

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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COMDTNOTE 16500
NOV 25 2003

COMMANDANT NOTICE 16500

CANCELLED: NOV 24 2004

Subj: CH-13 TO AIDS TO NAVIGATION MANUAL - ADMINISTRATION, COMDTINST
M16500.7

1. PURPOSE. This Notice updates Chapter 13 of the Aids to Navigation Manual – Administration.
2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, assistant commandants for directorates, Chief Counsel, and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice. Internet Release Authorized.
3. SUMMARY.
 - a. The requirement for districts to print and mail individual copies of the Local Notices to Mariners (LNM) and to maintain subscriber mailing lists is removed due to the availability of LNM's electronically. The Coast Guard has been publishing the entire LNM in an electronic format since 2000. Each week, an electronic version of each district's LNM is placed on the Navigation Center's (NAVCEN) website (www.navcen.uscg.gov) in a common user-accessible format.
 - b. The format in which geographic positions (latitude and longitude) are reported to the mariner/public for both chart corrections and Light List corrections is updated. The discussion of annotated copies of the LNM is also removed.

DISTRIBUTION – SDL No. 141

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
A	1	1	1	1	1	1	1	1	1	1		1	3	2	2	2	2		2		1					
B		8	20		3	1		1	1	1				30	3	1	1	2	1			2				
C				1	1	1	1		1		3	1	1	1				1					2	1		
D	1			2																						1
E					1					1	1	1			1				1							
F																										
G																										
H																										

NON-STANDARD DISTRIBUTION: B:c MLCPCAC, MLCLANT (6 copies)

COMDTNOTE 16500

4. PROCEDURES.

a. Remove and insert the following pages:

<u>Remove</u>	<u>Insert</u>
Pages 13-11 thru 13-12 CH-8	Pages 13-11 thru 13-12 CH-13
Pages 13-17 thru 13-18 CH-8	Pages 13-17 thru 13-18 CH-13

#

Encl: (1) CH-13 to Aids to Navigation Manual – Administration, COMDTINST 16500.7

U.S. Department
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United States
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United States Coast Guard

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COMDTNOTE 16500

Mar 8, 2000

COMMANDANT NOTICE 16500

CANCELLED: Mar 7, 2001

Subj: CH-12 TO AIDS TO NAVIGATION MANUAL - ADMINISTRATION, COMDTINST M16500.7

1. PURPOSE. This Notice updates Chapter 5 of the Aids to Navigation Manual -Administration.
2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and unit commanding officers shall ensure compliance with the provisions of this instruction.
3. SUMMARY.
 - a. This change revises the contents of Chapter 5 of the Aids to Navigation Manual -Administration, dealing with non-Coast Guard maintained aids to navigation. All references to the previous Coast Guard Headquarters organization have been changed to reflect the current organization (e.g., G-NSR to G-OPN). The requirement to send the report of all aids being administered in state waters for Private Aids to Navigation to Commandant (G-OPN) is canceled. Other major changes include a definition of private aids verification and private aids inspections. Owner self-verifications are authorized. Periodicity for inspections and verifications is established: (1) For Class I private aids, verifications as soon as possible after construction and then annually. (2) For Class II private aids, verifications every three years. (3) For Class III private aids, verifications every five years.

COMDTNOTE 16500

(4) Inspections will be on a spot check basis for Class I private aids, especially those with a history of frequent discrepancies or poor maintenance.

- b. Previously self-imposed Coast Guard inspection requirements created an expectation that it was the Coast Guard's responsibility as much as, or more than, the owner's to ensure private aids continued to operate properly. This change makes clear that the owner of a private aid to navigation is responsible for maintenance of that aid and the signal it provides. 4.

4. PROCEDURES.

- a. Remove and insert the following pages

<u>Remove</u>	<u>Insert</u>
Pages 5-1 through Figure 5-3 CH-8	Pages 5-1 through 5-11, Encl 5-1 through 5-3 CH-12

/s/ JAMES D. HULL
Director of Operations Policy

Encl: (1) CH-12 to COMDTINST M16500.7

U.S. Department
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Commandant
United States Coast Guard

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COMDNOTE 16500
FEB 29 1996

COMMANDANT NOTICE 16500

CANCELLED: FEB 28, 1997

SUBJ: CH - 11 TO AIDS TO NAVIGATION MANUAL - ADMINISTRATION,
COMDTINST M16500.7

1. PURPOSE. This notice updates Chapter 3 of the Aids to Navigation Manual - Administration.
2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and unit commanding officers shall ensure compliance with the provisions of this instruction.
3. SUMMARY. This change revises the minimum mandatory review cycle for WAMS analysis of critical waterways from three years to five years. Some of the major reasons justifying this change are: a) The Coast Guard's large Waterways AC&I backlog means that funding is often insufficient to accomplish recommended changes in the three year time period, thus the review recommendations for ATON projects are frequently the same as the prior recommendations, b) Personnel resources are insufficient to meet the triennial review requirement; streamlining may further reduce our ability to conduct reviews and, c) Most changes in the waterway occur slowly; so the increased review interval won't degrade waterway safety. District Commanders have the discretion to do reviews more frequently than the five Year minimum if it is determined that a waterway needs closer attention. In addition, this change more clearly defines the initial WAMS analysis requirements from subsequent reviews.

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COMMANDANT NOTICE 16500

COMDTNOTE 16500

JUN 27 1994

CANCELLED JUN 27 1995

Subj: CH-10 TO AIDS TO NAVIGATION MANUAL - ADMINISTRATION,
COMDTINST M16500.7

1. PURPOSE. This notice updates Chapters 3, 4 and 7 of the Aids to Navigation Manual - Administration.
2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units and Commander, Coast Guard Activities Europe shall ensure that the required page replacement is made for this change.
3. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. Purely editorial changes which do not change the meaning are not marked. Major changes are summarized below:
 - a. Chapter 3 - Section C, has been modified to increase command review of Waterway Analysis and Management System (WAMS) reports.
 - a. Chapter 4 Section D, has been modified as a result of findings from the investigation of the Amtrack derailment in Alabama in November 1993. It directs ATON personnel to pay careful attention to all bridges over waterways where there is any possibility for waterborne traffic to transit.
 - b. Chapter 7 - Section C, gives unit personnel more discretion for scheduling routine visits to aids. A Servicing Interval Flowchart (SIF) has been included to assist in the determination of the intervals between visits. Also, intervals between routine inspection visits of buoys, daybeacons and minor lights have been increased. All waterways must be visited at least annually to assess overall functioning of waterway ATON.

COMDTNOTE 16500
JUN 27 1994

4. PROCEDURES.

- a. Remove and insert the following pages:

<u>Remove</u>	<u>Insert</u>
Pages 3-13 thru 3-14, CH-9	Pages 3-13 thru 3-14, CH-10
Pages 4-21 thru 4-24, CH-9	Pages 4-21 thru 4-24, CH-10
Pages 7-1 thru 7-7, CH-6	Pages 7-1 thru 7-10, CH-10

- b. Units that have not received COMDTINST M16500.7, but have received this change may requisition a copy of COMDTINST M16500.7 and Changes 7, 8, & 9 from the DOT Warehouse in accordance with COMDTNOTE 5600; Directives, Publications and Reports Index.

5. REPORTS AND FORMS REQUIRED. A new ATON Servicing Interval Flowchart (SIF), is enclosed herewith. The SIF should be reproduced locally and maintained in the aid file.

/s/ G.A.PENINGTON
Chief, Office, of Navigation Safety
and Waterway Services

Encl: (1) CH-10 to COMDTINST M16500.7

U.S. Department
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United States
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2100 2nd St., SW
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COMDTNOTE 16500
26 SEP 1989

COMMANDANT NOTICE 16500

CANCELLED 25 MAR 1990

Subj: CH-9 TO COMDTINST M16500.7, (Aids to Navigation Manual -
(Administration)

1. PURPOSE. This notice updates Chapters 2, 3, and 4 of the Aids to Navigation Manual - Administration.
2. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. Purely editorial changes which do not change the meaning are not marked. Major changes are summarized below:
 - a. Chapter 2 - Section D, explains two reports for the Aids to Navigation Information System (ATONIS). Section E, corrects the method of charging for aids to navigation work. Section F, describes the Solar Power Service Report.
 - b. Chapter 3 - Section C, requires that a copy of all critical Waterway Analyses and Management System (WAMS) studies be forwarded to Commandant (G-NSR).
 - c. Chapter 4 - Section B, makes allowances for ICW mileage marks. Section C, explains the Coast Guard's policy for monitoring major aids to navigation.
3. REPORTS AND FORMS REQUIRED. The Quarterly ATONIS Discrepancy Report (RCS-G-NSR-15427B) is a letter report and is produced locally. The Annual ATONIS requirements Report, (RCS-G-NSR-15427A) is an annual data dump of the District Discrepancy Table. This report shall be produced locally. The Solar Power Service Report form is available from Supply Center Brooklyn.

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COMDTNOTE 16500

4. ACTION.

- a. Change the existing page numbers 4-21 through 4-38 to 4-25 through 4-42.
- b. Remove and insert the following pages:

Remove

Pages i thru iii
Pages 2-13 thru 2-14
Pages 3-13 thru 3-14
Pages 4-3 thru 4-20
Pages 4-41 thru 4-42
Pages 16-11 and Fig 16-1
Pages I-1 thru I-7

Insert

Pages i thru iii, Ch-9
Pages 2-13 thru 2-16, CH-9
Pages 3-13 thru 3-14, CH-9
Pages 4-3 thru 4-24, CH-9
Pages 4-41 thru 4-42, CH-9
Pages 16-11 thru 16-12, CH-9
Pages I-1 thru I-7, CH-9

/s/ R.T. NELSON
Chief, Office of Navigation Safety
and Waterway Services

Encl: (1) CH-9 to COMDTINST M16500.7

U.S. Department
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COMMANDANT NOTICE 16500
30 JUN 1988

COMMANDANT NOTICE 16500

CANCELLED: 29 DEC 1989

Subj: CH-8 TO COMDTINST M16500.7, (Aids to Navigation Manual -
Administration)

1. PURPOSE. This notice updates Chapters 1, 4, 5, 13, 15, and 16, replaces Enclosures (3) and (4), and introduces Enclosure (6) of the Aids to Navigation Manual - Administration.
2. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. Purely editorial changes which do not change the meaning are not marked. Major changes are summarized below:
 - a. Chapter 1 - Section A, defines Coast Guard's responsibility for the administration of aids to navigation to the public. Section B, defines Western Rivers and the IALA Region A and B marking system.
 - b. Chapter 4 - Section E, clarifies identification of temporary aids.
 - c. Chapter 5 - Section A, reflects expanded use of Coast Guard Auxiliary to verify private aids to navigation. Section D, discusses the establishment of private radionavigation aids.
 - d. Chapter 13 - Revision of Chapter 13 and clarifies information published in change 6.
 - e. Chapter 15 - Introduces the new survey requirements report.

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2. f. Chapter 16 - Introduces the Buoy and Chain Requirements Report.
 - g. Enclosure (3) - Updates standard light characteristics for U.S. Aids to Navigation System.
 - h. Enclosure (4) - Describes Coast Guard Auxiliary private aids to navigation verification program.
 - i. Enclosure (6) - Describes implementation of North American Datum 83 (NAD83).
3. DIRECTIVES AFFECTED. Commandant Instructions 16500.14 and 16502.9 are cancelled.
 4. REPORTS AND FORMS REQUIRED. The Operating Guide 46 Project and Funds Status Report (RCS G-EOE-3083) is canceled and replaced with the Buoy and Chain Requirements Report, (RCS-G-NSR-15430). Quarterly Report of Operation of Aids to Navigation - CG-2789 is revised and shall be reproduced locally. Federal Geodetic Control Committee - Project Requirements and Plans Report is canceled and replaced by USCG Survey Requirements Report, CG-5493 (Rev 6/88).
 5. ACTION. Remove and insert the following pages:

e. <u>Remove</u>	<u>Insert</u>
Page iii	Page iii, CH-8
Pages 1-1 thru 1-10	Pages 1-1 thru 1-10, CH-8
Pages 4-5 thru 4-8	Pages 4-5 thru 4-8, CH-8
Pages 4-11 thru 4-12	Pages 4-11 thru 4-12, CH-8
Pages 4-25 thru 4-26	Pages 4-25 thru 4-26, CH-8
Pages 4-35 thru 4-38	Pages 4-35 thru 4-38, CH-8
Pages 5-3 thru 5-10	Pages 5-3 thru 5-12, CH-8
Pages 13-1 thru 13-29	Pages 13-1 thru 13-47, CH-8
Pages 15-1 thru 15-4	Pages 15-1 thru 15-4, CH-8
Pages 15-9 thru 15-12	Pages 15-10 thru 15-12, CH-8
Pages 16-1 thru 16-12	Pages 16-1 thru 16-12, CH-8
Enclosure (3)	Enclosure (3), CH-8
Enclosure (4)	Enclosure (4), CH-8
	Enclosure (6), CH-8

/s/ R.T.NELSON
Chief, Office of Navigation Safety
and Waterway Services

Encl: (1) CH-8 to COMDTINST M16500.7

U.S. Department
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United States
Coast Guard



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COMDTINST 16500
26 FEB 1988

COMMANDANT NOTICE 16500

CANCELLED: 25 AUG 1988

Subj: CH-7 TO COMDTINST M16500.7, AIDS TO NAVIGATION MANUAL -
ADMINISTRATION

1. PURPOSE. This notice replaces Chapters 4, 11, 14 and Enclosure (5) of the Aids to Navigation Manual-Administration and provides changes to various other chapters.
2. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. Purely editorial changes which do not change the meaning are not marked Major changes are summarized below:
 - a. Chapter 1, Section D - Updated to reflect the change in Headquarters responsibilities from the reorganization of the Ocean Engineering Division and the elimination of the Office of Research and Development. The responsibilities of the Maintenance and Logistic Commands and their sub-units are also briefly described.
 - b. Chapter 3, Section C - The Waterways Analysis and Management System (WAMS) has been included to document changes in aids to navigation systems. Waterway definitions have also been included. The obligation to provide aids to navigation has been deleted to reflect our discretionary responsibility.
 - c. Chapter 4, Section B - Defines Information and Regulatory Marks. The light rhythm of FL(2)5s is established for the Isolated Danger Mark. Limits the use of Uniform State Waterways Marking System (USWMS) marks to state waters.

COMMANDANT NOTICE 16500
26 FEB 1988

2. d. Chapter 4, Section C - Provides guidance for the design of or modifications to major lights. Describes articulated beacons. Allows for radar beacon (RACON) placements in the center of bridge spans. Removes the general requirement, and central support, for sound signals with ranges greater than two miles.
- e. Chapter 4, Section E - Replaces the yellow band on Intracoastal Waterway (ICW) marks with symbols for lateral aids to navigation, and requires preferred channel marks at junctions with the ICW and a federally maintained waterway. Junctions of the ICW and a private waterway are not marked with a preferred channel buoy.
- f. Chapter 4, Figure 4-5 - Adds topmarks, isolated danger marks, information and regulatory marks, mooring buoys, and lists all authorized rhythms.
- g. Chapter 6, Section E - Corrects reporting requirement for wrecks.
- h. Chapter 9, Sections E and F have been deleted to remove references to Depots and Aids to Navigation Facilities (NFACs)
- i. Chapter 11, Section A - Includes a description of exportable training provided by the National Aids to Navigation (NATON) School, and responsibilities of the Technical Advisor assigned to the school. Requires officers in management or servicing billets to attend an appropriate NATON School course, if no attendance within five years.
- j. Chapter 11, Section B - Updates the description of available NATON School courses.
- k. Chapter 14, Section B - Includes a requirement for the State Historical Preservation Office (SHPO) clearance on major alterations at historical facilities. Stresses group commander responsibility for lighthouse maintenance.
- l. Chapter 14, Section B - Includes specific maintenance goals for lighthouses.
- m. Chapter 14, Section C - Includes the responsibilities of the Maintenance and Logistic Command organization for lighthouse structural maintenance, compliance inspections and property management.

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2. n. Enclosure (5) - Replaced with supplemental information on the completion of a WAMS analysis.
- o. Index - Updated through this change.

DIRECTIVES AFFECTED. Commandant Instruction 16500.1]B is cancelled.

3. ACTION. Remove and insert the following pages:

- | | |
|--|---|
| a. <u>Remove</u>
Pages i, ii, iii
Pages 1-7 thru 1-12
Pages 3-13 thru 3-16
Chapter 4
Pages 6-7 thru 6-8
Page 9-7
Chapter 11
Chapter 14
Enclosure (5)
Index | <u>Insert</u>
Pages i, ii, iii
Pages 1-7 thru 1-10
Pages 3-13 thru 3-1S
Pages 4-1 thru 4-37
Pages 6-7 thru 6-8

Pages 11-1 thru 11-12
Pages 14-1 thru 14-14
Pages V-1 thru V-7
Pages I-1 thru I-7 |
| b. Make the following pen and ink correction: Cross out Section E on Page 9-6. | |

/s/ MARTIN H. DANIELL
Chief, Office of Navigation

Encl: (1) CH-7 to COMDTINST M16500.7

U.S. Department
of Transportation

United States
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Commandant
United States Coast Guard

U.S.COAST GUARD
WASHINGTON,DC 20593
PHONE: (202) 426-1973
COMMANDANT (G-NSR-1)

COMDTNOTE 16500
7 MAY 1986

COMMANDANT NOTICE 16500

CANCELED: 6 NOV 1986

Subj: Change 6 to Aids to Navigation Manual - Administration -
COMDTINST M16500.7

1. PURPOSE. This notice replaces Chapter 13, adds Chapter 16 and provides minor changes to various chapters.
2. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. Purely editorial changes which do not change the meaning are not marked. Many pages have been retyped as a result of a change to 10 pitch type. Major changes are summarized below:
 - a. Chapter 1, Section B - Authorizes the TALA Region A system in the western Pacific.
 - b. Chapter 2, Section B - Deletes requirement for SANDS Primary Input Documents and introduces the Aids to Navigation Operation Supplement (CG-3213A).
 - c. Chapter 2, Section D - Changes procedures for recommending Buoy Body Allowance changes and for reporting surveyed or lost buoys. Reduces frequency of submission of Waterways ATON Project Schedule (CG-3739).
 - d. Chapter 2, Section E - Brings charges for Coast Guard Aids to Navigation work into conformance with 33CFR74.
 - e. Chapter 4, Section C- Authorizes electronic horns on mid-channel, fairway and approach buoys if the buoy body used cannot support a wave-actuated whistle.

2. f. Chapter 4, Section E - Changes the number of aids in a channel that should be visible to the mariner at any time. Authorizes the use of the Fl(2) rhythm on lateral aids. Requires the addition of an identifying letter to the first aid in a waterway
- g. Chapter 5 - Authorizes use of members of the Coast Guard: Auxiliary to inspect private aids to navigation.
- h. Chapter 7, Section C- Requires primary servicing units to visit each waterway twice a year.
- i. Chapter 13 - Changes format for Local Notice to Mariners.
- j. Chapter 16 - Outlines the requirements and procedures for ordering, funding and accounting for buoy bodies.

3. ACTION. Remove and insert the following pages:

Remove	Insert
Pages i, ii, iii	Pages i, ii, iii
Chapter 1	Pages 1-1 thru 1-12
Pages 2-3 thru 2-17	Pages 2-3 thru 2-14
Pages 4-1 thru 4-4, 11, 12 15, 21, 22, 25, 26	Pages 4-1 thru 4-4, 11, 12, 15, 21, 22, 25, 26
Pages 5-3 thru 5-9	Pages 5-3 thru 5-10 FIG 5-2, 5-3
Chapter 6	Pages 6-1 thru 6-8, FIG 6-1
Pages 7-1 thru 7-6	Pages 7-1 thru 7-7
Pages 8-7 thru 8-10	Pages 8-7
Pages 9-3, 9-4	Pages 9-3, 9-4
Pages 11-9	Pages 11-9
Chapter 13	Pages 13-1 thru 29
Pages 15-9, 10, 15-12	Pages 15-9, 15-10, 15-12, 13 Pages 16-1 thru 12, FIG 16-1 thru 16-4
Encl (1) page 1,2	Encl. (1) page 1,2

4. REPORTS AND FORMS.

- a. Report of Surveyed or Lost Buoys, Letter (RCS G-Nell-15426) shall be submitted as required by Section 2-D-5.
- b. LAMP Report Update (RCS-G-NSR-15408) is cancelled,

COMDTNOTE 16500
7 MAY 1986

4. c. Aids to Navigation Operation Request Supplement (Form CG-3213a) Rev 5-85 is available from CG Supply Center Brooklyn
- d. Waterways ATON Project Schedule (CG-3739) Rev (1-86) is available from Commandant (G-NSR)

/s/ W.J. Brogdon, Jr.
Acting Chief, Office of Navigation

Encl: (1) Change 6 to COMDTINST M16500.7

U.S. Department
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Commandant
United States Coast Guard

UNITED STATES COAST GUARD
G-NSR-1
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COMDTNOTE 16500
OCT 15 1984

COMMANDANT NOTICE 16500

CANCELED: 14 APR 1985

Subj: Change 5 to Aids to Navigation Manual - Administration-
COMDTINST M16500.7

1. PURPOSE. This notice provides changes to Chapter 1 and replaces Chapter 4.
2. SUMMARY. Major changes are summarized below:
 - a. Chapter 1, Section B - Amplifies information on Short Range Aids to Navigation Systems.
 - b. Chapter 1, Section, B - Relocates information on specific AtoN elements to Chapt 4.
 - c. Chapter 4, Section A Introduces a glossary of pertinent waterway design terms.
 - d. Chapter 4, Section B - Describes the five SRA Marking Systems
 - e. Chapter 4, Section C - Describes system elements and general guidelines for their use.
 - f. Chapter 4, Section D - Presents some general design considerations.
 - g. Chapter 4, Section E- Introduces a detailed, structured procedure for designing or evaluating a system of aids.
 - h. Chapter 4, Section F - Outlines criteria for naming aids.

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15OCT 1984

3. ACTION.

a. Remove and insert the following pages:

Remove

Pages i & ii
Pages 1-1 thru 1-4
Pages 4-1 thru 4-13

Insert

Pages i & ii
Pages 1-1 thru 1-4
Pages 4-1 thru 4-33

/s/ T.J.WOJNAR
Rear Admiral, U.S, Coast Guard
Chief, Office of Navigation

Encl: (1) Change 5 to COMDTINST M1650.7

U.S. Department
of Transportation

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COMDTNOTE 16500
3 OCT 1983

COMMANDANT NOTICE 16500

CANCELED: 2 APR 1984

Subj: Change 4 to Aids to Navigation Manual, Administration,
COMDTINST M16 500.7

1. PURPOSE. This notice provides Chapter 15 to the subject manual.
2. SUMMARY. The addition of Chapter 15 provides an introduction to geodetic surveying and guidance in strengthening horizontal control for fixed aids to navigation.
3. ACTION.
 - a. Remove and insert the following page:

<u>Remove</u>	<u>Insert</u>
Page i,ii, & iii	Page i, ii & iii
Pages I-1 thru I-7	Pages I-1 thru I-7
 - b. Attach Chapter 15 to the subject manual.

