIELDED CABLES
- DOUBLE SPRING DESIGN INCREASES PERFORMANCE
- MEETS THE REQUIREMENTS OF MIL-STD-1310
- FIRE PROOF WEATHER SEAL MEETS THE REQUIREMENTS OF MIL-I-81765
- STANDARD MATERIALS INCLUDE: BRASS, CAD PLATED ALUMINUM AND 303 OR 316 STAINLESS STEEL

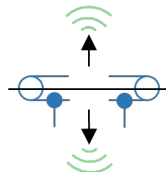
ORDERING INFORMATION



SIZE CODE	PENETRATION DIAMETER	MAX OD OF CABLE	MIN OD OF SHIELD
0	1/2"	.300"	.125"
1	5/8"	.400"	.200"
2	3/4"	.500"	.250"
3	1.0"	.750"	.400"
4	1.0"	.840"	.500"
5	1-1/4"	.950"	.625"
6	1-1/2"	1.175"	.800"
7	1-5/8"	1.400"	1.000"
8	2-1/8"	1.625"	1.250"
9	2-1/4"	1.875"	1.500"
10	2-1/4"	2.000"	1.625"
11	2-3/8"	2.190"	1.750"
12	2-3/4"	2.500"	2.000"

Each SEEPA-MP kit contains:

- Complete Grounding Adapter of the Specified size
- Panel Mount O-ring
- Required Amount of MIL-T22361 Anti-seize Compound, and Applicator.
- Abrasive Cleaning Strip
- Heat Shrinkable Weather Seal Boot
- Simple Installation Instructions