/s/ H.H. Koth
Captain, U.S. Coast Guard
Acting Chief,
Office of Navigation:

Encl: (1) Change 4 to COMDTINST M16500.7

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COMDTNOTE 16500
2 AUG 1982

COMMANDANT NOTICE 16500

CANCELLED: 1 DEC 1982

Subj: Change 3 to Aids to Navigation Manual, Administration,
COMDTINST 1416500.7

1. PURPOSE. This Notice provides a change To Chapter 10 and Index of the subject instruction.
2. SUMMARY. The major changes to the instruction are summarized as follows:
 - a. Section 10.A- Provides A brief history of discrepancy response policy.
 - b. Section 10.A.4 - Adds guidelines for evaluating discrepancy information and determination of efficient response.
 - c. Paragraph 10.B.1 - Provides Discrepancy Response Levels to be used in correcting aid discrepancies.
 - d. Section 10.B.2- Introduces and defines the Discrepancy Response Decision Guide for use in determining the proper discrepancy response level.
 - e. Paragraph 10.B.2.d - Adds categories for aids to navigation.
 - f. Section 10.C- Changes the Discrepancy Response Policy to incorporate the above changes.
 - g. Figure 10-1 - Part I of the Discrepancy Response Guide.
 - h. Figure 10-2 -Part II of the Discrepancy Response Guide:

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COMDTNOTE 16500
29 JUL 1982

COMMANDANT NOTICE 16500

CANCELLED: 1 DEC 1982

Subj: CH-2 to COMDTINST M16500.7; Aids to Navigation:
Manual, Administration

1. PURPOSE. This notice provides a change to the subject instruction.
2. SUMMARY. Articles which have been changed or modified by this change are indicated by a vertical line in the margin. However, purely editorial changes which do not change the meaning are not marked Major changes are summarized as follows:
 - a. Paragraph A.2.c. - Eliminates the requirement to list sales agents of the Government Printing Office in the Notice to Mariners.
 - b. Paragraph A.3.c. - Incorporates new, office designation, Commandant (G-NSR-3).
 - c. Section B.7. - Provides standard abbreviations for use in writing Local Notice to Mariners. Includes the new abbreviations for light characteristics as well as the abbreviations "LNB" "ODAS" and "SPM"
 - d. Paragraph C.1.b. - Permits districts to reproduce Local Notice to Mariners at reduced type size.
 - e. Paragraph C.2.a. - Provides the proper sequence of information for Local Notice to Mariners.
 - f. Paragraph C.3.b. (3) - Introduces enclosure (5), the check-off list for Local Notice to Mariners.

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29 JUL 1982

2. (Cont'd)

- g. Paragraph C.3.c. - Contains the time requirements for advance notice of changes in aids to navigation.
- h. Paragraph C.3.d.(2). - Contains the required preliminary statement for proposed changes in aids to navigation as outlined in the CFR.
- i. Paragraph C.3.f. - Requires destroyed aids to be kept current in the Local Notice to Mariners.
- j. Paragraph G.3.g. - Quarterly Summary now to include only temporary aids to navigation.
- k. Paragraph C.3.h. - Incorporates the requirement to publish the commencement of construction of structures in the Local Notice to Mariners.

3. ACTION.

- a. Remove and insert the following pages:

Remove

Page i, ii
Pages 13-1 thru 13-25

Insert

Page iii
Pages 13-1 thru 13-25
Pages I-1 thru I-7 Following Page 14-9
Encl (5) Following Encl (4)

/s/ R.A.BAUMAN
REAR ADMIRAL, U.S.COAST GUARD
Chief, Office of Navigation

Encl: (1) CH-2 to COMDTINST M16500.7

COMDTNOTE 16510
2 AUG 1982

3. ACTION.

a. Remove and insert the following pages:

<u>Remove</u>	<u>Insert</u>
Page ii	Page ii
Pages 10-1 through 10-3	Pages 10-1 through 10-8
Page I-2	Page I-2

/s/ R.A.Bauman
Rear Admiral, U.S.Coast Guard
Chief, Office of Navigation

Encl: (1) CH-3 to COMDTINST H16500.7

U.S. Department
of Transportation

United States
Coast Guard



Commandant
United States Coast Guard

G-NSR-1
U.S. Coast Guard
Washington, DC 20593
Phone: (202) 426-1973

*COMDTNOTE 16500
6 May 1982

COMMANDANT NOTICE 16500

CANCELLED: 1 SEP 1982

SUBJ: Change 1 to COMDTINST M16500.7 - Aids to Navigation on Manual

1. PURPOSE. This notice provides Chapter 14 to the subject manual

2. ACTION.

a. Remove and insert the following pages:

Remove
Pages i & ii

Insert
Pages i, ii, & iii, CH-1

b. Attach Chapter 14 to the subject manual.

/s/ R.A.BAUMAN
Rear Admiral, U.S. Coast Guard
Chief, Office of Navigation

Encl: (1) Change 1 to COMDTINST M16500.7

U.S. Department
of Transportation

United States
Coast Guard



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Washington, D.C. 20593
Phone (202) 426-1973

COMDTINST M16500.7 Nov 16 1981
COMMANDANT INSTRUCTION M16500.7 (old CG-222-1)

Subj: Aids to Navigation Manual-Administration

1. PURPOSE. This Manual Instruction promulgates policy and guidance for the administration of the Short Range Aids to Navigation Program
2. DIRECTIVES AFFECTED. The 1972 edition of the Aids to Navigation Manual-Administration is hereby canceled in its entirety.
3. DISCUSSION. This new edition of the Aids to Navigation Manual-Administration has been reformatted in accordance with current directives. Although numerous minor editorial corrections have been made, the text remains generally unaltered with the exception of sections 10.C. and 12.C. which contain substantial revisions
4. CHANGES. This Manual Instruction will be updated by consecutively numbered changes. Record each change on the following page
5. EFFECTIVE DATE. This Manual Instruction is effective upon receipt.
6. REPORTS AND FORMS AVAILABILITY. The reports required by this Manual Instruction are listed in Chapter 2, paragraph D. All forms are stocked at Supply Center Brooklyn.

/s/ R.A.Bauman
Rear Admiral, U.S. Coast Guard
Chief, Office of Navigation

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Chapter 1. INTRODUCTION

A. Aids to Navigation Manual.

1. Purpose. The Coast Guard operates and administers the United States Aids to Navigation System. The principal policy statements, administrative practices, and technical information needs to establish, operate, and maintain those parts of the system which have audio, visual, radar, or radio characteristics are presented in this manual.
2. Content. This manual contains instructions and policies governing the operation and maintenance of Federally controlled visual, audio, radar, and radio aids to navigation, along with administrative instruction for field units and commands needed to support the aids to navigation system. Reference material is included where the source documents are not widely distributed. References are also made to Coast Guard and other Federal publications, various Commandant Instruction series, and standard seamanship texts.
3. Use. This manual is intended only for the internal guidance of personnel involved in the administration of the Coast Guard's aids to navigation program. The high expectations of performance contained in this manual are intended to encourage public service above and beyond the minimum threshold of due care. Any requirements or obligations created by this manual flow only from those involved in Coast Guard aids to navigation administration to the Coast Guard, and the Coast Guard retains the discretion to deviate or authorize deviation from these requirements. This manual creates no duties or obligations to the public to comply with the procedures described herein, and no member of the public should rely upon these procedures as a representation by the Coast Guard as to the manner of performance of our aids to navigation mission.
4. Organization.
 - a. This manual is published in five volumes: COMDTINST M16500.7 - Aids to Navigation Manual - Administration; CG-222.2 - Aids to Navigation Manual-Seamanship; COMDTINST M16500.3 - Aids to Navigation Manual-Technical; CG-222.4 - Aids to Navigation Manual-Radionavigation; and COMDTINST M16500.1B - Aids to Navigation Manual - Positioning.

- A. 4. b. COMDTINST'S M16500.7, M16500.1B, and CG-222-2 are prepared and revised by Commandant (G-NSR). COMDTINST M16500.3 is prepared and revised by Commandant (G-ECV) in conjunction with Commandant (G-NSR). CG-222.4 is prepared and revised by Commandant (G-NRN).
- 5. Additional Information Sources. Pertinent Commandant Instructions and Notices will normally be found in the following series: 10500 and 16500.

B. Short Range Aids to Navigation Systems.

1. Definition. A short range aids to navigation system is a group of interacting external reference devices intended to collectively provide sufficient and timely information with which to safely navigate within and through a waterway when used in conjunction with updated nautical charts and other commonly available material. The system includes all navigation devices within visual, audio, radar or radiobeacon range of the user. The term "aids to navigation system" is also used to refer to the particular marking scheme used by a system of aids. Most aids to navigation employ the U.S. Marking System or a variation of this standard system. Complete descriptions of each marking system are contained in Chapters 4 and 5 of this manual.

2. System Types.

a. The U.S. Marking System. The U.S. Marking System is a predominantly lateral system which follows Region B requirements of the IALA Maritime Buoyage System, except U.S. possessions west of the International Date Line and south of 10 degrees north latitude, which follow IALA Region A.

b. The Intracoastal Waterway (ICW) Marking System. This variation of the U.S. Marking System is employed along the Atlantic and Gulf Intracoastal Waterways. It differs from the standard U.S. Marking System by displaying distinctive yellow bands, triangles, or squares to connote ICW significance.

c. The Western Rivers Marking System. The Coast Guard operates this system on the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational demarcation lines dividing the high seas from harbors, rivers and other inland waters of the United States, and the Port Allen-Morgan City Alternate Route, and that part of the Atchafalaya River above its Junction with the Port Allen-Morgan City Alternate Route including the Old River and the

- | B. 2. c. (cont.) New River. The Western Rivers Marking System
| is also used on the following rivers or waterways:
| the Tennessee-Tombigbee Waterway, Tombigbee, Black
| Warrior, Alabama, Coosa, Mobile River above Cochrane
| Bridge at St. Louis Point, Flint, Chattahoochee, and
| the Apalachicola River above its confluence with the
| Jackson River. It differs from the U.S. system due
| to the unstable nature of the river waters and
| channels. Chapter 4 outlines these differences in
| detail.
- | d. The Uniform State Waterways Marking System (USWMS).
| The USWMS was developed jointly by the Coast Guard
| and state boating administrators to meet the specific
| needs of small boat operators navigating in state-
| marked waters. It consists of a system of regulatory
| markers, a system of aids to navigation and a
| distinctive color scheme for mooring buoys.
| Specifics on the USWMS are found in Chapter 5 and in
| 33 CFR 66.10.
- | e. Private Aids to Navigation. Private aids should
| conform to the existing system in which they are
| placed. Rules for establishing and inspecting
| private aids are contained in Chapter 5.

C. Coast Guard Authority.

1. General Authority. The Coast Guard has authority to:
- a. Develop, administer, and operate Short Range Aids to Navigation Systems to serve the needs of maritime commerce and the Armed Forces.
 - b. Control private aids to navigation in waters subject to the Jurisdiction of the United States and on the outer continental shelf, and on the high seas when the owner is subject to the Jurisdiction of the United States.
 - c. Mark wrecks in the navigable waters of the United States or waters above the continental shelf.
 - d. Prescribe lights and other signals to mark obstructions to navigation located in the navigable waters of the United States or waters above the continental shelf.
 - e. Disseminate information to mariners concerning the operation of aids to navigation.

C. 2. Statutory Authorities.

- a. The Coast Guard shall develop, maintain, establish, and operate, with due regard for the requirements of national defense, aids to maritime navigation for promotion of safety on and over the high seas and waters subject to the jurisdiction of the United States (14 USC 2).
- b. In order to aid navigation and prevent disasters, collisions, or wrecks, the Coast Guard may establish, maintain, and operate aids to maritime navigation required to serve the needs of the Armed Forces or of the commerce of the United States (14 USC 81).
- c. Short range aids to navigation systems shall be established and operated only within the United States, the waters above the continental shelf, the territories and possessions of the United States, the Trust Territory of the Pacific Islands, and beyond the territorial jurisdiction of the United States at places where naval or military bases of the United States are or may be located (14 USC 81).
- d. Under authority of the Outer Continental Lands Act (43 USC 1333), enacted in 1953, the Coast Guard may promulgate and enforce regulations with respect to lights and warning devices on the artificial islands, installations, and other devices on the outer continental shelf involved in the exploration, development, removal, or transportation of resources therefrom. See also C.2.e(1) below.
- e. Other statutes authorize the Coast Guard to:
 - (1) Prescribe lights and other signals to be displayed on fixed and floating structures located in or over waters subject to the jurisdiction of the United States, and in the high seas when the owner or operator is subject to the jurisdiction of the United States. (14 USC 85).
 - (2) Issue and enforce regulations concerning lights and other warning devices in deepwater ports and their adjacent waters. (33 USC 1509)
 - (3) Disseminate information to mariners concerning aids to navigation under the jurisdiction of the Coast Guard, including the publication and distribution of Light Lists and Notices to Mariners (14 USC 92,93; 44 USC 1309)

- C. 2. e. (4) Regulate the establishment, maintenance and discontinuance of private aids to navigation. (14 USC 83).
- (5) Mark anchorage areas which have been defined and established by proper authority. (49 USC 1655, 33 USC 472)
- (6) Mark wrecks or other obstructions in the navigable waters of the United States or waters above the continental shelf. Owners of wrecks and obstructions are responsible for marking and liable for the cost of marking if done by the Coast Guard. (14 USC 86, 33 USC 409)
- (7) Prescribe lights and other signals necessary for the safety of marine navigation to be displayed from bridges over the navigable waters of the United States. (33 USC 494, 14 USC 85)
- (8) Enforce laws for the protection of aids to navigation maintained by or under the authority of the Coast Guard. (14 USC 84, 89, 643; 33 USC 408, 411, 412, 413)
- (9) Establish, operate and maintain aids to navigation for the primary benefit of federal agencies other than the Armed Forces. (14 USC 93(f), 141, 633)
- f. The National Environmental Policy Act of January 1970 (42 USC 4321), requires that all federal agencies assist to the fullest extent possible the Federal effort to protect and enhance the environment.
- 3. Regulations. Title 33, Subchapter C, Parts 60-76 contains the regulations, as provided for in the preceding statutory authorities, pertaining to aids to navigation.
- 4. Objective of the Aids to Navigation System.
 - a. Aids to navigation systems are developed, established, operated and maintained by the United States Coast Guard to accomplish the following:
 - (1) Assist navigators in determining their position.
 - (2) Assist the navigator in determining a safe course.
 - (3) Warn the navigator of dangers and obstructions.
 - (4) Promote the safe and economic movement of commercial vessel traffic.

D. Short Range Aids to Navigation Organization.

1. Tasks. To effectively carry out the statutory authorities of the Coast Guard for aids to navigation, each level of the Coast Guard's organization is assigned certain tasks. Those tasks outlined in this manual apply to units specifically assigned the mission of administration, operation or maintenance of the aids to navigation system. Commanding officers and officers-in-charge of units not assigned an aids to navigation mission shall inform the district commander by message of any aid to navigation that is found to be out of order or obviously out of position, including information as to corrective action taken. The report to the district commander shall involve any important hydrographic information or any other information of navigational interest to shipping.
2. Commandant.
 - a. Commandant (G-C). Coast Guard regulations contain the general authority of the Commandant with respect to aids to navigation. The staff components at Headquarters tasked with administering or assisting the aids to navigation program are:
 - b. Commandant (G-NSR). The primary tasks of the Chief, Short Range Aids to Navigation Division, Office of Navigation Safety and Waterway Services, are to:
 - (1) Administer and supervise the operation and routine maintenance of the aids to navigation system, including support units.
 - (2) Review for approval certain district commander recommendations regarding establishment, discontinuance, or changes in aids to navigation. (See Chapter 2.B.)
 - (3) Maintain Light Lists (COMDTINST M16502.1 thru M16502.7) and oversee issuance of Local Notices to Mariners by district commanders.
 - (4) Oversee financial management of the aids to navigation system.
 - (5) Plan and budget for future developments in aids to navigation.
 - (6) Prepare and review various aids to navigation publications.

- D. 2. b. (7) Coordinate the administration and training of aids to navigation personnel.
- (8) Maintain records necessary for the proper accomplishments of the above tasks.
- c. Commandant (G-E). The primary responsibilities to support the short range aids to navigation system in the Office of Engineering are assigned as follows:
 - (1) Commandant (G-ECV). The primary tasks of the Chief, Civil Engineering Division is responsible for developing policy and standards for design, maintenance, construction, and inspection of all fixed and floating aids to navigation, light stations, buildings, shops, docks, antennas over 100 feet and aids to navigation signaling equipment.
 - (2) Commandant (G-ECV-3). The primary tasks of the Chief, Ocean Engineering Branch under the Chief, Civil Engineering Division are to develop, evaluate, and maintain technical standards for Coast Guard short-range aids to navigation equipment and systems; design, acquire and consolidate various hardware into aids to navigation signaling systems; and maintain the Short Range Aids to Navigation Technical Manual.
 - (3) Commandant (G-ER). The primary tasks of the Chief, Research and Development Staff are to plan, control, and administer research and development projects in the aids to navigation mission area; provide technical advice, information and direct laboratory support in the technical areas of optics, acoustics, engineering physics, electrical engineering, materials engineering, shore electronics systems, including communications, operations research and human factors and physiology; and to plan and manage the expenditure of funds designated for research and development in short range aids to navigation under the guidance of G-NSR.

- D. 2. c. (4) Commandant (G-ENE). The primary tasks of the Chief, Naval Engineering Division are for the alteration, maintenance and repair of tender class vessels and aids to navigation boats, and for support to the Office of Acquisition Project Managers in the design and constitution of aids to navigation vessels.
- d. Commandant (G-T). The primary responsibilities to support the short range aids to navigation system in the Office of Command, Control and Communications are assigned as follows:
 - (1) Chief, Electronics Systems Division (G-TES) is responsible for the acquisition, installation, improvement and maintenance of short range electronic aids to navigation including radiobeacons, racons and other electronic hardware.
 - (2) Chief, Telecommunications System Division (G-TTS) is responsible for landline, radiocommunication, and radio spectrum management support, and liaison with national and international radio policy-making organizations. Application for operation of all radionavigation transmitting equipment, including racons, radars, and radar transponders, must be made in accordance with COMDTINST M2400.1 (Radio Frequency Plan) and COMDTINST M2000.3 (Telecommunications Manual).

3. District Commanders

- a. The district commander has the authority to administer the aids to navigation activities within the district. Coast Guard Regulations outline general responsibilities in this regard, and the Organization Manual (COMDTINST M5400.7B) gives more detailed information as to the functions of the various staff components assisting the district commanders. Specific tasks assigned to, and administrative procedures used by, the district commander are contained throughout this manual.
- b. The Chief, Aids to Navigation and Waterways Management Branch in a district has many responsibilities such as planning, coordinating and reviewing the operations of the district's individual field units and maintaining contact with military and civilian users of Coast Guard aids to navigation.

D. 4. Maintenance and Logistic Commanders

- a. The realignment of Coast Guard support functions in 1987 created two Maintenance and Logistic Commands. Specific responsibilities and coordination of activities between the operational commander in the district and the support commander in the region have been issued by each Maintenance and Logistic Commander.

5. Field Commanders, Group Commanders and Individual Unit Commanding Officers and Officers-in-Charge shall:

- | a. Possess a sense of ownership. Be responsible to
| obtain and communicate the support needed to maintain
| fixed and floating aids to navigation in a high
| standard of material condition.
- | b. Develop a close working relationship through frequent
| contact and exchanging information with the users of
| Coast Guard aids to navigation.
- | c. Seek out methods to improve the system, forwarding
| suggestions to higher authority for distribution
| Coast Guard wide.

6. Headquarters Units. Headquarters Units operate under the direction of a Headquarters Office Chief. The aids to navigation functions performed as part of their missions are as follows:

- a. The Electronics Engineering Center, Wildwood, NJ field tests radionavigation equipment, develops prototypes and repairs racons.
- b. The Research and Development Center, Groton, CT conducts applied research and develops operational techniques, concepts, systems, equipment, and materials.
- c. The Coast Guard Yard, Curtis Bay, MD manufactures or procures aids to navigation equipment which are not readily available from commercial sources.
- d. Supply Center Brooklyn, NY provides a central stocking and shipping point for centrally procured aids to navigation equipment hardware.
- e. The Electronics Engineering Laboratory, Coast Guard Station Alexandria, VA manages the aids to navigation test facility.

- D. 5. f. The National Aids to Navigation School, Coast Guard Reserve Training Center, Yorktown, VA provides basic and advanced training in aids to navigation equipment, systems, maintenance and policy for officer, enlisted, and civilian personnel.
- g. Ships Inventory Control Point, Baltimore, MD purchases and stocks standard aids to navigation buoy hardware.

CHAPTER 2. GENERAL ADMINISTRATION OF THE SHORT AIDS TO NAVIGATION SYSTEM

A. Management Principles.

1. Personnel Management

- a. Personnel management deals with a relatively scarce and expensive resource-- the people who put into effect all that is written elsewhere in this manual. "Scarce" is becoming a particularly appropriate adjective for people experienced with the aids to navigation system. Therefore, the dynamic growth and development of this resource should be the prime effort of all supervisory personnel. This concept recognizes the importance of each leader in maintaining an adequate pool of trained people. By encouraging individuals to achieve the greatest possible realization of their own abilities, the efficiency for themselves and their working group will be attained.
- b. The retention of our people also depends in part on several major personnel policy areas existing outside the scope of our in late mission minor which are pay, retirement, medical benefits, etc. The daily conditions in which people find themselves, however, have an even greater effect upon their decisions about remaining in the service. A few simple yet important points in the creation of this daily environment are mentioned here:
 - (1) Each individual's asset must be considered important both by the individual and the supervisor. Work poorly done, either through improper training or lack of interest on anyone's part affects the whole unit. Assignments missed by one person or several have a way of piling up and endangering the success of a whole operation.
 - (2) Each person can and will enjoy doing some job better than others. The wise personnel administrator or buoy deck supervisor will invariably put the right person in the right job. He or she will complement good performance with recognition and upgraded responsibilities. The only way that the supervisory personnel can make correct assignments and stimulate growth of responsibility however, is to know their people and to be interested in them.
 - (3) A person's job or supervisor should not be changed without reason or advance warning. Careful planning can forestall unnecessary disruptive transfers.

- A. 1. b. (4) People function best when they have a secure routine. A hallmark of effective personnel management is a dependable routine where people are told what is going on and why it is going on and are free from sudden, arbitrary change. However, the establishment of a secure routine should not lead to a "rut" where individual development and growth are stifled.
- (5) It is necessary that commanding officers and officers-in-charge of aids to navigation units insure proper assignment of Enlisted Qualification Codes to members of their command. The procedure for qualification and asset of such codes is explained fully in the Enlisted Ratings Qualifications Manual, CG-311. Failure to fulfill all service record and reporting requirements for Qualification Codes may result in an inaccurate record of a person's qualifications being made available to Coast Guard Headquarters and district personnel offices. When this happens, qualified aids to navigation personnel may be unintentionally rotated out of aids to navigation duty or fail selection for responsible duty assists for which they are actually qualified.

2. Unit Management

- a. As the keystone of personnel management is interest in and concern for the individual, management of aids to navigation units should reflect this same philosophy. Frequent visits should be made to every operating unit by command representatives. Since aids to navigation work lacks the glamor and action of other Coast Guard mission areas, those other areas may demand and receive more of the administrator's attention. However, aids to navigation requires great precision and thoroughly professional competence, which only result from proper training and motivation.
- b. Therefore, group, section and unit commanders will conform to the following policy. Primary assignments as aids to navigation officers will be given only to experienced, mature officers with a sound background in aids to navigation. Should there be no one available who meets these requirements, a choice will then be made from those officers who are most liable to develop an interest in aids to navigation and the corresponding field units.
- c. Secondly, aids to navigation officers will schedule the possible number of visits to field units, either by themselves or by a carefully selected, conscientious representative. The purpose of these visits should be two-fold. They should insure that field units are operating in a professional manner, and they should appraise their material and personnel needs, with requests for action to meet these needs promptly addressed to cognizant superiors.

B. Administrative Procedures

1. Introduction. Considerations which affect changes in individual aids vary widely between different types of aids. Costs may vary from a few dollars for a daybeacon to millions of dollars for a large navigation buoy (LNB). General policies concerning additions to, or changes in, the aids to navigation system and the related operational and administrative policies are outlined in this section.

| 2. Aids to Navigation Operation Request (CG-3213) and Aids
| to Navigation Operation Request Supplement (CG-3213A)

a. Purpose

- (1) The Aids to Navigation Operation Request (Form CG-3213) is used to justify and authorize proposed changes in the Coast Guard aids to navigation system, and to record those changes. The submission of this form serves to:
- (a) Ensure that the proposals are in conformance with existing regulations concerning the aids to navigation system of the United States.
 - (b) Provide justification for the proposed changes in terms of usage, environmental conditions and other factors.
 - (c) Obtain approval for the operating characteristics of the aid.
 - (d) Provide a brief summary of the technical details of the aids, including type of equipment to be used and cost estimates.
 - (e) Obtain authority to expend funds for specific projects.
 - (f) Provide an official record of certain data appearing in the Light List and Notice to Mariners.
- | (2) The Aids to Navigation Operation Request
| Supplement (CG-3213A) is used to provide
| technical information on aids to navigation
| projects.

B. 2. b. Criteria and Approving Authority

- (1) Submission of CG-3213 is not required in the following cases, provided that an appropriate Notice to Mariners is issued, and a request for funds is not involved:
 - (a) The temporary establishment, relocation, change or discontinuance of any short range aid to navigation.
 - (b) Discontinuance of any temporary aid which has served its purpose.
 - (c) Installation of approved types of visual reflectors or reflective material.
 - (d) Change in buoy types not requiring a chart or Light List correction.
 - (e) Routine marking of channels in the Second Coast Guard District.
 - (f) The permanent minor relocation of buoys and minor structures to better mark a channel, reduce the aid destruction rate, or facilitate aid construction provided that service to the mariner is not reduced.
 - (g) Restoration of damaged, destroyed, or missing aids to their previous operating status as shown in the Light List.
- (2) All other permanent changes to the Coast Guard aids to navigation system necessitating a Light List or chart correction must be authorized by approval of Form CG-3213. (When buoy type changes affect allowances, request allowance change by rapidraft letter, or if one was prepared, by CG-3213.) District commanders are authorized to approve this form except for the following instances which require submission to the Commandant (G-NSR) for approval:
 - (a) Any project requiring expenditure of Acquisition, Construction and Improvement (AC&I) Waterways funds in excess of \$5,000 (see Section B-6 in this chapter).

- B. 2. b. (2) (b) Any project requiring expenditure of operating expense (OE) funds in excess of \$20,000.
- (c) Any project involving changes in the staffing level of an aid to navigation.
- (d) Any project requiring submission of a Civil Engineering STRUCTALT (CG-3434) and/or ELECTRONALT (CG-3439).
- (e) Any project proposing use of unauthorized or non-standard equipment or characteristics.
- (f) Any project proposing establishment of aids in waters not already marked by the Coast Guard.
- (g) Any project involving cooperation and/or coordination with state, federal, foreign or international agencies.
- | (h) Any project which proposes to eliminate, or
| decrease the range of, the primary light,
| fog signal or radiobeacon at a major aid.
- (i) Any project of an unusual nature, e.g., of significant public interest which should be brought to the attention of the Commandant.

c. Preparation and Format

- (1) Form CG-3213 may be prepared to include more than one aid and more than one action when all are part of the same current project and are in the same geographic area. The form shall be submitted to the Commandant (G-NSR) or as required to the district commander, and shall be completed in accordance with the instruction on the reverse thereof.
- | (2) Marking of major corps of Engineers river and
| harbor projects, or extensive revisions in types
| and placement of existing aids to navigation, in
| terms of time and geography, should be the
| subject of a Waterways Analysis and Management
| (WAMS) study. Although the entire waterway will
| be studied, it may be desirable to treat the
| actual work as a series of smaller projects
| rather than as a single large project. This

- B. 2. c. (2) (cont'd) will facilitate the review and administration of the projects in both the district and Headquarters, and will minimize the need to change or amend projects.
- (3) The CG-3213 prepared for approval at the district level should contain the same background information required for those projects submitted for Commandant approval. Item 14 should be signed by the chief, aids to navigation branch and Item 16 should be signed by an officer so authorized by the district commander. The chief, civil engineering branch, shall be responsible for completing the cost estimate in support of the operational requirements of each Form CG-3213. The form shall also bear an indication (use of the remarks section is suggested) that it has been staffed through the engineering division and funds manager as appropriate. This is the minimum amount of administrative action necessary to insure proper control within the district.
- (4) The following should be included in all CG-3213 and CG-3213A forms:
- (a) Adequate justification in terms of the type, amount and value of traffic, how the aids would be used, etc.
 - (b) Accurate charting data.
 - 1. The position of the aid shall be given in latitude and longitude, conforming with the precision standards listed in the Positioning Manual (COMDTINST M16500.1).
 - 2. If an existing aid is moved, it may be published as "moved 50 yards to the northeast" and the specific location given. It shall NOT be described as "moved to a new position 50 yards, 047 degrees from its old position."
 - (c) A section of the largest scale chart on which the proposed changes are indicated shall be enclosed with form CG-3213 when submitted to the Commandant. The following information must appear on the chart section:

- B. 2. c. (4) (c) 1. Chart number (C&CS, LS, N.O. or other).
2. Latitude and longitude reference marks.
3. Action proposed for each aid. Avoid obscuring the aid symbol and related information appearing on the chart which indicates the status of the aid before the change is made.

- (d) Reasons for rejecting other obvious or more economical solutions to the problem that might be indicated from an examination of the chart.
- (e) Required operational range of lights and fog signals, and percentage of the nights visible or time used (CG-3213A).
- (f) Light color and phase characteristics (CG-3213A).
- (g) Rated battery discharge time (RBDT).
- (h) All range constants and the K factors computed therefrom. (CG-3213A or computer printout.)

d. Project Numbers

- (1) Each Form CG-3213 shall be assigned a six or seven-digit project number, derived as follows:
- (a) The first two digits indicate the district originating the request.
- (b) The second set of two digits indicate the fiscal year in which submitted.
- (c) The last two or three digits indicate the consecutive number of the project for that fiscal year. Projects approved at the district level will be identified by the suffix "D."
- (2) Project numbers should be assigned in sequence without skipping numbers.

- e. Buoy Allowance Changes. When buoy allowances are affected by district-approved projects, submit a copy of the approved CG-3213 without cover letter to Commandant (G-NSR). The CG-3213 should contain full

B. 2. e. (cont) justification for any proposed increase in the rotational spare allowance.

f. Changes to Approved Projects.

(1) Changes to previously approved projects may be necessary to bring them into conformance with the actual work done by the Corps of Engineers or to provide the type and location of aids which will be of greatest benefit to the mariner. A much clearer understanding of the proposed changes will result if the following guidelines are observed:

(a) Extensive changes:

1. If few or no items on the original project have actually been accomplished in the field, cancel the previously approved project in its entirety and submit a new project. Any changes in aids actually made should be included in the new project and noted as already accomplished. A new project number must be assigned and a statement included in Box 7, "Summary of Action Proposed" that "Project _____ is canceled in its entirety."

2. If most of the previously authorized changes in aids have been made in the field, cancel only the unaccomplished items of the original project and submit a new project (new number), referencing the original project.

(b) Minor changes. Minor changes that become necessary between project approval and accomplishment may be authorized by the district commander. Such changes might include a change in the position, name, number, or characteristic of an aid.

g. STRUCTALTS and ELECTRONALTS.

(1) With the exception of LAMP projects, Civil Engineering STRUCTALT (Form CG-3434) and Electronics Alteration/Request/Authorization (Form CG-3439) shall be submitted as required by the Civil Engineering Manual (COMDTINST M11000.1) and the Electronics Maintenance Manual (COMDTINST M10550.13) .

- B. 2. g. (2) Forms CG-3434 and CG-3439 shall be included as enclosures to the Aids to Navigation Operation Request (CG-3213) for LAMP projects.
 - (3) It is imperative that the various forms relating to each individual project be cross-referenced.
 - 3. Project Funding. Most routine aids to navigation projects, including replacement or restoration of aids, are completed using district OE funds, regardless of whether the approving authority is the District Commander or the Commandant. The exceptions are AC&I projects which fall under one of three categories.
 - a. Miscellaneous Urgent Waterways AC&I applies to projects over \$5K but not exceeding \$20K that involve the establishment of a new aid station.
 - b. Selected Waterways AC&I applies to projects over \$20K that involve the establishment of a new aid station or to projects over \$125K for the betterment or renewal (75% renewed) of an aid to navigation.
 - c. LAMP AC&I applies to projects involving the automation or modernization of a lighthouse.
 - 4. Buoy Body Management. Instructions on buoy body management are contained in Chapter 16.
- C. Supplementary Instructions By District Commanders
- 1. General. The district commander shall issue such instructions as necessary to supplement this manual and insure efficient operation of the aids to navigation systems. Such instructions should normally be incorporated in the district operation plan, but may be issued as district commander's instructions or in other appropriate format. These supplementary instructions shall include, but are not limited to, the subjects listed in this section.
 - 2. Assignment of Group/Unit Responsibility. The district commander shall assign responsibility for the following to the appropriate Group or Unit Commander:
 - a. Periodic inspection of manned and unmanned aids to navigation and servicing facilities.

- C. 2. b. Monitoring of unmanned aids to navigation.
 - c. Inspection, servicing, maintenance and relief of unmanned aids to navigation.
 - d. Inspection of private aids to navigation.
- 3. Instructions to Lamplighters. The district commander shall issue the necessary detailed instructions to lamplighters to guide them in the performance of their duties. The times and conditions under which the aids are to be operated, reports required, inspection and maintenance requirements, etc., should be specified.
- | 4. Wartime Operation of Aids to Navigation. District
| Commanders shall prepare and issue appropriate instruc-
| tions concerning the operation of lighted aids to naviga-
| tion when so directed by wartime operational commanders.
| Appropriate contingency plans for the allocation of aids
| to navigation resources under wartime conditions shall be
| prepared as required by the Coast Guard Capabilities and
| Mobilization Plan.
- D. Administrative Reports By The District Commander. Certain reports are necessary to enable the Commandant to administer the aids to navigation mission of the Coast Guard. As a basic premise, the number of reports required will be the minimum consistent with the requirements of law and regulation and the need for information on which to base requests for funds, make policy decisions, and establish service-wide standards of performance. Recommendations concerning the usefulness of, or change to required reports are encouraged. The following reports are required:
 - 1. Quarterly Report of Operation of Aids to Navigation - CG-2789 (RCS G-NSR-15400)
 - a. This report provides statistical information on the type and number of aids to navigation operated by the Coast Guard, or otherwise subject to its jurisdiction (private aids, bridge lighting, etc.). This report is useful as a preliminary guide to the review of the facilities that are or will be required to perform the Coast Guard's aids to navigation mission. It provides data for inclusion in the annual report to the Secretary of Transportation and for the information of the general public. Submission is required within ten days of the end of each quarter.

- D. 1. b. The Quarterly Report is not an inventory report, but rather summarizes the number of each type of aid station that is authorized regardless of whether or not the authorized aid is actually on station and in operation as of the date of the report. The number and types of aids authorized will be based on the aid as it is described in column 2 of the Light List plus any aid that is operated concurrently with it and so mentioned in column 7 or as stated on Form CG-3213.
- c. The number of aids established or discontinued will not include seasonal changes in types or numbers.
- d. Submit original to Commandant(G-NSR) on Form CG-2789.
2. Approved Corps of Engineers River and Harbor Improvement Projects - CG-3740 (RCS G-NSR-15301)
- a. This report summarizes for the Commandant each River and Harbor Improvement Project upon which the Corps of Engineers plans to expend federal funds during the next three fiscal years. The report is of primary importance to Headquarters in preparing the aids to navigation budget and in justifying requests for AC&I funds for the next several years. The following comments are applicable to the completion of this report:
- (1) The title of the project shall be that assigned by the Corps of Engineers. (Any aids to navigation established later, however, would not necessarily be given names related to the project.)
 - (2) Indicate the district AC&I project number immediately after the project title if Form CG-2618 has been submitted. If none, so state.
 - (3) Indicate the Corps of Engineers district in which the project is located.
 - (4) The chart number shall be that of the largest scale chart showing the locality of the project.
 - (5) Description of the project shall be that written by the Corps of Engineers.
 - (6) Estimate date of commencement of Corps of Engineers work.

- D. 2. a. (7) Estimate date of completion of Corps of Engineers work.
- (8) Include an itemized list of aids to navigation that will be required to mark the project and the fiscal year the aids will be required.
- (9) Estimate the cost of new aids to navigation by fiscal year.
- (10) Add any additional comments as necessary.
- (11) Copies of pertinent correspondence with the Corps of Engineers should also be enclosed with the report. Chart sections or copies of Corps of Engineers project maps shall be enclosed with Form CG-3740 for each project.
- (12) Include the type and cost of any additional support facilities that may be required.
- b. Submit original to Commandant (G-NSR) on CG-3740 annually by 1 December.
- 3. Waterways ATON Project Schedule, CG-3739 (RCS-G-NSR-15403)
 - a. This schedule lists all Waterways Miscellaneous, Urgent and Selected aids to navigation projects which are proposed for accomplishment during the next four quarters and two subsequent fiscal years.
 - b. The projects shall be arranged by quarters in which funds can be obligated and by priority within each quarter. If a project is expected to extend over the fiscal year fund requirements should be shown in different quarterly columns of the Funds Obligation Schedule.
 - c. All reports shall indicate the date of signature.
 - d. Form CG-3213 covering projects listed on the Project Schedule must be submitted as soon as practicable after the requirement for aids to navigation has been determined.
 - e. Submit original to Commandant (G-NSR) on 15 August and 15 February.

- D. 4. Buoy Body Allowance, Letter (RCS G-NSR-15405). An annual letter report submitted to Commandant (G-NSR) on 1 October stating that the buoy body allowance as stated on the District Buoy Body Transaction Report is sufficient, or if not, the new recommended allowance.
5. Report Of Surveyed Or Lost Buoys, Letter (RCS G-NSR-15426) Submitted to Commandant (G-EOE) on 1 August, 1 November, 1 February, and 1 May this report may: (a) summarize district totals for each class of buoy lost or surveyed or (b) attach as enclosures copies of reports submitted by district units to the district commander.
- | 6. Quarterly Aids to Navigation Information System (ATONIS) Discrepancy Report (RCS-G-NSR-15427B). This letter report provides summary information concerning the response to aid discrepancies. The report examines the four response levels, the number of discrepancies in each level, and the number of discrepancies responded to in the time frame allowed. The report allows Headquarters to monitor the Discrepancy Response Policy and provide answers to questions from the Office of the Secretary, Congress and the general public. This report is effective upon promulgation of the Aids to Navigation Information System (ATONIS) Manual (COMDTINST M16500.15).
- | 7. Annual ATONIS Discrepancy Report (RCS-G-NSR-15427A). This report provides Headquarters with an annual data dump (electronically stored files) of the District Discrepancy Table. The data will be used to analyze the Discrepancy Response Policy and to support the Planning, Programming and Budgeting System process for the SRA program. This report is effective upon promulgation of the Aids to Navigation Information System (ATONIS) Manual (COMDTINST M16500.15).

| E. Charges for Coast Guard Aids to Navigation Work.

- | 1. General. when the Coast Guard performs aids to navigation work for any other agency, person or corporation, including the marking of sunken wrecks or other obstructions such as artificial reefs, charges for such work shall be invoiced to the person(s) responsible in accordance with 33CFR74. Individual and private corporations shall be billed every three (3) months or when charges accrue in the amount of \$100.00. Federal agencies shall be billed at least once every six(6) months. Receipts shall be deposited in accordance with the Comptroller Manual.

E. 2. Charges For Wreck Marking.

a. Charges for the establishment, maintenance and discontinuance of markings for a sunken wreck or other obstruction shall be invoiced to the owner from the date of marking until the date of abandonment as established by the provisions in Chapter 6.

b. The cost of establishing and maintaining aids to navigation to mark legally abandoned sunken wrecks or other obstructions is absorbed by the Coast Guard. The Corps of Engineers shall not be billed for any charges incident to such work.

c. In those cases where reimbursement is to be made to the Coast Guard, charges shall be billed as directed by 33CFR74. If the work is performed by contract, the actual cost to the Coast Guard shall be billed. If the owner refuses to pay, the claim of the U.S. Government against the owner shall be referred to the district legal officer as set forth in the Claims Manual, COMDTINST M5890.7.

3. Charges for Destroyed Or Damaged Aids. Claims against persons responsible for damaging or destroying Coast Guard Aids to Navigation are explained in 33CFR70. Charges for aids to navigation and vessel time are published in COMDTNOTE 7310.

F. Reports from Field Units.

1. Solar Power Service Report (CG-5728).

a. Headquarters (G-ECV-3) uses Solar Power Service Report (SPSR) data to assess overall performance of solar power systems. SPSRs also transmit data necessary to monitor and evaluate the number of installations, component reliability, overall discrepancy rate, geographic and seasonal performance, and the effect of environmental factors.

b. The ATON servicing unit shall complete a SPSR and mail it to Commandant (G-ECV-3C) when an aid is converted to solar power, established as a solar aid, recharged, or when a solar system component fails. Do not forward SPSRs for routine annual servicing.

c. Unit Commanding Officers/Officers in charge shall review completed forms for content and accuracy prior to submission.

- | F. 1. d. The report requirement also applies to commercially
| serviced aids. The responsible district (oan) shall
| either prepare SPSRs or review contractorts reports
| for content and accuracy before submission.

- | e. SPSR (CG-5728) is available for free-issue under
| SN 7530-01-GF3-0830 from Supply Center Brooklyn.

- | f. SPSRs May be mailed individually, but at a minimum
| shall be submitted by the 10th of each month covering
| the preceding month's activities.

SOLAR POWER SERVICE REPORT FORM (CG-5728) INSTRUCTIONS

SOLAR POWER SERVICE REPORT FORM (CG-5728) INSTRUCTIONS

SOLAR POWER SERVICE REPORT						
COMMANDANT (G-ECV-3C)				PHONE: (202) 267-1106 (FTS)		
Unit Name (1)		OPFAC No. (2)		Phone No. (3)		
Aid Name (4)		LLNR/Mile (5)		Date of Visit (6)		
COMPONENT	QTY	TYPE (8)	INST	MISS	MALF	REPL
PANEL	(7)	10W 20W 35W	(9)	(10)	(11)	(12)
BATTERY		DEL. ABS EXIDE				
INSTALLATION KIT						
OTHER						
REASON FOR FAILURE: (14)			CORRECTIVE ACTION: REPLACED SERVICED			
COLLISION/KNOCKDOWN THEFT VANDALISM			REMOVED CORROSION OR SHADOWING (15)			
ENVIRONMENTAL SHADOWING CORROSION			Other (Specify) _____			
GLAND FLASHER PHOTORESISTOR			REMARKS: (16)			
PERSONNEL ERROR OTHER _____						
UNKNOWN			NAME _____ (17) RATE/RANK _____			
For Recharges: Battery removed was in service ___ months. (18)						
For Conversions: (19) A-H Primary Battery replaced which was on a ___ month recharge schedule.						
Faulty component manufactured by (20) _____, type _____, lot no./date/identifier _____						

DEPT. OF TRANSP., USCG, CG-5728 (8-88) ORIGINAL - Unit Copy

Item number:

1. Unit name.
2. Complete OPFAC.
3. FTS phone number or commercial number with area code.
4. Aid name.
5. Light List or rnllc markcr number.
6. Date of visit requiring this report.
7. Quantity of solar panels, installation kits or other equipment involved. Report batteries in 12-volt, 100 ampere-hour units (i.e., list two 6 volt Exide batteries as one battery).
8. Circle appropriate size or type of equipment, or fill in space provided for special applications.
9. List the number of items installed during this visit.
10. List the number of items found missing during this visit.
11. List the number of items found to be not working properly during this visit.
12. List the number of items replaced during this visit.
13. Place an "X" in the appropriate space:
 Establishment - A solar-powered aid is deployed where no aid was previously located.
 Conversion - An aid previously powered by primary batteries or commercial cable is converted to solar power.
 Recharge - A solar battery is replaced upon expiration of its designated service interval.
 Discrepancy - Any solar system component fails.
14. Circle or write in the cause(s) of system/item failure.
15. Circle or write in nature of corrective action taken, if any.
16. Provide any additional information you feel may be useful in better understanding this report.
17. Provide the name and rate/rank of individual to contact should additional information be necessary.
18. List the number of months the old battery was actually in service.
19. For conversions only: Provide the size and recharge schedule of the primary battery rack which was replaced by solar batteries.
20. List information for any AtoN equipment found defective during the visit.

Figure 2- 1

CHAPTER 3. ESTABLISHMENT, REVIEW, AND MODIFICATION OF COAST GUARD AIDS TO NAVIGATION SYSTEMM

A. General.

1. Primary Responsibility. The district commander has the primary responsibility for the established, review, and modification of aids to navigation. Requests for aids or aid systems may be initiated by user groups or the district commander as a result of an analysis of the need for aids to navigation within the district. The following discussion, policies, and procedures apply equally to the establishment, review, or modification of an aids to navigation system or of individual aids within a system.
2. Governing Policies.
 - a. Overview.
 - (1) Coast Guard aids to navigation are established, insofar as is practicable within the limitations of the lateral system, to mark channels and other areas of "safe water." In those areas which have rocks and shoals scattered throughout, the marking of safe water may of necessity be the marking of the dangers. Where several channels, equally accessible and of similar size and depth, exist in the same area, special care must be exercised to avoid the placement of aids where they might mislead the mariner.
 - (2) Coast Guard aids are used to mark pierheads belonging to the United States on the Great Lakes.
 - (3) Coast Guard aids to navigation are used to mark sunken wrecks (see Chapter 6).
 - (4) Aids may be established on the Outer Continental Shelf if the benefits to be derived therefrom warrant the expenditure involved.
 - (5) The following situations should be avoided less specifically warranted by unusual circumstances:
 - (a) Mixing Federal and private aids. This applies primarily to the marking of channels and should not be construed to prohibit the established of private aids necessary to mark bridges, pierheads, structures, marine sites, submerged structures, wrecks, marinas, etc.
 - (b) Serving the interest of only one party or small group.