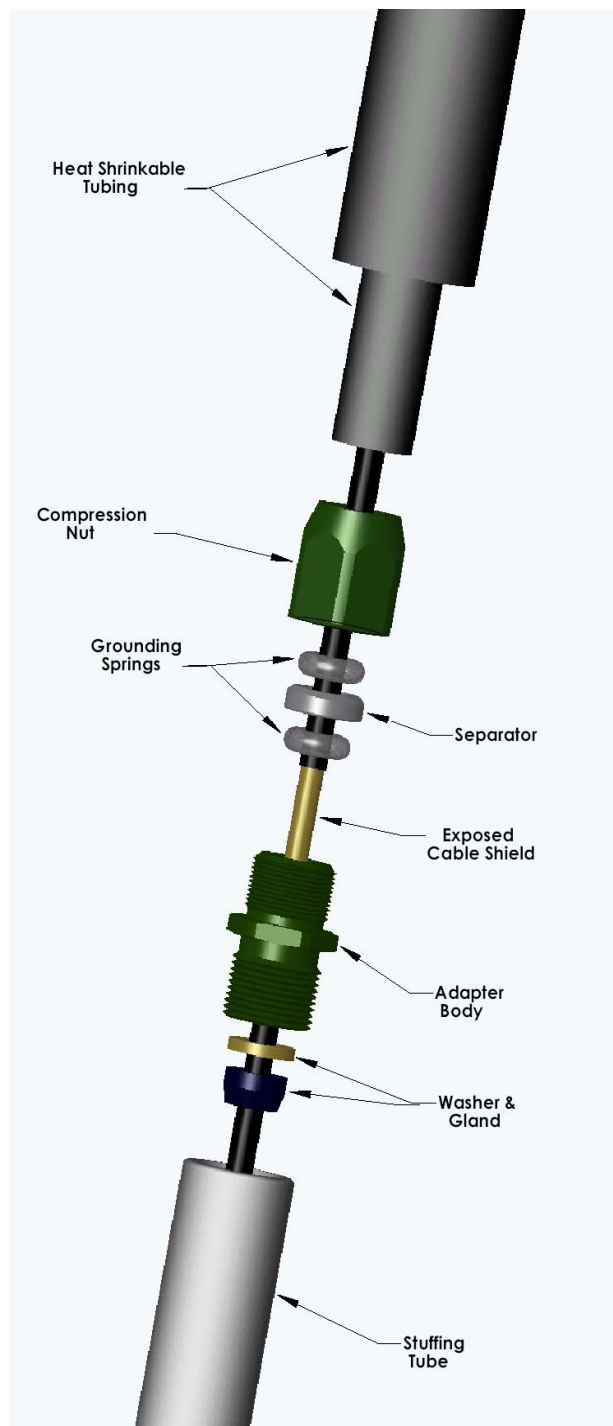
PARTS LIST

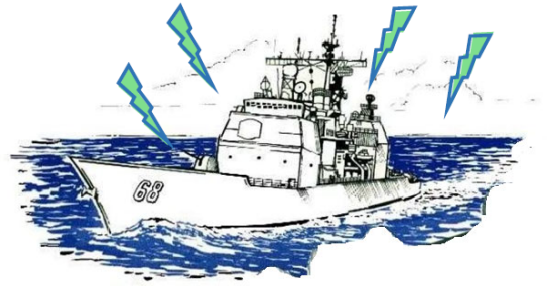
- (1) Adapter Body
- (1) Compression Nut
- (2) Grounding Springs
- (1) Separator
- (2) Heat Shrinkable Weather Seal Boots (Sizes A – R)
Size S and larger only require 1 Boot
- (1) Tin of MIL-T-22361 Anti-Seize Compound
- (1) Abrasive Sanding Strip

Assembly Instructions

INSTALLATION INSTRUCTIONS

1. Before pulling cable through the stuffing tube, unscrew and discard gland nut. (Keep packing material in place.)
2. Lightly screw adapter assembly into a stuffing tube of the same letter size. **Do not disassemble adapter assembly.**
3. Carefully pull shielded cable through the stuffing tube, adapter assembly and weather seal boots. Use caution not to damage internal components.
4. Rout cable to permanent installation, and tighten all hangers.
5. Move weather seal boot away from adapter assembly, and unscrew compression nut from the adapter body. Move compression nut and internal components several inches away from the adapter body.
6. Unscrew adapter body from the stuffing tube. Assume that packing material is properly installed. Apply a light coating of supplied MIL-T-22361 anti-seize compound to lower threads on the adapter body. Screw the adapter body into the stuffing tube and tighten as required for packing.
7. Using supplied sanding strip, sand glossy finish from the cable jacket for approximately 6" above the adapter body to create a good mating surface for the heat shrink boot.
8. Drop grounding springs and separator onto the adapter body, and mark the cable jacket slightly above the top grounding spring. Slide grounding springs and separator back up the cable.
9. Remove the cable outer jacket to expose the cable shield from the mark just made, to flush with the top of the adapter body. (There may be a thin plastic film over the shield, this must also be removed.)
NOTE: CABLE SHIELD MUST BE EXPOSED TO FLUSH WITH THE TOP OF THE ADAPTER BODY TO ASSURE CONTACT OF BOTH GROUNDING SPRINGS WITH THE CABLE SHIELD.
10. Drop grounding springs and separator down onto the adapter body. Apply a light coating of supplied MIL-T-22361 anti-seize compound to the upper threads and firmly hand tighten the compression nut onto the adapter body.
11. Slide smaller heat shrink boot down to $\frac{1}{4}$ " – $\frac{1}{2}$ " above the installed assembly. Apply heat, evenly, to the entire boot until sealant flows from the top and bottom of the boot.
12. Slide the larger heat shrink boot down such that it covers the entire assembly, and overlaps the stuffing tube and smaller heat shrink boot. Apply heat evenly around the tube from the center of the tube towards the ends. When sealant flows from the top and bottom of the tube, installation is complete.





FIELD TESTED "AT SEA" AND PROVEN

INSTALLATION INSTRUCTIONS

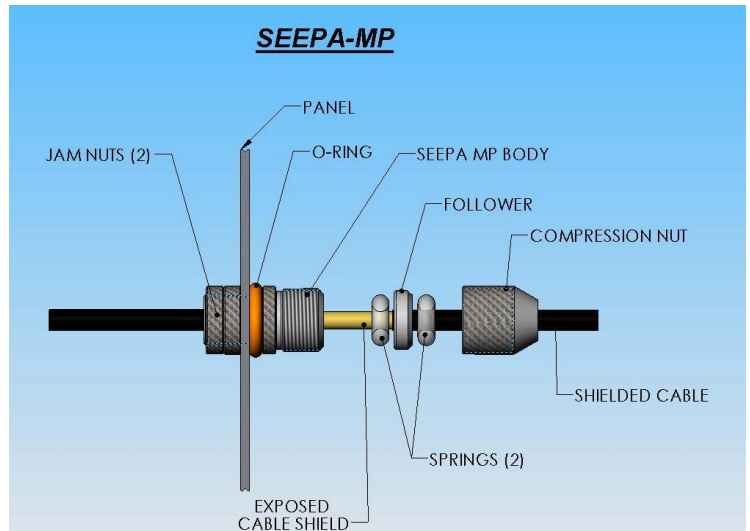
- 1 Pre-drill a hole in panel to allow minimal clearance for SEEPA-MP Adapter thread.
2. Remove jam nuts and insert SEEPA-MP into Panel opening. **Note that O-ring should remain on exterior side of the panel.**
3. Carefully pull shielded cable through the panel, adapter assembly and weather seal boots. Use caution not to damage internal components.
4. Rout cable to permanent installation, and tighten all hangers.
5. Move weather seal boot away from adapter assembly, and unscrew compression nut from the adapter body. Move compression nut and internal components several inches away from the adapter body.
6. Using supplied sanding strip, sand glossy finish from the cable jacket for approximately 4" above the adapter body to create a good mating surface for the heat shrink boot.
7. Drop grounding springs and separator onto the adapter body, and mark the cable jacket slightly above the top grounding spring. Slide grounding springs and separator back up the cable.
8. Remove the cable outer jacket to expose the cable shield from the mark just made, to flush with the top of the adapter

body. (There may be a thin plastic film over the shield, this must also be removed.) **NOTE: CABLE SHIELD MUST BE EXPOSED TO FLUSH WITH THE TOP OF THE ADAPTER BODY TO ASSURE CONTACT OF BOTH GROUNDING SPRINGS WITH THE CABLE SHIELD.**

9. Drop grounding springs and separator down onto the adapter body. Firmly **hand tighten** the compression nut onto the adapter body.

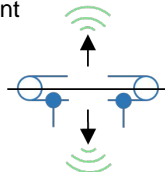
10. Slide smaller heat shrink boot down to $\frac{1}{4}$ " – $\frac{1}{2}$ " above the installed assembly. Apply heat, evenly, to the entire boot until sealant flows from the top and bottom of the boot.

11. Slide the larger heat shrink boot down such that it covers the entire assembly, and overlaps the stuffing tube and smaller heat shrink boot. Apply heat evenly around the tube from the center of the tube towards the ends. When sealant flows from the top and bottom of the tube, installation is complete



PARTS LIST

- (1) Adapter Body
- (1) Compression Nut
- (2) Jam Nuts
- (2) Grounding Springs
- (1) Follower
- (1) Abrasive Sanding Strip
- (2) Heat Shrink Weather Seal Boots as required



SEEPA For Over Thirty Years, Proudly Serving the
U.S. Naval Fleet & U.S. Coast Guard With Unparalleled EMI/EMP Protection
When It Matters.

SEEPA-MP-2-A
SEEPA-MP-3-A
SEEPA-S-B-C
SEEPA-S-A-C
SEEPA-S-D-C
USS Abraham Lincoln
CVN-72

SEEPA-S-B-C
SEEPA-S-A-C
SEEPA-S-D-C
USS Ronald Reagan
CVN-76

SEEPA-S-C-C
SEEPA-S-B-C
SEEPA-S-D-C
USS Benfold
DDG-65

SEEPA-S-B-C
SEEPA-S-C-C
USS Milius
DDG 69

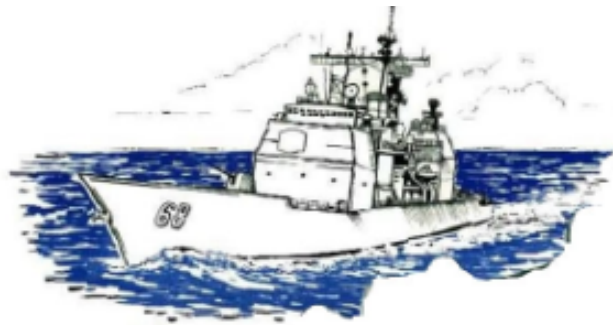
SEEPA-S-D-A
SEEPA-S-C-C
USS Howard
DDG-83

SEEPA-S-D-C
USS Shoup
DDG-86

SEEPA-S-B-C
SEEPA-S-D-C
USS Pinckney
DDG-91

SEEPA-S-D-C
SEEPA-S-E-C
USS Sampson
DDG-102

SEEPA-S-B-C
SEEPA-S-D-C
USS Dewey
DDG-105



SEEPA-S-G-C
USS John Finn
DDG-113

SEEPA-S-B-C
USS Rafael Peralta
DDG-115

SEEPA-S-K-C
SEEPA-S-L-C
USS Paul Ignatius
DDG-117

SEEPA-S-K-C
USS Antietam
CG-54

SEEPA-S-C-C
USS Shiloh
CG-67

SEEPA-S-D-C
USS Higgins
CG-76

SEEPA-S-C-C
USS O'Kane
CG-77