- A. 2. a. (5) (c) Establishing aids in areas not properly charted or where they would invite the inexperienced to attempt a passage which would still be dangerous in spite of the aids.
- (d) Marking shallow, trustable waterways used only for convenience rather than necessity, unless they are maintained by the Corps of Engineers. If such a waterway has only a small amount of traffic, private aids may be more appropriate.
- (e) Marking narrow or shallow channels where a well defined channel existing nearby is already marked by Coast Guard aids.
- (f) Showing the location of fishing grounds in which no menace to the mariner exists.
- (g) Indicating a bifurcation unless both channels are marked by Coast Guard aids or the unmarked channel is a safe, natural channel. A junction is usually not indicated if one channel is marked by the Coast Guard and the other by private aids.
- (h) Marking areas that are not charted.
- (6) The lack of facilities to establish aids in an area where they may be justified does not relieve the Coast Guard of the responsibility to do so.

b. Aids For The Armed Forces

- (1) Requests from the other Armed Forces for aids to navigation are considered along with requests from other parties with priorities among projects assigned on the basis of individual justifications.
- (2) Coast Guard funds will not be expended for aids to navigation projects simply because they have been requested by the other Armed Forces. However, every effort will be made to budget for such aids once a need is established.
- (3) In every case, the requesting agency will be advised of the estimated date of establishment or such other action proposed.
- (4) When the Coast Ord is unable to immediately establish aids for the other Armed Forces using Coast Guard funds the action to be taken will depend upon the other services ability to transfer the necessary funds (See 33 CFR 74.05).

A. 2. c. Aids For Other Federal Agencies

- (1) The Coast Guard marks areas for special purposes, including properly designated anchorage, quarantine, danger, restricted, and prohibited areas upon request of the agency having jurisdiction for establishing the limits of those areas.
- (2) No aids shall be established until areas are specifically designated for such purposes by the Coast Guard, the Surgeon General, or the Secretary of the Army, as appropriate.

d. Aids For Marine Parades And Regattas

- (1) Coast Guard aids may be established to delineate a race course in order to assist in observance and enforcement of the regatta regulation of 33 CFR 100.01, but cannot be justified on the basis of convenience or savings of expense to the private parties or municipal government involved in the event.
- (2) Aids to navigation established in connection with marine parades and regattas are provided for the safety of navigation. These aids shall be established only for the duration of water events which are regulated by the Coast Guard. (See 33 CFR 62.01-35).
- (3) Aids which delineate a race course solely for the convenience of such parties shall be treated as temporary private aids to navigation. Procedures for requesting and using these aids are explained in NST 5903 series.

e. Marking of Marine Construction Sites.

- (1) The Coast Guard regulates the marking of channel approaches and restricted areas caused by tunnel or bridge construction. The type and number of aids used to mark such areas are to be determined by the district er on the basis of operational need.
- (2) In no case should Coast Guard aids substitute for private aids which can be established on the bridge and/or tunnel structures

f. Privately Dredged And Maintained Channels Marked By Federal Aids

- (1) Privately dredged and maintained channels may be marked by Coast Guard aids if the public benefit in terms of safety and economic gain to the coremmiry warrants the expenditure involved.

- A. 2. f. (2) Federal aids marking private channels must be justified using the criteria set forth in the following sections of this chapter.
- (3) Aids should be discontinued if the channel becomes unstable or inadequately maintained or when marking costs becomes disproportionate to user benefits. It is expected that this possibility of discontinuance will encourage the adequate maintenance of federally marked private channels.
- (4) Where available funds do not permit marking of all qualified channels, preference shall be given to those maintained by public agencies (including states, cities, port authorities, etc.)
- (5) Channels leading to areas open to general commerce such as port authority or commercial terminals, municipal or private marinas, etc., may be eligible for Coast Guard marking. The imposition of dockage charges or other fees will not disqualify an otherwise eligible channel from federal marking.

B. Processes Governing Establishment Of An Aids To Navigation System.

- 1. General. An aid to navigation system must remain within the policies set forth in Section A-2 while accomplishing the program objective of providing for safe and economic movement of commercial traffic. Therefore, the establishment of an aid to navigation system requires and is greatly aided by review of criteria in three critical areas. These areas are:
 - a. Initial justification
 - b. System benefit analysis
 - c. System type selection
- 2. Initial Jutification. Initial justification of an aid to navigation system involves identification of authority to establish an aid system and an evaluation of criteria.
 - a. Basic Authority
 - (1) In the act establishing the Department of Transportation (80 USC 931), the Congressional declaration of purse is stated as: "...development of national transportation policies and programs conducive to the provision of safe, fast, efficient, and convenient transportation at the lowest cost consistent therewith and with other national objectives, including the efficient utilization and

- B. 2. a. (1) (Cont.) conservation of the Nation's resources." The Congressional statement further states that the purpose of the act is "...to develop and recommend ... national transportation policies and programs with full and appropriate consideration of the needs of the public, users, carriers, industry, labor, and the national defense."
- (2) The Coast Guard has authority (14 USC 81) to establish aids to navigation in the following areas:
- (a) The United States.
 - (b) The waters above the continental shelf.
 - (c) The territories and possessions of the United States.
 - (d) The Trust Territory of the Pacific Islands.
 - (e) Beyond the territorial jurisdiction of the United States at places where naval or military bases of the United States are or may be located.
- b. Establishment Criteria. The basic criteria for the establishment of aids to navigation are primarily directed toward facilitation of marine transportation. Provisions for safety, speed, efficiency and convenience are the areas to be considered. Specific criteria for the development, establishment, maintenance and operation of aids to navigation must consider the following:
- (1) promotion of safety
 - (2) requirement of National Defense
 - (3) aiding navigation
 - (4) prevention of disasters
 - (5) prevention of collisions
 - (6) prevention of wrecks
 - (7) serving the needs of commerce
 - (8) amount and nature of the traffic
 - (9) justification in terms of public benefit

B. 2. b. (10) preservation of natural resources.

3. System Benefit Analysis.

a. Response To User Needs

- (1) In order to justify the establishment of an aid to navigation system it must be shown that the system will result in benefits that will justify the costs involved in establishing, operating, and maintaining the system. It must be shown that there is a valid need for this system and that the establishment of the system will satisfy these needs.
- (2) Aids to navigation are established specifically to enable the mariner to transit an area safely and rapidly, while avoidin groundings, obstructions to navigation, and collisions with other vessels. Therefore, to satisfy the information requirement of the user, a system of aids to navigation must:
 - (a) Be available to the mariner at the time it is needed.
 - (b) Provide the mariner with information that will:
 1. furnish timely warning of danger from channel limits and fixed obstructions to navigation.
 2. enable the mariner to determine his position within the channel, relative to fixed obstructions to navigation, and relative to other vessels.
 3. enable a safe course for the vessel to be determined.

b. Validation Of User Needs

- (1) The necessity (or justification) for a system of aids to navigation must be validated. This requirement is closely related to the benefits to be derived from responding to the need. If the expression of need cannot be justified by benefit analysis it mst be concluded that a requirement to respond to an expressed need does not exist.
- (2) The first step in evaluating expressed user needs for aids to navigation is to identify the characteristics of the user. To prevent undue proliferation of different type of subsystems, each directed toward satisfying the needs of a specific group, it is necessary to clearly define all categories of users

- B. 3. b. (2) (Cont.) who will employ the system. To minimize unnecessary duplication of response, the needs of the entire spectrum of users must be considered at the same time. In this analysis the needs of the following groups must be considered:
- (a) International shipping
 - (b) Coast-wise trade
 - (c) Inland waterway trade
 - (d) Intra-harbor traffic (tugs, ferries, small commercial craft, etc.)
 - (e) Fishing industry
 - (f) Pleasure boating
 - (g) Special operations (survey, oceanographic, search and rescue, etc.)
 - (h) Vessels of very large size
 - (i) High speed vessels (hydrofoils, air cushion vehicles, etc.)
 - (j) Submersibles
- (3) The operations in which the above user groups engage can usually be categorized into the following types:
- (a) Transoceanic
 - (b) Coastal (port to port)
 - (c) Transit of harbors, internal waters and canals
 - (d) Intra-harbor
 - (e) Lake navigation
 - (f) Casual and essentially undirected activities, such as pleasure boating, sport fishing, etc.
 - (g) Special operations
- (4) Needs of the user must also be defined in light of the various environments in which the user will be operating, i.e.:
- (a) Varying weather and visibility

- B.3.b.
- (4) (b) Varying channel lengths and widths
 - (c) Nature of the hazards beyond the channel limits
 - (d) Delay in transit
 - (e) Traffic density
 - (f) Traffic patterns
 - (g) Ice conditions
 - (h) Channel stability
- (5) Viewing needs in terms of the individual types of users, the categories of operations in which they are involved, and the environmental conditions under which they operate, will ensure that all aspects of the situation are thoroughly investigated. Needs for specific services however, vary widely among users in terms of user capabilities. These needs must be clearly defined within the following areas.
- (a) The position accuracy needed in different environments and under different types of operations.
 - (a) The time intervals between acquisition of position information.
 - (c) The amount of time required from receipt of information until the user can determine this position.
 - (d) The method of presentation of position information to the user.
 - (e) Geographic coverage needed.
 - (f) The size, weight, and power required of any receiving equipment.
 - (g) The cost of required receiving equipment.
 - (h) The limitations of user personnel in terms of knowledge and experience.
 - (i) The reliability of the system.
 - (j) The maneuvering capability of the user in regard to vessel responsiveness and man 1 constraints.

- B.3.b. (6) It must be recognized that there is a certain level of navigation expertise that has a bearing on user needs for aids to navigation. Unless these levels are observed even the most extensive system that could be developed would be unable to provide assurance of avoiding accidents and disasters. Some of these are:
- (a) Conforming to accepted navigation procedures.
 - (b) Conformance to applicable rules of the road.
 - (c) Conformance to local regulations and traditions.
 - (d) Basic knowledge of the use of charts and light lists.
 - (e) Basic knowledge of the meaning of aids to navigation signals (color, shape, etc.)

c. Types of Benefits,

- (1) Economic benefits: Ensure a user's being able to proceed on a personal schedule without delay caused by hydrographic or weather conditions and traffic congestion.
- (2) Safe benefits: Ensure a user will be able to operate with my danger of grounding and collision with obstructions and other vessels.
- (3) Convenience benefits: Ensure that the above users, as well as users that are not engaged in economic endeavors, will be able to proceed without unnecessary inconvenience or delays and inability to operate due to hydrographic or weather conditions.

d. Evaluation Of Benefits.

- (1) Identification and, where possible, quantification of the above and additional benefits must consider such factors as:
 - (a) Number of vessels transiting an area per unit of time.
 - (b) Tonnage of vessels transiting the area.
 - (c) Value of the cargo transiting the area.
 - (d) Nature of the cargo transiting the area.
 - (e) Level of economic activity in an area.

- B.3.d.(1)
- (f) The number of passages through and within an area,
 - (g) Pleasure boating activity.
 - (h) Fishing activity.
 - (i) Number and size of local vessels.
 - (j) Permanence of the traffic.
 - (k) Environmental impact.
- (2) The evaluation of benefits for economic efficiency will not be considered in the established of aids to navigation required to serve the needs of the armed forces, other federal agencies or the marking of quarantine and restricted areas, etc. The established criteria for aids in these categories is defined by law.
- (3) When evaluating the benefits to be derived from an aid to navigation system, answers to the following questions must be obtained:
- (a) In the absence of an aid to navigation system what specific limitations are imposed and what are their causes?
 - (b) Is the limitation generally applicable to all users in all areas or is it purely a local problem confined to a specific geographic area or particular category of users?
 - (c) How would response to this need reduce user costs?
 - (d) What would be the result if a means of satisfying the need is not provided by the Federal government?
 - (e) What are the alternatives to Coast Guard response?
- e. Benefits Difficult To Quantify. When evaluating the benefits that would accrue from an aids to navigation system, or improvements thereto, many benefits may be described in quantitative terms such as those directly relating to economic improvement, increase in speed, and reduction of delay for vessels engaged in commerce. However, there are many other benefits which are difficult, if not impossible to quantify. Benefits such as safety, prevention of pollution, avoidance of delay caused by blocking of harbors, and benefits to recreation

B.3.e(Cont.) are examples of these. Such benefits may, in many cases, be the primary reason for the established of aid to navigation systems or changes thereto. These benefits shall be given equal consideration with those which can be readily quantified.

f. Weighting Benefits Vs Costs.

(1) Before making a final decision on the established of an aid or an aid to navigation system, the system costs must be balanced against the estimated benefits to be gained. (See COMDTINST M16010.1, Appendix N).

(2) Costs to be considered in this evaluation are as follows:

(a) Whenever possible, annualized life cycle costs should be used, including all costs associated with research, development, testing and evaluation (RDT&E), initial investment, and annual operation and maintenance.

(b) The total annualized life cycle costs should then be divided by the expected life of the components of the system to develop an annualized life cycle cost basis for comparison of various alternatives.

(c) The costs shall include the cost of servicing and maintenance units as well as the costs directly attributable to the aids themselves.

g. Documenting Evaluations of User-Suggested Changes. When a final decision is made on a user's recommendation to establish, change, or disestablish an aid to navigation or system of aids; the rationale or justification for the decision must be documented. Where a change is determined to be in order, full justification shall be provided on the Aids to navigation Operation Request (CG-3213). If a decision is made that no change is needed, the documented record of the investigation and rationale shall be attached to the request and filed with it. In either case, the justification shall be as quantified as possible, and should address the criteria outlined in the preceding sections. Subpart 62.10 of 33 CFR provides guidelines for making relations and requests about aids to marine navigation. These guidelines, which should be published quarterly in the Local Notice to Mariners, should be helpful to users by identifying the information required for a complete evaluation of the request. Refer to Chapter 12 of this instruction for guidance on user participation in aids to navigation system design.

B. 4. System Type Selection.

a. Capabilities Of The System.

- (1) All available systems should be reviewed and those that have the capability of satisfying user needs should be considered for implementation. Candidate systems which might be considered are:
 - (a) Audio-visual piloting systems consisting of buoys, lights, daybeacons, fog signals, retro-reflective signals, etc.
 - (b) Radar piloting systems including radar reflectors and racons (coastal piloting only).
 - (c) Radio piloting system including piloting devices using radionavigation signals as external references.
 - (d) Harbor radar and advisory systems
- (2) In order to provide information needed by the mariner, informational signals must have specific capabilities. Either alone or in conjunction with other system signals they must be:
 - (a) available when needed by the mariner,
 - (b) readily identifiable, having distinctive, unambiguous characteristics.
- (3) The source of the signal should be located in a clearly defined position which must be indicated on reference charts.
- (4) Technically it is feasible to provide all required information through the use of radio navigation systems or radar systems or a combination of these. Constraints such as cost and space and power requirements on the user vessel place limitations on the use of these systems by certain categories of users. The existence of these constraints requires that the system providing audio-visual information be available to all users regardless of the availability of a radio navigation system. (Details on Radionavigation Aids can be found in Volume 4 of this manual.)
- (5) The primary limitation on the visual system is diminished effectiveness imposed by low visibility. To some extent the audio system can supplement the visual under low visibility conditions. However because of the lack of accurate directional capabili-

- B. 4. a. (5) (cont.) ties, the audio system is effective only as a warning device indicating proximity to navigational dangers.
- (6) The use of radar aboard vessels offers additional navigation capability without resorting to the use of other electronic systems. This is accomplished either through the use of reflected radar signals (primary radar system) or signals transmitted (secondary radar system) from the aid.

b. Characteristics of the System.

- (1) Types of visual, audio and radar signals:
- (a) Visual
 - 1 Daymarks
 - 2 Retroreflective signals
 - 3 Lights
 - (b) Audio: Various nondirectional sound producing devices.
 - (c) Radar
 - 1 Reflectors
 - 2 Radar beacon transponders (racons)
 - 3 Shore based radar systems
- (2) The characteristics of these types of aids in terms of availability are shown in Table 3-1, which also indicates the user equipment needed to make effective use of these aids.
- (3) A basic requirement of an effective aid to navigation is that it be readily identifiable. Table 3-1 indicates the methods by which various aids to navigation can present unique identification signals to the mariner. To obtain optimum use from these aids to navigation, the mariner must have:
- (a) Proper charts and appropriate light lists.
 - (b) Basic knowledge of the meaning of the various signal characteristics.

- B. 4. b. (4) Chapter 4 presents criteria for employment of various types of aids. Chapter 4 should be consulted to ensure that the individual aids intended for a system under consideration will be:
- (a) Standardized, insofar as is practicable.
 - (b) Established in sufficient numbers and spacing to provide desired system capabilities.
 - (c) Not unnecessarily duplicated.
- (5) From the capabilities listed in the previous paragraphs, a type of signal that will satisfy the needs of the mariner can be identified. Having identified the proper signal, the next step is to design the system so that the information is provided to the mariner at the time, and in the place required.

C. Review And Modification Of Aids To Navigation Systems.

1. District Review.

- | a. District commanders shall conduct initial WAMS analysis
| for all critical waterways which have not had one
| completed. Once the initial analysis is completed,
| each critical waterway will be scheduled for review at
| least once every five years. Waterways which need more
| frequent review due to significant user changes,
| waterway configuration changes or marine accidents may
| be reviewed on a more frequent basis at the discretion
| of the district commander. Non-critical waterways will
| be scheduled for review at the discretion of the
| district commander; but the scope of the documentation
| required is only enough to validate the non-critical
| designation. Initial analyses should be formatted in
| accordance with enclosure (5). District commanders
| approve all WAMS analysis. Forward a copy of all
| critical analyses and reviews to Commandant (G-NSR) and
| include a brief Executive Summary of the analysis and
| approved recommendations. Districts shall maintain a
| copy of all analyses and reviews. Each review will
| ensure that:
- (1) The aids are required as necessary elements in an aids to navigation system.
 - (2) Changes to augment and/or reduce aids are made when needed to conform to changes in hydrography and marine traffic.

- C. 1. a. (3) The aids conform to the criteria set forth in the foregoing sections of this chapter.
- (4) Individual aids as well as entire aid systems provide required operational characteristics as specified in Chapter 4.
- (5) Waterways are categorized into one or more of the following:
- (a) Militarily Critical Waterways: Militarily critical waterways include those which serve military or militarily essential facilities.
 - (b) Environmentally Critical Waterways: Waterways where a degradation of the aids to navigation system would present an unacceptable level of risk to general public safety because of the transport of hazardous materials or dangerous cargoes, as defined An 46CFR and 49CFR (such as LNG, chemicals, or explosives), through the waterway. Or, waterways where a degradation of the aids to navigation system would present an unacceptable level of risk to the environment.
 - (c) Navigationally Critical Waterways: Waterways where degradation of the aids to navigation system would result in an unacceptable level of risk of a marine accident, due to the physical characteristics of the waterway, difficult navigational conditions, aid establishment difficulties, or high aid discrepancy rates.
 - (d) Noncritical Wsterways: Waterways which serve commercial and recreational interests, where the disruption or degradation of an aid system, beyond the normal level of discrepancies, will not increase the risk from a marine accident to an unacceptable level.
- b. Should it appear that there are aids or aid systems which do not conform to the standards required by this chapter or Chapter 4, a project will be initiated for modifying these systems. Each project will be assigned a priority for accomplishment of required modifications.
- c. The district commander shall encourage district aids to navigation units to submit reports of unnecessary aids or aids which should be changed.

- C. 2. Public Reaction To Changes. Changes must not be withheld, or needless aids perpetuated, because of concern over possible public reaction. Proposed discontinuances or a reduction in numbers of aids which might be controversial should be discussed with interested user groups, and the Coast Guard's position carefully presented (See Chapter 12).
3. Commandant Support.
- a. The Commandant will strongly support all justified, reasonable requests to change or remove aids to improve the effectiveness and overall operating economy of the aids to navigation system.
 - b. The Commandant will particularly support requests for reduction in number or replacement with more effective aids in cases of:
 - (1) Aids previously established to meet requirements which no longer exist.
 - (2) Too many aids and structures in the same area having the effect of confusing the mariner.
4. Defining The Need For Increasing The Number Of Aids.
- a. The basic consideration in recommending or authorizing additional aids to navigation is to only furnish aids in areas where user needs are justified as necessary for safe navigation.
 - b. Justification for changes must follow the same criteria review outlined earlier in this chapter for establishing aids to navigation systems.
5. Temporary Changes.
- a. District commanders are authorized to temporarily change, establish, or discontinue an aid to navigation with the approximate duration of the temporary condition stated in the Local Notice to Mariners announcing the change.
 - b. Temporary changes to damaged, destroyed or missing aids are usually made with aids having lesser or different signal characteristics than the aid replaced. Temporary changes shall therefore not become permanent unless the district commander does, in fact, recognize that the replacement aid performs satisfactorily in lieu of the original aid.

- C. 5. c. To prevent temporary aids from becoming unintentionally permanent, with possible reduction of service to the user, the need for each temporary aid shall be reviewed each quarter.
- d. No temporary aid should remain on station longer than six months except for infrequent cases as justified by the district commander. In such cases, the district commander shall take action to:
 - (1) Restore the original aid; or
 - (2) Make the temporary aid permanent; or
 - (3) Discontinue both the temporary and permanent aid.
- e. District commanders will maintain a record of all temporary changes in effect and publish these changes in summary form in the first Local Notice to Mariners of each quarter.
- f. Temporary changes may be made for:
 - (1) dredging
 - (2) testing or evaluating new aids
 - (3) replacing a destroyed, missing, or damaged aid
 - (4) marking an obstruction or wreck
 - (5) other reasons within the definition of temporary change.
- g. Do not classify aids as temporary if they are only awaiting completion of a Form CG-3213 to become permanent.
- h. An Aid to Navigation Operation Request, Form CG-3213, is not necessary for a temporary change.

NUMBERED	DAY	NIGHT	GOOD VISIBILITY	POOR VISIBILITY	USER EQUIPMENT	COLOR	SHAPE	CODED
DAYMARK	X		X			X	X	X
RETRO- REFLECTOR	X	X	X		(light)			
LIGHT		X	X	X				
SOUND	X	X	X	X				
RADAR REFLECTOR	X	X	X	X	(radar)			
					Must re-			
					late to			
					surround-			
					ing			
RADAR TRANSPONDER	X	X	X	X	(radar)			
RADAR ADVISORY	X	X	X	X	(radio)			
					Vessel			
					identifi-			
					cation by			
					shore			
					station			

TABLE 3-1
AID SIGNAL AVAILABILITY AND IDENTIFICATION

CHAPTER 4. SHORT RANGE AID TO AVITION SYSTEMS-
DESCRIPTION AND DESIGN GUIDELINES

A. Introduction.

1. This chanter provides guidance on how to analyze a waterway's marking requirements and the configuration of its aids to navigation.
2. The guidelines presented here should not be considered strict rules but flexible constraints. The physical diversity of waterways dictates the need to temper any systematic analysis with plenty of common sense and on-scene evaluation.
3. Remember that aids only supplement natural and manmade landmarks, and those other environmental features which provide the marin with the cues needed to navigate. Consequently, existing geographic composition must be considered throughout the design process.
4. An additional source for design guidelines is the SRA System Design Manual for Restricted Waterways. It applies in narrow channels navigated by deep draft vessels. The design manual differs from this chapter in that it produces a quantitative measure of system uality, valuable for assessing the relative merits of competing aids to navigation configurations.
5. A glossary of terms pertinent to waterway design follows:
 - a. Waterway - A water area providing a means of transportation from one place to another, principally a water area providing a regular route for water traffic, such as a bay, channel, passage, river, or the regularly traveled parts of the open sea.
 - b. Mark - An artificial or natural object of easily recognizable shape or color, or both, situated in such a position that it may be identified on a chart or related to a known navigational instruction. An aid to navigation.
 - c. System of Aids - A group of interacting aids intended to collectively provide sufficient and timely information with which to safely navigate vessels within and through a waterway. For example, systems may range in size from all the Western Rivers to the waters serving a small fishing port; i.e., Sitka Harbor System.

- A. 5. d. Reliability - The probability an aid or system of aids performs its required functions under stated conditions for a specified period of time. Often expressed as a percentage.
- e. Availability (also technical availability) - The probability an aid or system of aids performs its required functions under stated conditions at any randomly chosen instant in time. Often expressed as a percentage.
- f. Operational Availability - The availability, to a mariner with at least a foot height of eye, of a specific aid at a specific distance. Example: The operational availability of a certain light, viewed from a distance of two miles, might be 65%. That is to say, based on historical transmissivity data, a mariner can see that aid at least two miles away 65% of the time.
- g. Availability Standard - The minimum operational availability goal.
- h. Redundancy - A desirable attribute of an aid system intended to prevent the failure of one aid from significantly degrading the effectiveness of the entire system.
- i. Junction - The point where a channel divides when proceeding seaward. The place where a tributary departs from the main stream.
- j. Bifurcation - The point where a channel divides when proceeding from seaward. The place where two tributaries meet.
- k. Dead Weight Tonnage (DWT) - The capacity in long tons of cargo, passengers, fuel stores, etc. of a vessel. The difference between loaded and light displacement tonnage.
- l. Cutoff Turn - A type of dredged channel configuration where the triangular area formed by slicing off the inside corner or apex of a turn is incorporated into the channel, thus effectively increasing the available maneuvering room.
- m. Quarterline - A line parallel to the channel centerline, equidistant from the centerline and the channel edge.

- A. 5. n. Conventional Direction of Buoyage - Some reference direction for defining the lateral and numbering significance of an aid system. In U.S. waters, the direction of flood current provides the most common indication. For coastal marking, the conventional direction of buoyage is southerly along the East coast, northerly and westerly along the Gulf coast and northerly along the West coast.
- o. Exposed Locations - Offshore areas which are not sheltered by adjacent land and thus may be exposed to extreme weather and sea conditions.
- p. Semi-Exposed Locations - Offshore or inshore areas which may be sheltered by adjacent land and are exposed to lesser extremes of weather and sea conditions.
- q. Protected Locations - Inshore areas which are not exposed to extremes of weather and sea conditions.
- r. Operational Range - The distance at which a light is required to be seen to meet the user requirements.
- s. Luminous Range - The distance at which a light is visible based on the atmospheric (transmissivity) of the area.
- t. Direct Monitoring - A person assigned to keep watch over an aid's performance; requires a 24 hour watch within sight of the major aid.
- u. Link Monitoring - Remote monitoring by means of electronic data gathering and reported via radio and/or landline to a master monitor location.
- v. Mariner Monitoring - Passing ships' masters or pilots report aid failures when observed.

B. Short Range Aid Marking Systems.

1. The U.S. Marking System. The U.S. marking system is a predominantly lateral system which conforms to the Region B requirements of the IALA Maritime Buoyage System. The below color schemes for lateral marks apply to IALA Region B. Marks located in the IALA Region A exhibit reversed color significance: port hand marks will be red when following the Conventional Direction of Buoyage, and starboard hand marks will be green. The meaning of daymark and buoy shapes is identical in both regions. Specific marking and signal requirements can be found in the Aids to Navigation Manual-Technical (COMDTINST M16500.3), the IALA Maritime Buoyage System Implementation (COMDTINST 16501.4 series), and Section E.2. of this chapter.

a. Types of Marks.

(1) Lateral: Lateral marks define the port and starboard sides of a route to be followed. They may be either beacons or buoys. Their most frequent use is to mark the sides of channels; however, they may be used individually to mark obstructions outside of clearly defined channels. Lateral marks include sidemarks and preferred channel marks. Sidemarks are not always placed directly on a channel edge and may be positioned outside the channel as indicated on charts and nautical publications. Port hand marks indicate the left side of channels when proceeding in the Conventional Direction of Buoyage: Beacons have green square daymarks, while buoys are green can or pillar buoys. Green lights of various rhythms are used on port hand marks. Starboard hand marks indicate the right side of channels when proceeding in the Conventional Direction of Buoyage: Beacons have red triangular daymarks, while buoys are red nun or pillar buoys. Red lights of various rhythms are used on starboard hand marks. Preferred channel marks indicate channel Junctions or bifurcations and may also mark wrecks or obstructions. Preferred channel marks have red and green horizontal bands with the color of the topmost band indicating the preferred channel. Buoy or daybeacon shape and the color of the light is determined by the color of the uppermost band. Preferred channel marks display a composite group flashing light rhythm.

- B. 1. a. (2) Isolated Danger: These marks are erected on, moored over, or placed immediately adjacent to an isolated danger which maybe passed on all sides by system users. This mark will be incorporated into the U.S. system in 1990 after all black and red horizontally banded, preferred channel marks have been changed to green and red horizontally banded, preferred channel marks. These marks will be colored black with one or more broad horizontal red bands and will be equipped with a topmark of two black spheres, one above the other. If lighted, these marks display a white group flashing two light with a period of five seconds.
- (3) Safe Water: Safe water marks indicate that there is navigable water all around the mark. These mark fairways, mid-channels, and offshore approach points, and have unobstructed water all around. Safe water marks have red and white vertical stripes. Beacons have an octagonal aymark; buoys are spherical or display a red spherical topmark. They can be used by a mariner transiting offshore waters to identify the proximity of an intended landfall. When lighted, safe water marks show a white Morse Code "A" rhythm.
- (4) Special: Special marks are not primarily intended to assist safe navigation, but to indicate special areas or features referred to in charts or other nautical publications. They may be used, for example, to mark anchorages, cable or pipeline areas, traffic separation schemes, military exercise zones, ocean data acquisition systems, etc. Special marks are colored solid yellow, and show yellow lights with a slow-flashing rhythm preferred.

- B. 1. (a) (5) Information and Regulatory:
Information and Regulatory Marks are used to alert the mariner to various warnings or regulatory matters. These marks have orange geometric shapes against a white background. When lighted, these marks display a white light with any rhythm not reserved for other types of aids. The meanings associated with the orange shapes are as follows:
- a. A vertical open-faced diamond signifies danger.
 - b. A vertical diamond shade having a cross centered within indicates that vessels are excluded from the marked area.
 - c. A circular shape indicates that certain operating restrictions are in effect within the marked area.
 - d. A square or rectangular shape will contain directions or instructions lettered within the shape.
- (6) Mooring Buoys: Mooring buoys are white with a blue horizontal band. This distinctive color scheme facilitates identification and avoids confusion with aids to navigation. When lighted, these marks display a white light with any rhythm not reserved for other types of aids.
- (7) Cardinal Marks: These marks indicate, in the cardinal points of the compass, the direction of good water from the aid. At the present time, they are not used in the U.S. marking system.
- (8) Lighthouses (substantial structures, and/or structures in prominent positions), large navigational buoys, ranges, sector lights, and crossing marks do not fall under the IALA agreement. While their signal characteristics are largely discretionary, these aids should be marked to provide maximum information to the mariner while avoiding conflicts with nearby aids displaying IALA markings.

| B. 2. Intracoastal Waterway(ICW) Marking System. We maintain
| this aid system along the Atlantic and Gulf Intracoastal
| waterway. The ATON Manual - Technical (COMDTINST
| M16500.3) details marking specifications. Procedures for
| using this system are outlined in paragraph E.2.f.(3) of
| this chapter. The ICW differs from the U.S. marking
| system in that:

- | a. ICW aids display a distinctive yellow symbol
| according to aid type and function.
- | b. Distance Markers may be used. Distance indicated is
| from a designated point established by each district.

| 3. Western Rivers Marking System. The marking system used
| on the Western Rivers differs from the U.S. system in
| that:

- | a. Buoys and shore structures are not numbered.
- | b. Numbers on shore structures do not have odd/even
| lateral significance but, rather, indicate mileage
| from a designated point, except on the Ohio River
| where mileage is measured from Pittsburgh, PA.
- | c. Diamond-shaped crossing daymarks, solid red or solid
| green as appropriate, are used instead of triangular
| or square lateral daymarks where the river channel
| crosses from one bank to the other.
- | d. Lights on the right descending bank show single
| flashing rhythms and are green or white. Lights on
| the left descending bank show "group-flashing-two"
| rhythms and are red or white.
- | e. In pooled waters (behind dams), buoys should mark the
| nine-foot contour for normal pool elevations.
- | f. In unstable waters (free-flowing rivers), buoys
| should mark the project depth for the prevailing
| river stage. Buoys may be set in deeper water when a
| drop in water level is predicted. Buoys should not
| normally be set, however, in water depths less than
| the project depth when a rise in water level is
| predicted.

- B.
3. g. The conventional direction of buoyage, for the purpose of installing the proper aid signals, is upstream. Local terminology, however, refers to the "left" and "right" banks viewed from a vessel proceeding downstream.
 - h. Constantly changing river conditions prevent strict design guidelines. Unit commanding officers and officers-in-charge must use their best Judgment concerning the number and placement of aids.
 - i. Isolated danger marks are not used.
4. Uniform State Waterway Marking System (USWMS).
 - a. The USWMS was developed jointly by the Coast Guard and state boating administrators to meet the unique requirements of small boat operators navigating in state-marked waters. It may be used only in those navigable waters of the U.S. which have been designated as State waters for private aids to navigation and in those internal waters which are not navigable waters of the U.S. The USWMS consists of:
 - (1) A system of regulatory markers to indicate to a vessel operator the existence of dangerous areas as well as those which are restricted or controlled, such as speed zones and areas dedicated to a particular use, or to provide general information and directions;
 - (2) A system of aids to navigation to mark channels and obstructions; and
 - (3) A distinctive color scheme for mooring buoys.
 - b. A complete description of the USWMS is contained in 33 CFR 66.10.

B. 5. Private Aids to Navigation.

- a. Private aids to navigation are authorized by the cognizant district commander. Inspection of private aids are normally accomplished by the Coast Guard for Class I aids. Class II and III private aids are verified by the Coast Guard or Coast Guard Auxiliary. More information about the private aid process is contained in chapter 5 of this manual.
- b. Private aids may, in some instances, comprise an entire aid system. Taconite Harbor on Lake Superior and Delaware City in the Delaware River are two examples of private aid systems.
- c. A more common use of private aids, however, is as an extension to the Federal aid system. Private aids are used to extend a particular Federal aid system to mark obstructions, pierheads, and channels that may be of use to a single owner or a small user group.
- d. The characteristics of a private aid to navigation shall conform to the United States Aids to Navigation System.

C. Aid to Navigation System Elements and Their Use.

1. Major Lights. A major light is a light of moderate to high candlepower and reliability exhibited from a fixed structure. It may or may not have colored sectors with higher intensities. Major lights have an availability standard of 90% and fall into two broad categories:
 - a. Coastal or seacoast lights assist vessels either during coastal navigation or when making a landfall. The following standards apply to major lights:
 - (1) Where practical, existing lights should be of sufficient intensity, so that 90% of the time, a mariner transiting the established coastal route can see at least one. This standard is not intended to encourage establishment of new major lights, but rather to help prevent a degradation of signals that remain important to many mariners.

- C. 1. a. (2) As a landfall light, it should be intense enough to be visible 90% of the time, based on local visibility conditions, at a sufficient range to supply needed navigation information for the transition into waters marked by the short range system.
- (3) In those situations where an operational range has not been determined, a minimum standard is to provide a luminous range equal to the geographic range of the light for a mariner with a 15-foot height of eye. This standard also is not intended to require modifications to existing optical equipment, but is a threshold for future modifications and design of major lights where the operational range has not been determined. In some areas attaining this standard may not be possible because of poor transmissivity or severe background lighting. In such cases, attaining the highest operational availability with current equipment is acceptable.
- (4) In all cases, the operational range, as determined through a WAMS analysis, will provide information for selecting the proper equipment.
- b. Inland maor lights are found in bays, sounds, and coastal approaches. They can serve a variety of functions including use as a leading light, obstruction mark, sector light, or simply a reference mark from which to obtain a needed visual bearing or radar range. They too should have sufficient intensity so they are visible over their usable range 90% of the nights of the year when local visibility conditions are considered.
- c. Major aids are monitored and controlled for two reasons:
 - (1) to be able to inform the mariner of a change in the advertised characteristic of an aid, and
 - (2) to promptly dispatch repair personnel to correct a discrepancy.

- | C. 1. d. The following items are to be considered in each
| monitor decision at a major aid:
- | (1) The criticality of the aid, and the need for
| prompt notification to the mariner of any aid
| discrepancy.
 - | (2) The availability of other short range aids to
| navigation in the vicinity.
 - | (3) The frequency of transits, and the nature and
| cargoes of the user groups.
 - | (4) The ability, or inability, of the mariner to
| communicate information concerning a
| discrepancy.
 - | (5) The electronic navigation equipment in general
| use by the marine public using the major aid.
 - | (6) The reliability of installed signal equipment
| and power systems.
 - | (7) The remoteness of the aid and the accessibility
| by the servicing unit.
- | e. The operational decision to monitor should first
| resolve the availability of direct and mariner
| monitoring. The proximity of an aid to an
| established Coast Guard operational unit will
| generally decrease the need for link monitoring
| equipment. If either direct or mariner monitoring
| are not sufficient, link monitoring should be
| considered. The Category Selection Aid, Figure 1-1
| of the Automation Technical Guidelines (COMDTINST
| M16500.8), integrates the Waterways Analysis and
| Management System (WAMS) into the monitor decision.
- | f. The link monitor equipment master unit shall be
| located in a space continuously staffed by a live
| watch. The master unit may be located in another
| space if a remote alarm is maintained to a watched
| space. A link monitor system which does not directly
| interface with a live watch defeats the purpose of
| monitoring. Furthermore, no watch shall be
| established to directly monitor an aid or link
| monitor system.

- |C.1. g. The Aid Control and Monitor System (ACMS), USQ-91(V),
| is the service-wide standard monitor and control
| equipment and is the only monitor equipment which is
| centrally supported. All other link monitor and
| control systems shall be scheduled for replacement by
| ACMS.
- h. The use of major sector lights has been an evolutionary process, with valuable cues as to vessel position either across or along track being provided by the light colors. Any changes to such aids should be carefully considered and discussed with all user groups.

2. Ranges.

- a. Ranges are pairs of beacons commonly located to define a line down the center of a channel. They are usually, but need not be, lighted. Range design is discussed in detail in the Range Design Manual (COMDTINST M16500.4).
- b. When possible, within the constraints imposed by the Range Design Manual, select range sites to:
- (1) Use existing structures such as lights, daybeacons, or bridges.
 - (2) Exploit shoal areas where shallow water depths will decrease structure construction costs.
 - (3) Access available commercial power.
- c. Each range provides a mariner with a given lateral sensitivity at a given distance from the range front light. This lateral sensitivity (K, or the K factor) is a measure of effectiveness for finding and maintaining track on the range axis. It is directly proportional to the range's ability to precisely define that axis. For example, with a low sensitivity range (K=1.0), the mariner would be less confident that he was actually on the centerline than he would be with a high sensitivity range (K=8.0).

- C. 2. d. The following general guidelines are provided for range usage:
- (1) Construction of a range for a track keeping region of a channel may permit aid spacing to be increased. See section E.2.e. on channel regions and aid spacing.
 - (2) Ranges on contiguous reaches are inferior to side marks in their ability to mark turns.
 - (3) A low sensitivity range which does not allow the mariner to recognize that a vessel is off centerline until the off-axis distance approaches 10% or more of the channel width may not be adequate.
 - (4) If maintaining a track on the quarterline is necessary due to a great deal of two-way traffic, upbound and downbound ranges may be needed. Quarterline ranges should be considered before the use of side ranges to mark the channel edge.

3. Beacons.

- a. Strictly defined, a beacon is any fixed aid to navigation. For our purposes, however, we take beacons to mean all minor lights, of relatively low candlepower, and daybeacons.
- b. Fixed aids provide immobile, stable signals. Floating aids do not. Beacons, therefore, are superior to floating aids in the signal quality they provide to the mariner.
- c. Beacons may be set back from the channel edge to protect them from damage. However, the mariner must be informed by notations on charts and in light lists of the distances involved. The utility of a beacon decreases as its distance from the channel edge increases. When beacons must be set back, the distance from the channel edge should remain constant within a waterway.
- d. Fixed aids are generally cheaper to maintain than floating aids with comparable signals.

C. 3. e. Lights or daybeacons are normally preferable to buoys when:

- (1) Annualized life cycle cost for the fixed aid is less than that for the floating aid. Structure costs become competitive when reasonably shallow depths border the channel.
- (2) Severe ice conditions do not routinely threaten the structure.
- (3) The aid station is not one frequently involved in marine collisions.
- (4) We have assurance of channel stability or continued maintenance from the Army Corps of Engineers.
- (5) Lack of horizontal control and alternate positioning methods make positioning the buoy difficult.

f. Articulated beacons appear to be fixed, but in actuality are moored to the bottom by a sinker. They remain afloat through use of a buoyant collar attached below the waterline. Articulated beacons are now deployed as prototype designs only.

4. Buoys.

- a. Buoys are unmanned, floating aids to navigation moored to the seabed. They may be lighted or unlighted.
- b. Use whatever size buoys are necessary to meet user needs. Consult the ATON Manual - Technical (COMDTINST M16500.3), Chapter 2, for the operational characteristics of all standard buoy types.
- c. Ensure buoy types correspond to the environmental location of the aid station; i.e., exposed, semi-exposed, or protected.
- d. Place buoys inside the channel edge, as near the channel edge as possible. For buoys marking obstructions, place buoys on the channel or navigable side of the obstruction.

C. 5. Large Navigational Buoys (LNBS).

- a. An LNB is an unmanned, floating aid to navigation equipped with signals comparable to those of a maor light.
- b. LNBS may be equipped with either an incandescent or flashtube light source. If a flash tube is used, an incandescent source must also be carried to enable the mariner to more easily obtain a bearing and improve depth perception upon approach to the LNB.
- c. Emergency lights will be carried on all LNBS. These lights shall exhibit the same color and rhythm as the mainlight, but at reduced intensity. They will be lighted in the event of a main light failure.

6. Racons.

- a. A racon is a radar beacon which produces a coded response, or radar paint, when triggered by a radar signal. They are normally operated in the frequency ranges of the X-band and S-band marine radars.
- b. Racons are becoming more and more prevalent. Their operation and use, described in Commandant's Instruction 16501.4 (series), is presently undergoing rapid evolutionary change. Eventually, all racon information will be incorporated in this manual.
- c. Racons provide radar enhancement, help improve aid identification, and help during the transition from ocean to inland navigation. This is accomplished by:
 - (1) Placing a racon on a prominent point of land to allow the mariner to make a positive identification of the point for a landfall.
 - (2) Placing a racon on an aid to assist the mariner in distinguishing that aid from other aids and vessels.
 - (3) Temporarily placing a racon on an aid that marks a new danger. Such a racon should be coded Delta (-..).
 - (4) Placing a racon on the center of the navigable span of a bridge when the bridge is a significant obstruction to navigation and the racon appreciably improves navigational safety.

C. 7. Sound Signals.

- a. A sound signal (fog signal) is a device which transmits sound, intended to provide information to mariners during periods of restricted visibility. The term also applies to the sound emitted by the device.
- b. Due to the inability of the human ear to accurately judge the direction of a sound source, these signals are limited to only one general use: the signal serves to warn mariners of the proximity of an obstruction.
- c. Although sound signals are valuable, mariners should not implicitly rely on them when navigating. They should be considered supplements to radar and radio-navigation aids for reduced visibility navigation.
- d. Sound signals are a source of noise pollution to non-mariners. Therefore, the provisions for considering the environmental impact of a proposed establishment or change, contained in COMDTINST 16575.1 series, must be followed.
- e. Continuously operating sound signals are preferable when the location is remote and the signal doesn't create a nuisance to nearby residents. The following methods of sound signal control have application where noise pollution is an issue:
 - (1) Manual Control. Live watches should not be maintained solely to control sound signals. Manual control by Coast Guard personnel or by personnel of a Federal, state, or local agency is acceptable, but only where an existing live watch is available to activate the device when necessitated by reduced visibility. Personnel from a state or local agency may control sound signals under an agreement for gratuitous services, worded to relieve the agency from liability.
 - (2) Remote Control. Remote control systems may be used for sound control. They may use radio links or telephone lines. The disadvantage of this type of control is the signal may be very remote from the person controlling it. Consequently, that person may be uncertain of weather conditions at the sound signal site.

- C. 7. e. (3) Fog Detector. Fog detectors are very convenient devices for controlling sound signal operation. They are particularly useful where a live watch could be reduced or a radio link to a remote station could be eliminated.
- (4) Baffles. Baffles may be used to reduce the sound pressure level (SPL) on the back side of fixed aids equipped with pure-tone signals. Commandant (G-ECV-3) can assist in determining the need for a baffle at a particular location.
- f. Standard fog signal characteristics listed in the ATON Manual - Technical (COMDTINST M16500.3), Chapter 7, should be used. The rhythm of one two-second blast every twenty seconds is reserved for private aid use.
- g. Fog signals available for use on floating aids consist of four basic types. These are gong, bell, whistle, and electronic horns. The first three are wave actuated and are consequently useful in exposed or semi-exposed environments. Electronic horns, being battery powered, are suitable for any environment. When using fog signals on buoys, the following guidelines apply:
- (1) Wave actuated signals should be used where environmental conditions permit.
 - (2) When two or more channels are in the same general area, such as near a Junction or bifurcation, use a different signal type for each waterway to aid in identification.
 - (3) Historically, mid-channels, fairways, and approaches have been marked with whistles. This marking should continue if a wave actuated whistle is available for the buoy body in use. If not, an electronic horn may be used.

- C. 7. g. (4) Previous guidance issued on fog signals attached lateral significance to the bell and gong signals. Since we discourage mariners from relying implicitly on fog signals, we should not encourage the use of fog signals as lateral aids. Placing gongs to port and bells to starboard may be a convenient method of waterway design, just as marking adjoining waterways with different signal types may be. However, placing reliance on the necessity to always leave a gong or bell to port or starboard should be discouraged.
- h. During periods of reduced visibility, small boats may have to rely exclusively on fog signals to return to port or find a haven.
- i. There is no longer a general requirement for sound signals with a range greater than two nautical miles. Any signals of greater range are considered non-standard and are not centrally supported.

D. General Design Considerations.

- 1. Until recently, mariners have used the radio aids to navigation systems and the short range systems in two distinct geographic areas. The short range system was needed and used close to shore and in restricted waterways. An offshore vessel was able to use the less accurate radio aids system. Today, however, with new low cost, high precision Lorán C receivers more readily available, these two areas are beginning to overlap. This is especially evident in those transitional areas where the mariner shifts from the low accuracy requirements of ocean navigation to the high accuracy needs of coastal and inshore piloting. As electronic aids continue to improve, their use will increase in areas where previously only shortrange aids afforded the necessary accuracy. This evolutionary change must be recognized and accounted for when conducting waterway analyses.
- 2. User Interface.
 - a. The criteria for aid establishment are discussed in Chapter 3, Section B. Meeting and riding with the users is one of the most important steps in waterway analysis, and should be done prior to any decision on aid location. Viewing the waterway from the user's

- D. 2. a. (cont) perspective is critical. Glaring deficiencies and redundancie maybe apparent from a user's view-point that are not readily apparent from the view-point of the Coast Guard servicing unit.
- b. The "wants" of the users must be carefully considered and evaluated by the waterway analyst, and then translated into user "needs".
- 3. Property.
 - a. Before establishing an aid, an easement must be obtained to ensure subsequent access.
 - b. Restrictions should be placed on the future use of property disposed of as excess to the needs of the Coast Guard if necessary to preserve the arc of visibility of an aid or the minimum distance at which it should be seen. Restrictions may also be needed if a fog signal's soundpressure levels might be offensive to prospective occupants.
- 4. Conditions.
 - a. The physical and environmental condition of a waterway, as well as the size of the vessels using the waterway, must be considered. The design of the waterway's aid system should deal with, but not necessarily be driven by, the worst conditions the largest vessel might encounter.
 - b. Vessel traffic data can be obtained from several sources. The local pilots and/or harbormaster may be able to provide it, or the data may be obtained from a local VTS. The Army Corps of Engineers Waterborne Commerce of the United States reports contain transit, tonnage, and commodity information. The four parameters of vessel size that need to be considered are length, beam, draft, and dead weight tonnage. Of these, research has shown dead weight tonnage to be the best predictor of vessel controllability.
 - c. The goal is to design aid systems for the largest vessel using the waterway. There may be cases where the largest vessel is significantly larger than the majority of the vessel population using the waterway.

- D. 4. c. (cont) Such a large vessel may also make infrequent transits of the waterway. In this situation, consideration should be given to other methods, besides aids to navigation, for helping ensure the safety of this vessel. Speed and visibility restrictions, escort vessels, and one-way traffic are some options that the COTP could invoke to reduce risk to an acceptable level without significantly altering the aid system when exceptionally large vessels transit the waterway.
- d. Physical conditions of the waterway must also be considered. When channels are narrow compared to the beam of the user, ranges may be essential for safe navigation. The bottom conditions and clearances may also mandate the use of particular aids.
- e. Environmental conditions are more difficult to address. The decision to mark for average or worst conditions, or something in between, cannot always be easily made. The following guidelines may be helpful:
- (1) The design should accommodate the maximum, or worst case, tidal current in the waterway.
 - (2) Reduced visibility due to haze and fog must be considered. Designing for worst case visibility is not practical. The goal, or availability standard, for minor aids is to provide a system based on an atmospheric transmissivity that is met or exceeded 80% of the time. The system of major lights should be designed on a transmissivity that is met or exceeded 90% of the time. Following the constraints in section E., these availability standards will help describe the necessary hardware combinations.
 - (3) In some areas attaining these availability standards may not be possible because of very poor transmissivity or severe background lighting. These occurrences should be infrequent. In such cases, attaining the highest operational availability with current equipment is acceptable.
 - (4) Aid types selected should be appropriate for the existing environmental category (exposed, semi-exposed, protected). The ATON Manual - Technical, COMDTINST M16500.3, lists the design

B. 4. b. (4) environment for all standard aid types. Section A.5. of this chapter defines the environmental category terms.

(5) The effects of ice during the winter and frequent heavy rain squalls during the summer also dictate aid mix. Unlighted buoys, which have a tendency to surface through the ice, may be necessary in the former case. Racons might prove useful in the latter case whonell but the strongest of radar signals might he covered by return from a heavy squall.

f. Due to the significant potential for loss of life caused by bridge allisions, approaches to bridges over the water must receive careful attention. This includes highway and railroad bridges over waterways marked with aids to navigation and over adjoining waters. The following guidelines may be helpful:

(1) Coordinate ATON system design with district bridge administration officials. Considerations include existing bridge marking Commandant (e.g. lighting, retro-reflective panels, racons) U.S. Coast Guard, physical characteristics of the bridge (e.g. height, span width), extent of fendering systems, and types of waterway traffic. ATON systems should facilitate safe transit of vessels on the centerline of main channels approaching bridges.

(2) Where bridges cross over waters adjoining waterways marked with aids to navigation, consideration must be given to the accessibility of these waters from the marked waterways and the possibility of their use by traffic as alternate routes or as staging areas. The use of All Waterways Warning Markers may be appropriate in these areas where bridges may pose a hazard to vessel activity.

5. Simulators.

a. Using simulators to analyze aid configurations will be more common in the future.

b. At the very least, simulators can provide a good overview of aid effectiveness in a waterway during daytime and for a clear night. A marine simulator is operated and maintained by the Office of Marine Safety, Security, and Environmental Protection (G-M) at Coast Guard Headquarters. Other operations permitting, it could be used by a district to evaluate a proposed change to an aid system. Contact G-NSR to check on availability.

E. Short Range Aid System Configuration and Design.

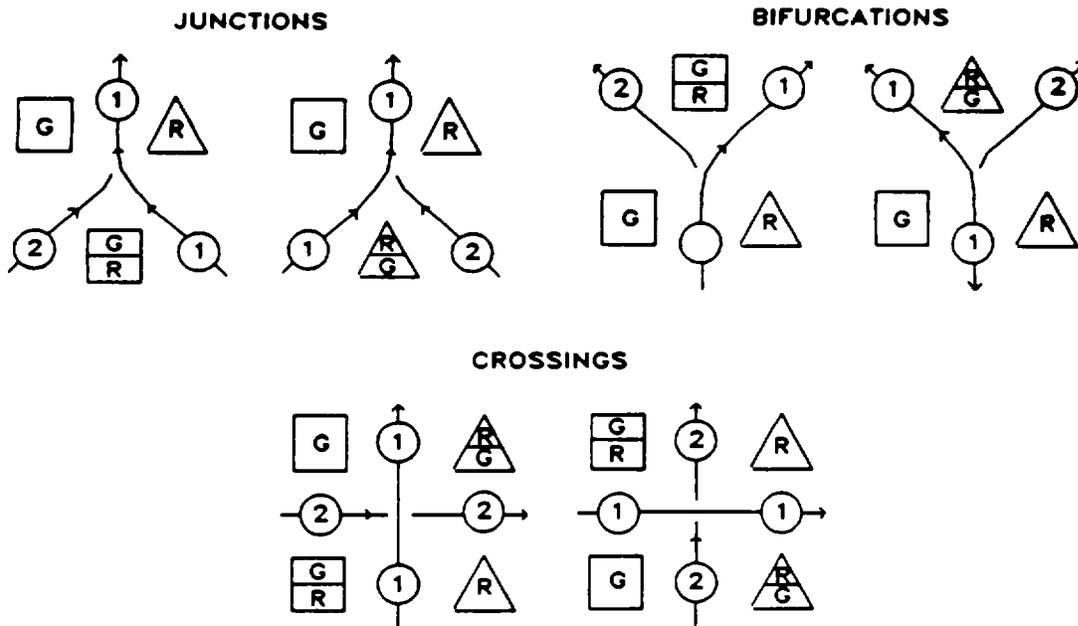
1. General. The short range aid system consists of four sub-systems. They are daytime visual, nighttime visual, radar or reduced visibility, and sound systems. Characteristics of each sub-system are:
 - a. The daytime visual system consists of the daymarks of beacons and buoys.
 - b. The nighttime visual system consists of lights and retroreflective signals.
 - c. The radar system consists of radar reflectors, racons, and shore-based radar systems.
 - d. Sound systems consist of various non-directional sound producing devices.

Since the above systems are collocated, they must be designed or evaluated concurrently. Guidelines for the use of major lights, ranges, LNB's, racens, and sound signals have been provided earlier in Section D of this chapter. The following more specific guidelines should help determine the needs for the two largest categories of short range aids: beacons and buoys.

2. Procedure for Marking. Whether designing a new system or evaluating an existing one, there are many factors to be considered. The following procedure is intended to promote a systematic review of each of these factors, resulting in a thorough treatment of even the most complex situation. These steps parallel those presented in the SRA Systems Design Manual. Both sources describe valid aid to navigation system analysis procedures.
 - a. Determine the Conventional Direction of Buoyage (CDB): Direction of flood and ebb currents throughout U.S. waters have been determined by NOAA and are usually available in current charts and tide tables. This information, as well as coastwise and Great Lake conventions provided in 33 CFR, defines our conventional direction of buoyage for assigning lateral markings. The designer should indicate the direction of buoyage on his working chart, paying particular attention to intersections, islands, and headwaters where currents meet and part.
 - b. Mark the Approaches: The approach to any restricted waterway is usually classified as a bay, sound, channel, inlet or strait. The aid systems in these regions consist of mixtures of radio aids and short range aids. Several procedures are used for marking in this area:

- E. 2. b. (1) Short range aids in this region conform to the conventional direction of buoyage and usually mark good water.
- (2) Traffic separation schemes (TSS) may be found in this area. Aids marking a TSS are special purpose, with the most seaward aid usually being an LNB or safewater mark.
- (3) Wrecks and obstructions should be marked if the traffic situation so dictates.
- c. Prioritize Channels: When more than one channel needs marking, they should be ranked by order of importance. This ranking is usually based on width, depth, and predominant traffic flow. Draw a continuous line, numbered "1", down the center of the primary channel in the direction of buoyage, as in Figure 4-1. Continue with each subsequent channel, leaving short gaps where a subordinate waterway crosses or intersects one of a higher priority, until all are drawn and numbered. With one exception, you should prioritize the ICW based on its importance relative to other proximate waterways, and not necessarily downgrade it to the lowest ranking. For example, there may be places where the ICW is deeper or supports a higher volume of traffic than a nearby non-ICW waterway. The exception arises when the conventional direction of buoyage for the ICW runs opposite to that of the normal waterway. In that case, the normal waterway must have a higher priority than the ICW.
- d. Channel Subdivision. When conducting an aid system design or evaluation, it is helpful to now divide the channel or waterway into regions according to the unique requirements of the maneuvering tasks for each. These descriptive maneuvering tasks are: turn, recovery (from a turn), and trackkeeping.
- (1) A turn region should generally extend a half mile either side of the apex of the turn. Different turn types, such as cutoff, non-cutoff, or bends, require that the designer use discretion when establishing region boundaries. The constraining consideration should be the desire to enclose the area in which the navigator is actually executing the turn.
- (2) The recovery region, as the name implies, should enclose the area, immediately following a turn, which is needed to regain a steady heading. Research has shown this distance to be approximately three quarters to one and one-half

- E. 2. d. (2) miles. A shallow turn, 15 degrees or less, would require the shorter distance for recovery, while a larger turn, up to 35 degrees or more, would require a greater distance to regain track. Vessel size is also an important variable in delineating recovery region distances, with larger vessels, 50K DWT or greater, needing larger distances to regain track.
- (3) The remaining portion of the waterway necessarily becomes the trackkeeping region.
- (4) These regions should be plotted directly on the chart showing the channel under consideration. Figure 4-2 illustrates the technique. This is especially useful when evaluating the interaction between regions later.



NOTE: There is no requirement to mark all three or four corners of the intersections.

FIGURE 4-1

FIGURE 4-1

Table 4-1

Transmissivity to Visibility Conversion Table

Table 4-1
Transmissivity to Visibility Conversion Table
TV=.05

T	Visibility (nm)	T	Visibility (nm)
.10	1.3	.55	5.0
.15	1.6	.60	5.9
.20	1.9	.65	7.0
.25	2.2	.70	8.4
.30	2.5	.75	10.4
.35	2.9	.80	13.4
.40	3.3	.85	18.4
.45	3.8	.90	28.4
.50	4.3	.95	58.4

Figure 4-3

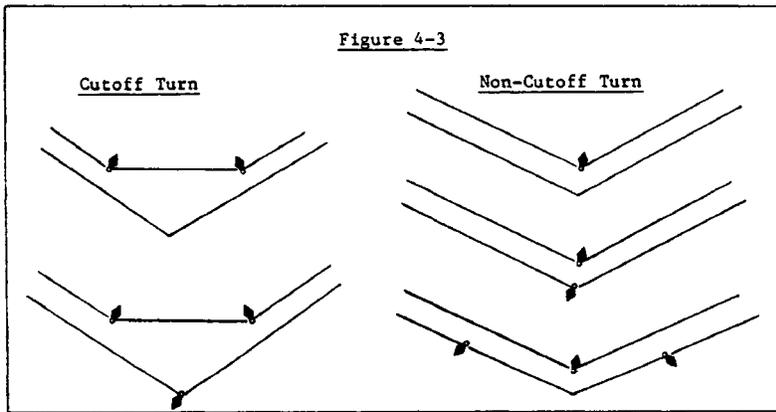
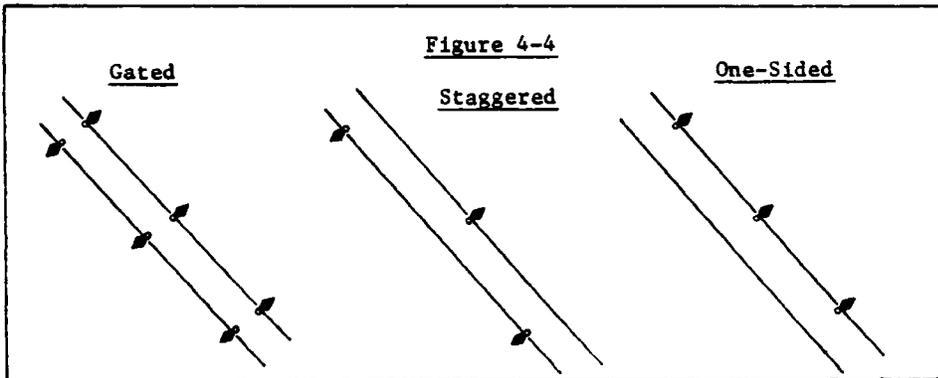


Figure 4-4



E. 2. f. (1) (b) Shape: For fixed aids, the dayboard shape carries some significance. Lateral aids colored red are triangular; those colored green are square. Preferred Channel marks are shaped according to the uppermost or dominant color. Safewater marks are octagonal. Special marks, crossing marks, and other non-lateral marks are diamond shaped. For lighted buoys, shape is insignificant, except for the safewater mark and the isolated danger mark. The safewater mark must carry a single red sphere as a topmark and the isolated danger mark must carry two black spheres as a topmark. For unlighted buoys, red aids are nuns, green aids are cans, and red and white striped aids are spheres or pillars with a red spherical topmark. Yellow aids may use various hulls. As with dayboards, unlighted Preferred Channel buoys are shaped according to the uppermost color.

(c) Numbers and Letters: Channels should be numbered and lettered sequentially. Lateral aids are numbered or lettered as consecutively as possible, beginning at the seaward end of the waterway, and increasing in the previously defined direction of buoyage. Use even numbers on red aids and odd numbers on green aids. In addition to a number, the first aid in a waterway may be suffixed with an identifying letter(s). This provides positive identification where two or more buoys in an area have the same number (e.g. "Buoy 2A"). Preferred Channel, Safewater, Isolated Danger, and Special marks shall be lettered. On the Western Rivers, numbers displayed on distance markers, or suspended from lateral and crossing dayboards, indicate the mileage from a designated point. Buoys on the Western Rivers are not numbered. More guidance on numbering and lettering can be found later in the section on Aid Names.

(2) Lights.

(a) Terminology: An aid's light characteristic consists of its color and rhythm. Authorized colors are red, green, white, and yellow. Authorized rhythms are fixed, flashing (duration of light clearly less than duration of darkness), isophase (light and

E.2.f.(2) (a) (cont.) darkness equal in duration), and occulting (duration of light clearly longer than duration of darkness). Flashing lights may be single flashing (one flash per period) or group flashing (flashes combined in groups with darkness between groups clearly longer than darkness between flashes). Single flashing lights may be slow flashing (less than 30 flashes per minute; the adjective "slow" is usually omitted) or quick (60 or more flashes per minute). A morse code light groups flashes (long and short) to form morse characters.

- (b) Authorized characteristics: A light's characteristic is determined by the aid's function. Authorized characteristics for most aids are contained in Figure 4-5. The quick rhythm is the most conspicuous, and should be used on important lateral aids. Some examples are aids in turns, marking shoals, and marking wrecks. Because a single fixed light can be mistaken for a vessel, use of fixed rhythm lights as aids to navigation is generally discouraged. Those non-lateral aids not subject to the IALA agreement (lighthouses, range lights, leading lights, sector lights, LNB's) are not constrained to particular characteristics. The choice of characteristic should reflect a desire to provide the best conspicuity while avoiding conflicts with other aids which might mislead the mariner. An example of such a conflict would be a major seacoast light showing a Morse Alpha rhythm, since, as shown in Figure 4-5, Morse Alpha indicates a safewater mark. Common sense should eliminate any confusion.
- c. Direction lights: Direction lights may be an effective tool in marking a waterway, particularly where range construction is not possible. Normally, only three-sector direction lights should be used, with a white sector indicating the direction to follow, and the colored sectors conforming to the lateral colors on each channel side: a white center sector with red and green side sectors. Consideration must be given to the transition of colors between sectors. Sharply defined sectors may be preferred with small, maneuverable vessels. However, large vessels may need the "warning" provided by the different hues between green and white, and red and white, when moving out of the center sector.

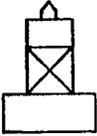
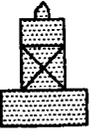
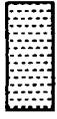
TYPE OF MARK	LIGHT		DAYMARK				TOP MARK
	COLOR	RHYTHM	COLOR	LB	ULB	BEACON	
Lateral Starboard	Red	F1 2.5s F1 4s F1 6s F1(2)5s F1(2)6s Q Oc Iso	Red				NONE
Preferred Channel to Port		F1(2+1)6s	RGR Bands				
Lateral Port	Green	F1 2.5s F1 4s F1 6s F1(2)5s F1(2)6s Q Oc Iso	Green				NONE
Preferred Channel to Starboard		F1(2+1)6s	GRG Bands				
Special	Yellow	F1 2.5s F1 4s F1 6s	Yellow	Standard buoy body as appropriate, not to conflict		 Yellow	NONE

FIGURE 4-5

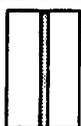
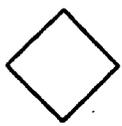
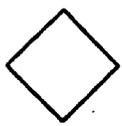
TYPE OF MARK	LIGHT		DAYMARK				TOP MARK
	COLOR	RHYTHM	COLOR	LB	ULB	BEACON	
Safewater	White	Mo(A)	Red and White Striped	Standard Lighted Buoy with Topmark	Pillar with Topmark or Sphere		 Red
Isolated Danger	White	F1(2)5s	Black and Red Bands	Standard Buoy Body with Two Black Spherical Topmarks		N O N E	 Black
Range	Red Green White Yellow	See Chap 6, COMDTINST M16500.3 and Range Design Manual	Green Black Red White	Contrasting stripes			N O N E
Left Descending Bank (LDB)	Red	F1(2)5s F1(2)6s Iso	Red				None
Right Descending Bank (RDB)	Green	F1 4s Iso	Green				None
Crossing (LDB)	Red or White	F1(2)5s F1(2)6s Iso	Red	N O N E	N O N E		N O N E
Crossing (RDB)	Green or White	F1 4s Iso	Green	N O N E	N O N E		N O N E

FIGURE 4-5

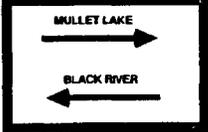
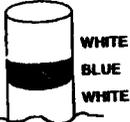
INFORMATION AND REGULATORY MARKERS		Illustration
		White with Orange Markings
Boat exclusion areas	Explanation may be placed outside the crossed diamond shape, such as DAM, RAPIDS, SWIM AREA, etc.	
Danger	The nature of the danger may be indicated inside the diamond shape, such as ROCK, SHOAL, DAM, PIPELINE, etc.	
Controlled Area	The type of control is indicated in the circle, such as SLOW, NO WAKE, ANCHORING, SPEED, etc.	
Information	Used for displaying information such as directions, distances, locations, etc.	
Mooring Buoy	This distinctive color scheme facilitates identification, avoids confusion with other aids to navigation.	White with a Blue Band 

FIGURE 4-5

FIGURE 4-5

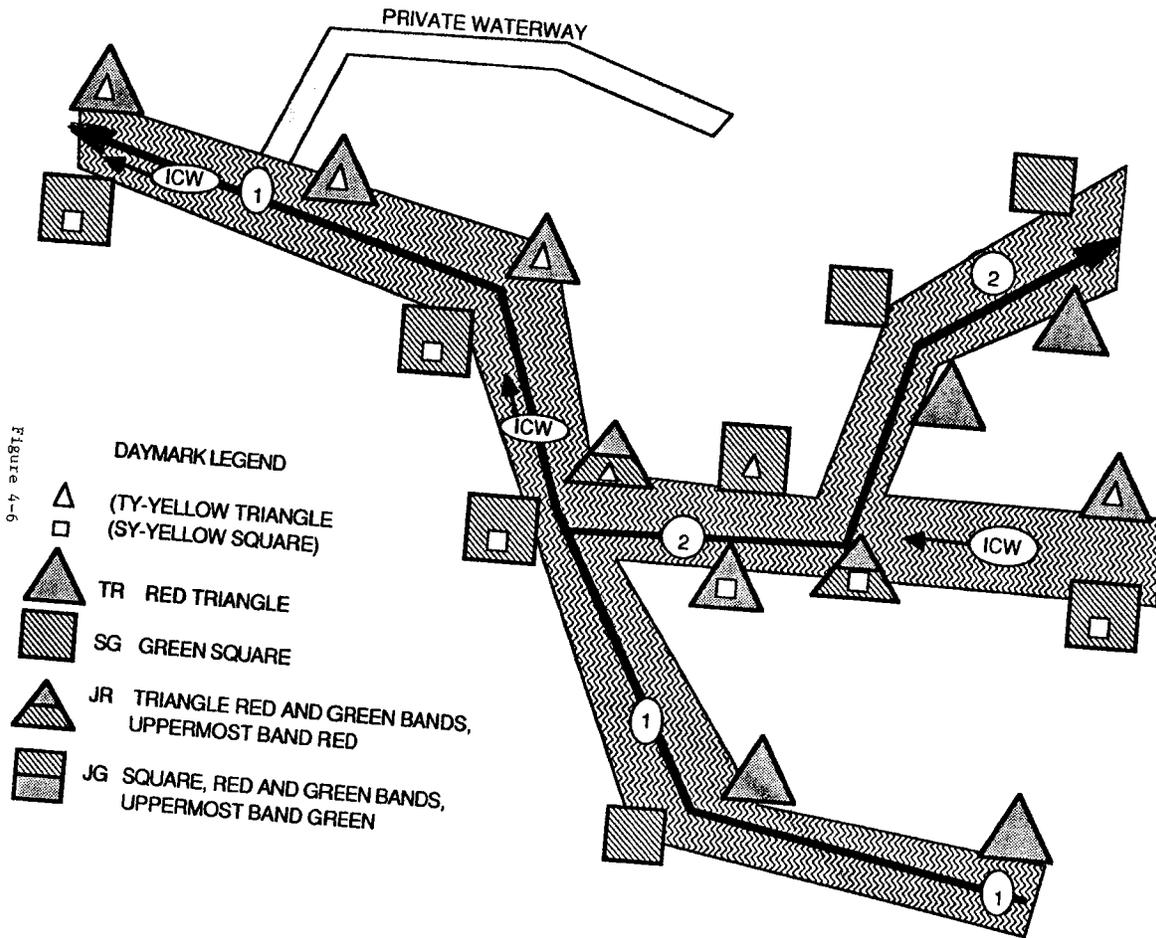


Figure 4-6

MARKING COAXIAL WATERWAYS

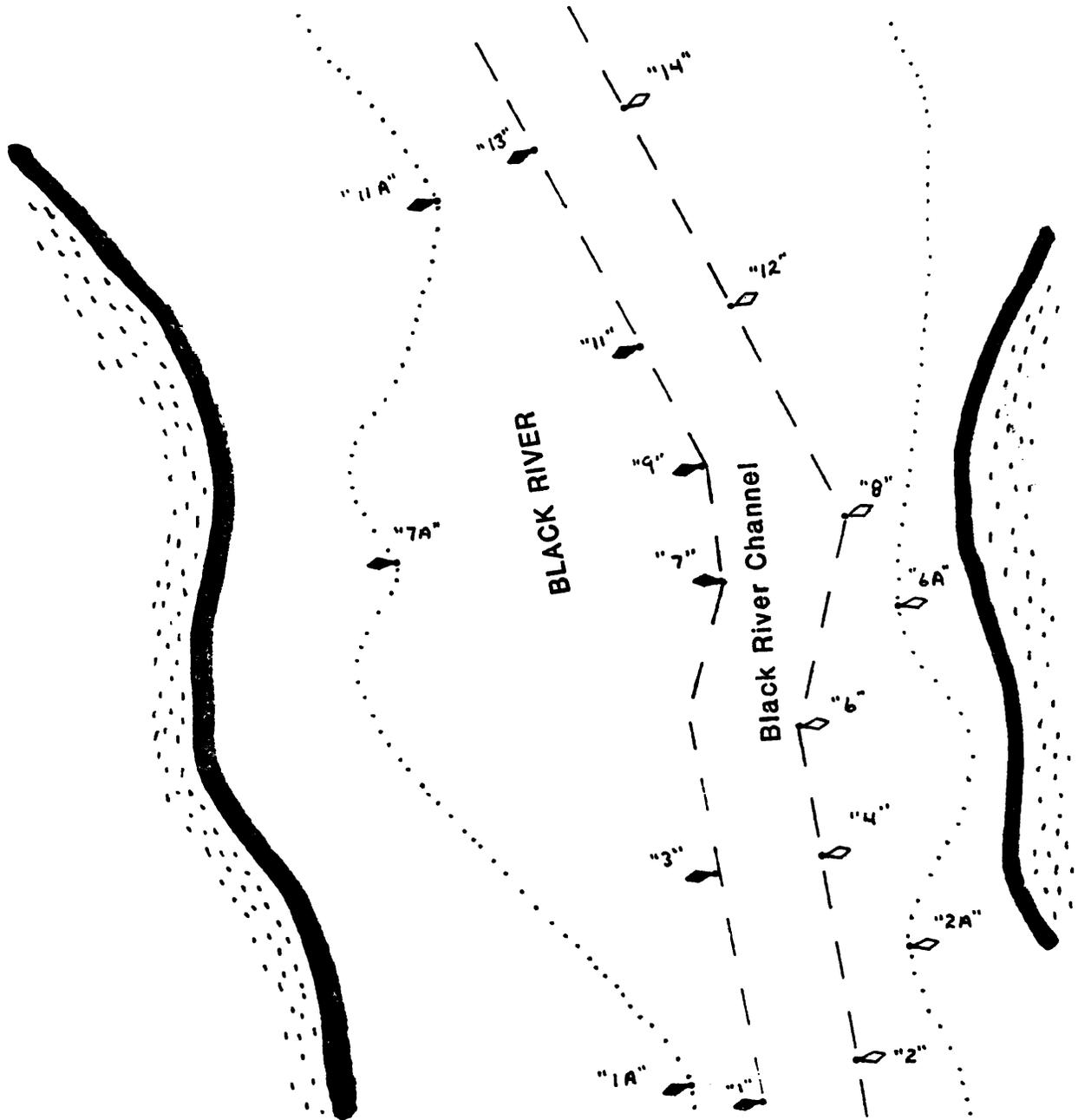
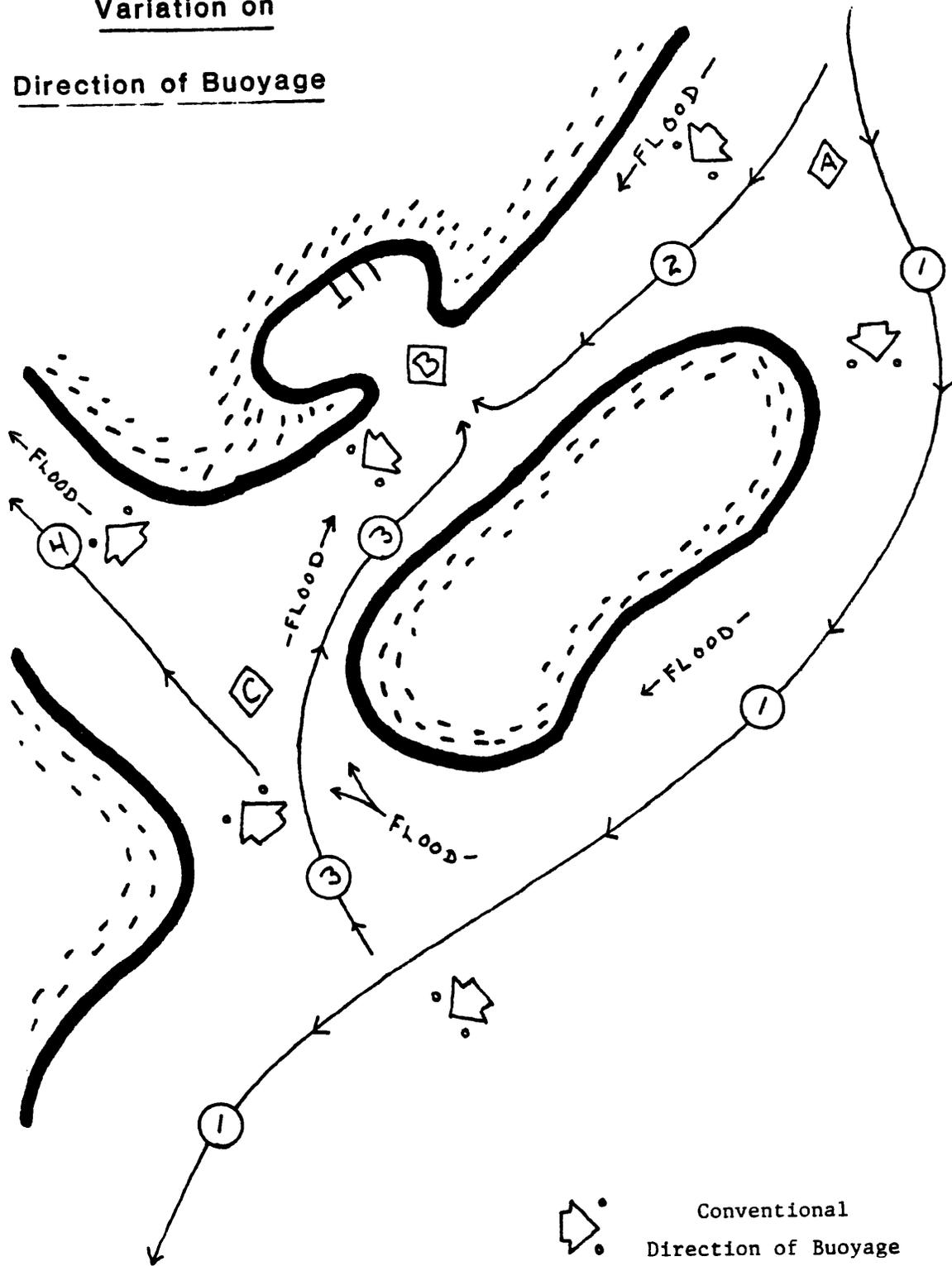


Figure 4-7

4-32

CH-5

Variation on
Direction of Buoyage



- E.2.f.(3) ICW Markings. Yellow symbols indicate that an aid marks the Intracoastal Waterway. Yellow triangles indicate starboard hand aids, and yellow squares indicate port hand aids when following the ICW's conventional direction of buoyage: southerly along the East coast, westerly along the Okeechobee waterway, and westerly along the Gulf coast. Non-lateral aids such as safe water, isolated danger, and front range boards are marked with a horizontal yellow band. Rear range boards do not display the yellow band because of the inconspicuity of the symbol. At a junction with a federally maintained waterway, the preferred channel mark will display a yellow triangle or square as appropriate for the CDB of the ICW. Junctions with the ICW and privately maintained waterways are not marked with preferred channel buoys.
- g. Other Marks and Considerations. The designer must bear in mind the discussions presented thus far apply mainly to the relatively small portion of our total aid population marking dredged channels and restricted waterways. Most aids simply delineate safe water or mark wrecks, obstructions, isolated dangers, etc. These must be marked as the prevailing traffic situation dictates. Common sense, experience, and user preference will provide the basis for their location and configuration.
- (1) Marking of Coaxial Waterways: Occasionally, it may be necessary to mark the deep draft channel within a wider waterway while marking the wider boundaries for shallow draft traffic. Begin by considering the limits of each traffic route independently. Then refine the system to eliminate unnecessary aids where close spacing results. Large potential for confusion to the mariner exists in naming and numbering the aids in this area. The aids marking the deep draft route should be named and numbered first. Included in the name should be a noun indicating a feature of that route, probably channel, traffic lane, cut, or canal. An example would be Black River Channel Lighted Buoy "3" (see Figure 4-7). The other aids that mark the broader expanse of water should then be named and numbered. The name should not include the word "Channel" unless, by chance, it does lie on the channel edge. For example, an aid between Black River Channel Buoys "3" and "5" but not

E.2.g.(1) (cont.) lying on the channel, could reasonably be named Black River Buoy "3A". It should not be numbered in pure numerical sequence with the channel. In a narrow river, the use of alpha- numerics, as in the above example, may be the most obvious solution. But, on a very wide river, the auxiliary lateral markings could be numbered totally independent of the channel numbering system. The application of common sense toward the goal of creating simplicity and minimizing confusion should prevail.

(2) Variations on Direction of Buoyage: At times, strict adherence to using the direction of flood to determine the conventional direction of buoyage may cause confusion and result in an inconsistent marking scheme. This situation is most likely to arise near islands or river mouths. A little ingenuity and common sense should suggest the proper deviation from the rules. The goal should be to design the simplest, most straightforward waterway while keeping exceptions to the rules to a minimum. In Figure 4-8, an apparent confusing situation exists between points "B" and "C". This can be eliminated by deviating from the rules and changing the direction of buoyage to go from point "B" to point "C".

F. Aid Names.

1. General. Assign an appropriate name, as brief as possible, to each aid to navigation. Such names should include the following:
 - a. A geographic place name, preferably one shown in the latest edition of the nautical chart of the area. If no such name is shown in the immediate area of a proposed aid, the name assigned should conform to the local usage. Duplication of place names within the same or adjacent Coast Guard Districts should be avoided.
 - b. When not included in the geographic place name, a noun indicating the waterway feature being marked, such as Approach Channel, Entrance Channel, Rock, Shoal, Reef, Junction, Traffic Lane, Wreck, etc. This noun may be omitted when not necessary for clarity.
 - c. A noun indicating the type of aid such as Light, Daybeacon, Buoy, etc. The type of buoy must be fully described; i.e., Lighted Whistle Buoy.

- F. 1. d. An identifying number or letter(s), assigned as previously discussed. Numbers should be limited to two digits. Aids required to be numbered may, when needed, have a letter after the number. In channel marking it is highly desirable to apply the same geographic name to a series of aids using numbers and/or letters to distinguish among them.

Examples of proper aid names:

Cashes Ledge Whistle Buoy "CL"
Sugar Point Lighted Gong Buoy "3"
Calcasieu Channel Range A Front Light
Mendocino Bay Whistle Buoy "M"
Rogue River North Jetty Light "3"
Southwest Spit Junction Lighted Gong Buoy "SP"

2. Additional Guidelines.

- a. The words "Special Purpose" should not be included in the name of an aid, i.e. Cape Cod Special Purpose Lighted Buoy "D". If necessary additional special purpose information should be listed in the "Remarks" column of the Light List.
- b. When the structure of a discontinued light is retained as a daybeacon, the aid should be designated "Daybeacon", as in Timbailer Daybeacon.
- c. To preclude confusion with numerals, the letters "I" and "O" are not normally used on aids. However they may be used when considered necessary such as:
Oregon Inlet Approach Lighted Whistle Buoy "OI"
Outer Shoal Daybeacon "OS"
- d. Aids marking a dredged channel in a river need not have "Channel" in their names unless necessary for clarity. Hackensack River Channel Buoy "2" could be named Hackensack River Buoy "2".
- e. All solid color buoys or daybeacons marking sunken wrecks should be numbered in proper sequence with the other aids to navigation in the same channel or waterway. The letters "WR" should be used on all wreck markings, and should prefix the regular number or letter, if any. Los Angeles Entrance Channel Lighted Buoy "WR2A" is an example.
- f. The words "preferred channel" "bifurcation" and "safe water" should not normally be used in aid names.

|E. 2. g. Temporary additional aids, not relocations, are
| marked with a number and a letter designation.
| Example: A channel marked by two aids 12 and 14 has
| experienced shoaling between the aids. The aid
| between 12 and 14 would be designated 12A. If more
| shoaling occurs between the permanent aids the next
| aid is numbered 12B.

F. 3. Collocated Aids.

- a. Sometimes a structure may serve as a support for two different aid functions. Perhaps the most common example is a range structure that displays an omnidirectional light shown from the range lantern or a separate lantern.
- b. If, because of the location of the range structure at or near the channel edge, the omnidirectional light serves as a lateral aid, the structure should be equipped with a range daymark and one or more lateral daymarks.
 - (1) If the aid uses the same lantern for both range light and lateral aid purposes, it should be considered one aid, with the name of the range light suffixed with an appropriate number to indicate the dual function of the aid. For example, such an aid could be named Sacramento Channel Range B Front Light "75".
 - (2) If separate lanterns are used for the two functions, the structure should be considered as two aids. For example, Sacramento Channel Range B Front Light and Sacramento Channel Light "75" would be treated as separate aid stations for Light List, Notice to Mariners, and ATONIS purposes.
- c. A similar procedure is followed when two range light functions are accomplished on one structure. For example, a single lantern, double purpose range structure could be named Houston Ship Channel Ranges S and X Front Light or Houston Ship Channel Range E Front and Range H Rear Light. If separate lanterns were used, two separate aid stations would be considered to exist at the same location.

F. 3. d. A range light may be so arranged that it produces, in addition to the beam on the channel axis, an all-around light of lower intensity. Such a light is considered an additional feature of the range as long as the characteristic is the same as the range light. If the characteristic is different, in either color or rhythm, then the omnidirectional light is described as a "passing light", and this is noted in the Light List.

E. 2. g. Temporary additional aids, not relocations, are marked with a number and a letter designation. Example: A channel marked by two aids 12 and 14 has experienced shoaling between the aids. The aid between 12 and 14 would be designated 12A. If more shoaling occurs between the permanent aids the next aid is numbered 12B.

F. 1. Collocated Aids.

a. An aid to navigation is composed of all needed signals required by operational considerations for the safety of navigation. An aid may be composed of a daymark and light, sound signal, racon, and radiobeacon or any combination of the above. All of these components, at a facility, are described in the remarks section of the Light List as an aid to navigation. In some cases similar aid types are collocated at the same facility or structure.

b. Sometimes a structure may serve as a support for two different aid functions. Perhaps the most common example is a range structure that displays an omnidirectional light shown from the range lantern or a separate lantern.

c. If, because of the location of the range Structure at or near the channel edge, the omnidirectional light serves as a lateral aid, the structure should be equipped with a range daymark and one or more lateral daymarks.

(1) If the aid uses the same lantern for both range light and lateral aid purposes, it should be considered one aid, with the name of the range light suffixed with an appropriate number to indicate the dual function of the aid. For example, such an aid could be named Sacramento Channel Range B Front Light "75".

(2) If separate lanterns are used for the two functions, the structure should be considered as two aids. For example, Sacramento Channel Range B Front Light and Sacramento Channel Light "75" would be treated as separate aid stations for Light List, Notice to Mariners, and ATONIS purposes.

- |F. 1. d. A similar procedure is followed when two range light
| functions are accomplished on one structure. For
| example, a single lantern, double purpose range
| structure could be named Houston Ship Channel Ranges
| S and X Front Light or Houston Ship Channel Range E
| Front and Range H Rear Light. If separate lanterns
| were used, two separate aid stations would be
| considered to exist at the same location.
- e. A range light may be so arranged that it produces, in
addition to the beam on the channel axis, an all-
around light of lower intensity. Such a light is
considered an additional feature of the range as long
as the characteristic is the same as the range light.
If the characteristic is different, in either color
or rhythm, then the omnidirectional light is
described as a "passing light", and this is noted in
the Light List.

CHAPTER 5. NON COAST GUARD MAINTAINED AIDS

A. General.

1. There are categories of aids to navigation which are not maintained by the Coast Guard. These aids, in many areas of the navigable waters subject to Federal jurisdiction, are maintained by various others including the States, other Armed Forces, private corporations and private individuals. These aids are not maintained by the Coast Guard because marking by the Coast Guard would:
 - a. Relieve the owner of a wreck of his responsibility to warn others of its existence and location.
 - b. Place upon the Coast Guard the burden of marking structures or other hazards which have been established for the benefit of only the owner.
 - c. Require the expenditure of Federal funds far exceeding the expected benefits that would be derived.
 - d. Benefit only a limited number of users.
2. 33 USC 409 requires the owner of a sunken vessel, raft or other craft to mark it with a buoy or beacon during the day and a lighted lantern at night.

B. Private Aids to Navigation.

1. Classification of Private Aids.
 - a. Private aids include both those which are legally required, and those which are merely desired, for one reason or another, by the owner. There are three classifications of private aids:
 - (1) Class I private aids are those aids to navigation on marine structures or other works which the owners are legally obligated to establish, maintain, and operate as prescribed by the Coast Guard. This obligation is contained in 33 CFR 64, 66 and 67.
 - (a) The owner of a structure is required by law (14 USC 85, 33 CFR 64.21) to establish the aids to navigation required by the district commander.

- (b) If the owner of a sunken vessel wreck or other obstruction fails to mark it as prescribed by the district commander, the Coast Guard may mark it and charge the costs of such marking to the owner in accordance with 33 CFR 64.33.
 - (2) Class II private aids to navigation are those, exclusive of Class I aids, that are located in waters used by general navigation.
 - (3) Class III private aids to navigation are those, exclusive of Class I aids, that are located in waters not ordinarily used by general navigation.
- b. Authorization for the establishment of a Class II or III private aid by the Coast Guard imposes no legal obligation that the aid actually be established and operated. It only specifies the location and operational characteristics of the aid for which the authorization was requested. Once the aid is established, however, the owner is legally obligated to maintain it. The owner must also give the Coast Guard 30 days notice before discontinuing the aid in accordance with 33 CFR 66.01-25.
2. District Administration of the Private Aids Program.
- a. Requests for authority to establish, discontinue or change private aids to navigation are made on Forms CG-2554 and 4143. These forms, executed by the person, company, corporation, or municipality at whose expense the aid is to be maintained, are submitted to the appropriate district commander who shall:
 - (1) Review the form for compliance with regulations, accuracy of plotting and correctness.
 - (2) Ensure that all positions are given in range and bearing from a known and well charted object, or by latitude and longitude.
 - (3) In unusual situations, cases involving electronic aids, or examples not covered by directives, the application will be sent to Commandant (G-OPN) for approval.

- | b. After determining the class of the aid/obstruction
| marking, the district commander shall recommend to
| the National Oceanographic Service, through
| publication in the Local Notice to mariners, for
| charting all permanent:
 - (1) Class I private aids.
 - (2) Class II fixed private aids.
 - (3) Class II floating private aids equivalent in
size to, or larger than a 6NR/6CR.
 - (4) Class III private aids shall not be recommended
for charting except in special circumstances.
- c. All private aids included in sub-paragraphs b(1),
b(2), and b(3) above shall be reported in Notices
to Mariners upon establishment, change or
discontinuance.
- d. When a private aid is established that needs to be
charted, it shall be listed in the Local Notice to
Mariners in the same manner as a Federal aid, with
the notation (Priv Maint). See Chapter 13 for more
detail.
- e. Markers which are obstructions to navigation,
especially those in or adjacent to fairways or
track lines, must be of appropriate size, shape,
and color to warn traffic of their existence and
purpose and shall be listed in the Light List.
- f. Small private aids which mark fishing reefs and
race courses may be excluded from the Light List
when:
 - (1) The fishing reefs are not hazards or
obstructions to navigation.
 - (2) The markers are not located in or adjacent to
fairways, track lines, or traffic separation
schemes customarily used by craft in
approaching or leaving harbors.
- g. Previously charted private aids no longer meeting
the requirements above will be removed from charts
and the Light List.

- h. Aids submitted to Commandant (G-OPN) for removal from charts will be removed from the Light List. Removal of these private aids from the Light List requires notification in Local Notices to Mariners.
- i. In conjunction with the district review of Federal aids to navigation specified in Chapter 3, charted private aids will also be reviewed to identify those with changed classification.
- j. Queries regarding private aids should be directed to the district commander. All correspondence between the Coast Guard and the maintainer of private aids should normally be through the district commander.
- k. Coast Guard units discovering unauthorized private aids shall make every effort to identify the persons responsible for their establishment. A report shall be made to the district commander describing the unauthorized aid and the action taken to ascertain the owner. The report shall include the name and address of the owner, if known. Auxiliary units discovering such aids shall report them to the district commander who will ascertain ownership. The district commander's action will then depend on the circumstances of the individual case. If the owner makes reasonable effort to comply with regulations, the application should be processed without prejudice. Proceedings under 14 USC 83 should be instituted only in cases of persistent neglect or refusal to comply with the regulations.

3. Inspection and Verification of Private Aids to Navigation.

- a. Private aids to navigation are authorized by the Commandant in accordance with law, and are to be maintained by, and at the expense of, the responsible parties. Inspections and verifications are to ensure that private aids are in compliance with the conditions of the private aid application.

| (1) An inspection is defined as Coast Guard
 | personnel doing a hands-on check of an aid to
 | ensure the hardware is as requested in the
 | private aid application and that the aid is
 | operating properly.

- | (2) A verification can be a self-verification where
| the owner reports to the Coast Guard that the
| aid is operating properly. It can also be
| Coast Guard or Coast Guard Auxiliary personnel
| viewing the aid from a distance and seeing the
| aid operating as advertised.
- | b. District commanders shall ensure that all private
| aids to navigation in their areas of responsibility
| are inspected or verified on a periodic basis as
| outlined below.
- | (1) New Class I private aids should be verified by
| Coast Guard or Coast Guard Auxiliary personnel
| as soon after their establishment as possible.
- | (2) Class I private aids will be verified annually.
| Districts should conduct spot check inspections
| to ensure self-verifications are being properly
| conducted. Inspections should focus on those
| aids which are frequently discrepant or
| generate complaints.
- | (3) Class II private aids will be verified every
| three years.
- | (4) Class III aids will be verified by the owner
| every five years.
- | (5) When notification has been received that a
| private aid has been discontinued, the site
| should be inspected to ensure that the aid has
| been removed.
- | (6) Report of inspections and verifications should
| be made on the forms designated by the district
| commander. Enclosures 5-1 and 5-2 are examples
| that could be used for inspections and
| verifications respectively. When discrepancies
| to private aids are observed, an immediate
| report shall be made to the district commander
| in the same manner as for Coast Guard aids.
- | c. Inspections of private aids to navigation should,
| whenever possible, be made in the presence of the
| owner or the owner's agent. If present, the owner
| or agent shall be advised of any discrepancies
| noted. No repair, change, repositioning, or
| servicing of private aids is authorized by Coast
| Guard personnel; however, friendly advice is
| encouraged.

4. Use of the Coast Guard Auxiliary to Verify Private Aids to Navigation.

- a. District Commanders are encouraged to use the Coast Guard Auxiliary for the verification of private aids to navigation to the extent that funds are available from current budgets.
- b. When using the Auxiliary, district commanders shall ensure that Auxiliarists receive training and maintain qualifications necessary to carry out the mission.
- c. District Commanders are encouraged to use the Auxiliary to assist with the administration and review of private aid to navigation application forms and other duties that may arise from their verification of private aids.

C. State Aids to Navigation.

- 1. General 33 CFR 66.05 permits the Commandant to designate navigable waters of the United States as "State Waters for private aids to navigation." These are waters not marked by the Federal government on which a State government may regulate the establishment, operation, and maintenance of marine aids to navigation. All private aids operated in "State Waters", whether owned or operated by a State, political subdivision thereof, or by individuals, corporations, or organizations are "State Aids to Navigation"
- 2. Action By District Commander.
 - a. District commanders shall establish close liaison with the State officials having responsibility for enforcement of the boating laws of the states within the district's boundaries. They shall consult with State officials on any matters involving aids to navigation, particularly where the waters involved are contiguous to Federal waters. Those states which show interest in aids to navigation agreements shall be given the utmost cooperation and assistance.

- b. The provisions of 33 CFR 66.05 concerning State waters agreements shall be followed. Specification of standards for minimum size and shape, etc., in 66.05-20(c) should be required by the Coast Guard. If a State cannot accept the minimum size and shape standards because acceptance would result in costly replacement of present aids, then a statement of intent to manufacture or purchase future aids meeting the standards will suffice. Such a statement shall be attached as an appendix to the basic agreement. Aids throughout the State must show the specified color and light characteristics required by 33 CFR 66.10.

3. Negotiations and Conditions.

- a. All agreements shall contain a clause whereby the Coast Guard agrees to furnish to the State a description of all private aids to navigation which have been authorized by the Coast Guard in the affected waters prior to the effective date of the agreement. The agreements shall also contain a clause whereby the State, if it should desire to withdraw from the agreement, agrees to furnish the Coast Guard with a description of all State aids to navigation in the affected waters prior to the resumption of exclusive supervision of the aids by the Coast Guard.
- b. The agreements will remain in effect until canceled, with no requirement for periodic renewals.
- c. All agreements shall contain a clause whereby each State agrees to notify the district commander by letter of all aids being administered in State Waters for Private Aids to Navigation as of 30 June each year. The report should detail the quantity of each type of aid.
- d. 33 CFR 66.05-20 requires inclusion of a clause in the agreement reserving to the district commander the right to inspect aids without prior notice. Normally such examinations will be undertaken only when complaints have been made to the Coast Guard concerning the condition of aids in a specific area.

- e. Examinations deemed necessary by the Coast Guard should be made jointly by representatives of the State and the district commander exercising responsibility over the area of the aids in question. The Coast Guard Auxiliary should not be used to inspect state aids to navigation.
- f. The following are geographical considerations:
 - (1) Normally agreements will be executed with only one State. Under unusual circumstances a body of water common to two states may have a single administrator representing both states. Such an administrator would be an acceptable agent to execute an agreement.
 - (2) Those states which have waters lying within two or more Coast Guard districts will be required to execute only one agreement, that one being with the Coast Guard district in which the State capital is located. Vermont and Minnesota, however, will continue to be the responsibility of the 1st and 9th Coast Guard Districts respectively. Non-Signatory District Commanders must be kept informed of agreements being negotiated and given opportunity to comment. Unresolved conflicts should be brought to the attention of Commandant (G-OPN). A clause will be inserted in such agreements to furnish the addresses of the other district aids to navigation branches to which marine information must be supplied when the area involved lies within their district boundaries.

4. Designation of State Waters.

- a. Normally a State would not be expected to request an agreement until it intended to take action in a specific area. Therefore, a request from a State for designation of State waters should be forwarded to the Commandant (G-OPN) when negotiations on an agreement commence to facilitate review. Specific designation of waterways should not be included in the basic agreement. Separate submission of the designation requests will allow later inclusion of other waters without rewriting the basic agreement. Once an agreement is finalized, forward it to G-OPN for Commandant approval and publishing in 33 CFR 66.05-100.

- b. Designations will normally be one of two types:
- (1) Specific waters such as "Lake X" or "The Jones River from the _____ boundary upstream to the Midville City Limit."
 - (2) All-inclusive such as "all navigable waters within the State of _____ not marked by the U.S. Coast Guard on the effective date of the agreement." This type of wording requires that an agreement be consummated prior to designation of waters. This should not present a problem since a state would not normally want a designation made unless it intended to install aids, which would then come under the agreement. There is no preference for one type of designation over the other, since situations vary. The choice should be based on whichever wording best meets the needs of the state.
- c. Requests for amendments to designations are to be submitted in the same manner as the original request.
- d. If a body of water has been designated as State waters for private aids to navigation, and the volume of traffic indicates that Federal marking should be established, or if the Corps of Engineers executes a River and Harbor Improvement Project throughout the body, the Commandant will revoke such designation upon request of the district commander, in order that Federal aids may then be established in the area. At least 30 days advance notice shall be given to the State(s) concerned.
- e. Infrequently, a state might request that waters presently marked by the Coast Guard be designated as State waters. Approval of such a request will be based on the district commander's investigation of: area of waters in question, proximity to other State waters; type and number of Coast Guard aids involved; use and types of users of the waterway in question; and possible benefit through monetary savings to Coast Guard versus possible derogation of services to mariners. Should the district commander recommend that a State be allowed to assume responsibility for waters which are

presently federally marked, the Commandant may authorize discontinuance of all Coast Guard aids, allowing the State to mark the area with State aids in accordance with the agreement.

f. State and Coast Guard aids cannot exist in the same area.

5. U.S. Army Corps of Engineers. Regardless of a designation by the Commandant of waters as State waters for private aids to navigation, and in accordance with 33 CFR 66.05-40, the State must obtain permission for the installation of aids from the Corps of Engineers prior to their establishment. District commanders may assist State authorities in initiating discussions between these parties. However, the district commander should avoid acting as intermediary in such matters or interceding for either party.
6. Information On Aid Changes. Upon receipt of information concerning changes of aids to navigation in "State Waters" the district commander shall publish the information in the Local Notice to Mariners if appropriate.
7. Exclusion From Light Lists. Aids maintained in State Waters are not listed in the Light List.
8. Sample Agreement. District commanders may sign agreements conforming to the sample (Enclosure 5-3), forwarding a copy to Commandant (G-OPN). Should a State raise a major objection to the sample agreement, all possible alternatives in reducing the objection should be pursued on the district level. If the district commander cannot reach a compromise with the State over the objection, a letter outlining the matter shall be forwarded to Commandant (G-OPN). Commandant (G-OPN) will then review the State's objection along with the district commander's comments and recommendations and advise the district commander of the Commandant's final determination.

D. Aids Maintained by Armed Forces.

1. General. The armed forces of the United States are exempt from Private Aid to Navigation Regulations. In cases when other armed forces request information on marking requirements, they should be advised not only of their exemption but also what the appropriate requirements would be if they were not exempted. In so

doing, they should be requested to comply, if possible, with the usual requirements which are intended to provide standardized signals to the mariner. In particular, they should be advised of the preference for incandescent light sources in those cases where they indicate a preference for flashtube or "strobe" light source, indicating that this requirement is based on the perceptual problems encountered in observing flashtube light sources at night.

E. Private Radionavigation Aids.

1. General. Coast Guard regulations allow radar beacons (racons) and shore-based radar stations to be operated as private aids to navigation (33 CFR 66.01-1). Federal Communication Commission (FCC) regulations require all operators of private maritime radionavigation systems to obtain written permission from the cognizant Coast Guard district commander prior to applying for an FCC radionavigation station license. All private and State owners of radionavigation stations must have an FCC license to operate. Operators of Federal radionavigation stations are exempt from these provisions, but they must obtain approval to operate with the National Telecommunications and Information Administration (NTIA). Private surveillance radar coast stations do not require U.S. Coast Guard approval. (47 CFR 80.605(a))
2. Radar Beacons (Racons). Private and state applicants for permission to operate a racon must submit the following information to the Coast Guard district commander in accordance with 33 CFR 66.01-5 and 47 CFR 80.605:
 - (a) The proposed position of the racon;
 - (b) The name and address of the person at whose expense the racon will be maintained;
 - (c) The name and address of the person who will maintain the racon;
 - (d) The time and dates during which it is proposed to operate the aid;
 - (e) The necessity for the racon;
 - (f) The manufacturer and model number of racon;

- (g) The height above water of the desired installation;
- (h) The requested coding characteristic;
- (i) The maximum racon transmitted power (e.i.r.p.), only if it exceeds 5 watts.

The equipment must have FCC authorization. Upon approval, the district commander shall notify the applicant in writing and follow other relevant procedures outlined in section B of this chapter.

3. Radars, Radar Safety Transponders and other Radionavigation Aids. Applications for surveillance radar coast stations submitted to district commanders, should be returned with a statement saying, in accordance with 47 CFR 80.605(a), no Coast Guard approval is required. Applications for other non surveillance radar coast stations should be reviewed in accordance with section B of this chapter. In addition, all applications for radar safety transponders should be sent to Commandant (G-OPN) for approval in accordance with 47 CFR 80.605(d).

PRIVATE AID TO NAVIGATION
INSPECTION/VERIFICATION (CIRCLE ONE) REPORT
OFFSHORE STRUCTURES & OTHER CLASS I AIDS

AID NAME _____ LLNR/LLPG _____

TYPE ANNUAL _____ ESTABLISHMENT _____ DISCONTINUANCE _____

OWNER PRESENT? YES NO

TYPE AID _____

TYPE POWER SOURCE SHORE _____ BATTERY _____ SOLAR _____ OTHER _____

EQUIPMENT: CHECK ITEMS AS APPLICABLE. CHECK N/A IF EQUIPMENT NOT INSTALLED. COMMENT ON BLANK ITEMS IN REMARKS.

SHORE AID 1. Is structure secure and capable of supporting the equipment installed?

2. Is the daymark in proper condition?

3. Is daymark proper size & color?

BUOY 1. Is buoy on assigned position?

2. Is the buoy the type approved on the CG-4143?

3. Is buoy clean & properly painted with proper retro?

LIGHTING 1. Are lights displaying proper characteristics?

2. Are lantern assembly/lamps the type authorized on CG-4143?

3. Proper voltage to lantern assembly?

4. Is lantern assembly properly mounted and level?

5. Does lampchanger operate properly?

SOUND SIGNALS 1. Is equipment same as that authorized on CG-4143?

2. Proper voltage to equipment?

MISC 1. Is there a radar reflector installed?

2. Is there a racon installed?

THE CONDITION OF THIS AID IS GENERALLY: GOOD _____ FAIR _____ POOR _____

REMARKS (* Include how buoy position obtained.)

BY _____ UNIT _____ DATE _____

PRIVATE AID TO NAVIGATION VERIFICATION REPORT
CLASS II & III AIDS

AID NAME _____ LLNR/LLPG _____

TYPE VERIFICATION
ANNUAL _____ ESTABLISHMENT _____ DISCONTINUANCE _____

OWNER PRESENT? YES NO

TYPE
AID _____

AID EQUIPMENT/CONDITION: CHECK ITEMS APPLICABLE. CHECK N/A IF
EQUIPMENT NOT INSTALLED. COMMENT ON BLANK ITEMS IN REMARKS.

1. Is aid secure and capable of supporting the
equipment installed? YES | NO | N/A
2. Is the daymark the proper size & color and
in proper condition? YES | NO | N/A
3. Is the aid on assigned position? * YES | NO | N/A
4. Are lights, if installed, displaying proper
characteristics? YES | NO | N/A
5. Are sound signals, if installed, sounding
proper characteristics? YES | NO | N/A
6. Is a racon installed and operating properly? YES | NO | N/A

THE CONDITION OF THIS AID IS GENERALLY:
GOOD _____ FAIR _____ POOR _____

REMARKS (*Include how buoy position obtained.)

VERIFIED
BY _____ UNIT _____ DATE _____

SAMPLE AGREEMENT
(See Section B.8.)

AGREEMENT
between
THE UNITED STATES COAST GUARD

THE STATE OF _____
WHEREAS, THE STATE OF _____, through its
Department of _____, an agency under the Laws of
_____ authority to regulate, establish, operate and
maintain maritime aids to navigation on waters over which
_____ has jurisdiction (hereinafter referred to as
_____), has requested that certain navigable waters of
the United States in the State of _____ be designated
"State Waters for Private Aid to Navigation" (hereinafter "State
Waters*") to facilitate regulation by _____ of
maritime aid to navigation, including regulatory markers;

WHEREAS the Commandant, U.S. Coast Guard, has determined:
That _____ has the capability to regulate certain
maritime aids to navigation, including regulatory markers, so as
to improve the safety of navigation maritime aids to navigation,
including regulatory markers, so as to improve the safety of
navigation; and That it would be in the public interest to
promote regulation of such maritime aids to navigation by

NOW THEREFORE, in order to facilitate cooperative regulation
of maritime aids to navigation on the waters where there is
concurrent jurisdiction under the sovereign, governmental, and
policy powers of the State of _____ and of the United
States as contemplated by Title 33, Code of Federal Regulations,
Subpart 66.05;

IT IS AGREED AS FOLLOWS:

- (1) Neither party cedes by this agreement any of its powers
and responsibilities to the other.
- (2) is hereby permitted to regulate maritime
aids to navigation, including regulatory markers, on "State
Waters" on the condition that the aids conform to the Uniform
State Waterway Marking System specified by Title 33, Code of
Federal Regulations, Subpart 66.10 or the United States' Lateral
system of buoyage, subpart 62.25.
- (3) This agreement shall constitute a general permit in lieu
of individual permits as prescribed in Title 33, Code of Federal
Regulations, 66.01-5, for all maritime aids to navigation,
including regulatory markers, which are in conformity with this
agreement and the regulations in Title 33, Code of Federal
Regulations, Subparts 62.25, 66.05 and 66.10, heretofore
established or to be established in _____ "State
Waters" as previously designated or hereafter designated by the
Commandant. The extent of "State Waters" may be modified from
time to time as provided in paragraph 9.
- (4) _____ will modify or remove, or cause to
be removed, maritime aids to navigation, including regulatory
markers, established under the authority of _____,
without expense to the United States when so directed by the
Commander, _____ Coast Guard District (hereinafter

"COAST GUARD") subject to the right of _____ to appeal any such order to the Commandant, whose decision shall be final.

* Some states may attach other legal significance to the term "State Waters," in which case the term "State Waters for Private Aids to Navigation" should be used throughout the agreement.

- (5) COAST GUARD shall have the right to inspect the maritime aids to navigation authorized by this agreement at any time. Whenever possible prior notice shall be given by the Coast Guard to the State of _____ to allow for joint inspection.
- (6) _____ shall furnish COAST GUARD (mail address: Commander, _____ Coast Guard District, _____ a listing of the location and type of aids to navigation under the authority of _____ prior to the effective date of this Agreement. COAST GUARD shall furnish _____ a list of all private aids to navigation under COAST GUARD jurisdiction in the "State Waters" of _____ in existence prior to the effective date of this Agreement, which are to be transferred to the administration of _____. The list shall include the information referred to in 33 CFR 66.01-5 except for the chart or sketch noted in paragraph (a) of that section.
- (7) _____ shall inform the COAST GUARD of the nature and the extent of any change in _____ maritime aids to navigation as soon as possible, preferably not less than 30 days in advance of making the changes.
- (8)
 - a. In each instance in which a regulatory marker is to be established in "State Waters," _____ shall require the agency or political subdivision of the State establishing or authorizing the marker to obtain prior permission from the District Engineer. U.S. Army Corps of Engineers, having jurisdiction to regulate the waters involved, or a statement that there is no objection to the proposed regulation of the water area. A copy of the Corps of Engineers permit or letter of authority shall be provided by _____ to COAST GUARD upon request.
 - b. When a fixed or floating aid to navigation, or a mooring buoy is to be established in "State Waters," _____ shall require the private party, agency or political subdivision establishing or authorizing the aid or mooring buoy to obtain prior permission or a statement of no objection from the District Engineer concerned.
- (9) The Commandant may upon his own initiative or upon request, revoke or revise any designation of "State Waters" previously made by him. Written notice will be given _____ (mail address: _____) of any such action contemplated by the Commandant. Except in an emergency, _____ will be afforded a period of not less than 30 days from the date of the notice in which to inform the Commandant of _____ view in the matter before final action is taken to revoke or revise such designation.
- (10) At any time after this Agreement has been in effect for one year _____ may draw from this Agreement upon giving 90 days written notice to COAST GUARD. In this event, prior to withdrawal _____ will furnish to COAST GUARD

data such as that described in paragraph 6 in order to facilitate resumption of exclusive COAST GUARD supervision of maritime aids to navigation in navigable waters of the UNITED STATES within the State of _____ ("State Waters").

(11) By 1 September annually, _____ will provide COAST GUARD a listing of all aids being administered in "State Waters" as of 30 June of that year. This listing will indicate the number of each type of aid but need not include the detailed information required under paragraph 6 above.

(12) The parties hereby designate the _____ State of _____, and the Chief, _____ Branch, _____ Coast Guard District, as liaisons officers to facilitate the cooperation and assistance contemplated by this Agreement.

FOR THE UNITED STATES COAST GUARD

DATE

FOR THE STATE OF

DATE

CHAPTER 6. MARKING OF WRECKS

A. Marking Policy.

1. General.

- a. 33 USC 409 requires that wrecks of vessels, constituting a hazard in the navigable waters of the United States, must be marked for the protection of marine traffic. The law requires that the owner of such a wreck mark it with a "buoy or beacon during the day and a lighted lantern at night." 14 USC 86 authorizes the Secretary of Transportation to mark for the protection of navigation any sunken vessel or other obstruction existing on the navigable waters or waters above the continental shelf of the United States for so long as the needs of maritime navigation require. As a matter of policy therefore, wreck markings established by the Coast Guard, whether for an agency of the Federal government or in response to the request of the owner, shall provide no lesser degree of service and protection to the mariner than that required of the owner.
- b. Wreck markings established and maintained by the Coast Guard shall be lighted aids in all cases unless specifically exempted by the Commandant (G-NSR). It is recognized, however, that circumstances may not permit the establishment of a lighted buoy immediately. In such cases, unlighted aids may serve temporarily until such time as a lighted aid can be established.
- c. Radar beacons (racons) may also be used to mark wrecks.

2. Marking Characteristics.

- a. The color, numbering, shape and light characteristics of aids marking wrecks and other obstructions must conform to the lateral system of aids to navigation and the IALA System in use in the geographical area. The use of the isolated danger mark is not authorized at the present time.
- b. If a wreck may be safely passed on one side only, it shall be marked by a solid red or green buoy or corresponding dayboard on a fixed structure. If a wreck may be safely passed on either side it may be marked by a red and green horizontally banded buoy or corresponding dayboard, the color of the uppermost band denoting the preferred side.

- A. 2. c. The light color shall be red on solid red buoys and structures with TR dayboards and green on solid green buoys and structures with SG dayboards, and either red or green, depending on the color of the uppermost band, on horizontally banded buoys and structures with JG or JR dayboards.
- d. The light rhythm shall be quick flashing on solid color buoys and structures with TR and SG dayboards. The rhythm shall be composite group flashing on horizontally banded buoys and structures with JR and JG dayboards.
- e. Buoys and structures marking wrecks and other obstructions shall be numbered in proper sequence with other aids to navigation in the same channel or waterway. The letters WR shall be used and shall prefix the regular number.
- f. Wreck markings shall be located near the wreck and on the channel or seaward side of the wreck. More than one aid may be used if necessary to minimize possible confusion as to the actual location of the wreck. The net effect of the wreck markings shall be such that a vessel may pass the markings with safety.
- g. In addition to the use of buoys and structures, lights and/or daymarks may be exhibited from an exposed portion of a wreck.
- h. Racons used to mark uncharted wrecks shall be coded with the morse letter "D".

3. Regulations.

- a. Regulations issued by the Coast Guard concerning the marking of sunken vessels or other obstructions are contained in 33CFR64.
- b. Regulations issued by the Corps of Engineers concerning the marking, abandonment and removal of wrecks are contained in 33CFR209.170 and 209.190.

B. Authority Of And Liaison With The Corps of Engineers

1. General Policy.

- a. The Corps of Engineers, under the Secretary of the army, is the agency charged with the protection and preservation of the navigable waters of the United States, and as such, is authorized to remove or to destroy any Sunken obstruction endangering navigation in such waters when it has existed for a period of more than 30 days or when its abandonment can be established legally in a shorter period of time.

- B. 1. b. In an emergency, such as when a vessel sinks in or otherwise unduly delays the operation of any government lock or canal or sinks in any navigable water of the United States so as to stop, seriously interfere with, or especially endanger navigation the district engineer may take immediate possession in order to remove or destroy the obstruction.
2. Communications With The Corps of Engineers.
- a. Figure 6-1 is a Memorandum of Agreement (MOA) between the Department of the Army and the Coast Guard which establishes a decision process for the consideration of corrective action to be taken by our respective agencies in response to hazards posed by wrecks and other obstructions to navigation. The decision process outlines the factors that influence a determination to mark or remove an obstruction. This, coupled with the delineation of agency chains of command for the resolution of disagreements as to the appropriate corrective action, should result in effective, timely coordination between the Corps of Engineers and the Coast Guard, and greater safety to the users of our nation's waterways.
- b. Upon notification that an obstruction hazard to navigation exists, the district Aids Navigation branch shall consult with the the corresponding COE field level office and propose appropriate corrective action. Any correspondence between the Coast Guard and the owner of a wreck concerning its abandonment shall be forwarded to the district engineer.
- c. If agreement as to the appropriate corrective action cannot be reached, procedures outlined in paragraph 5.d of the MOA shall be followed. The maximum delay after which unresolved issues are forwarded along the chain of command for resolution has not been specified. Normally, however, delays of over thirty days shall be avoided unless progress is being made or is anticipated.
- d. Chief, Short Range Aids to Navigation Division (G-NSR) is the Headquarters-level authority. In addition to forwarding unresolved marking/removal issues to G-NSR, district commanders shall also keep that office informed of potential disputes. Copies of the dispute documentation, required in paragraph 5.d of the MOA, shall be forwarded to G-NSR for information purposes.

C. Liaison With National Ocean Survey

1. General.

- a. District commanders are authorized direct liaison with National Ocean Survey, Washington, D.C. on matters relating to general day to day operations of the districts and National Ocean Survey.
- b. District commanders shall insure that matters involving a change of procedure with National Ocean Survey that would require a service wide change of procedure be forwarded to Commandant for approval of the basic request before it is conveyed to National Ocean Survey.

2. Wreck or Submerged Obstruction Data.

- a. The District, National Ocean Survey has responsibility for investigating wrecks and other submerged objects by wire-drag methods to determine maximum clearance depths and the extent to which the objects constitute a hazard to marine navigation. Before drag assignments are made, it is desirable that they have as much information as possible concerning the items requiring investigation. For example, it assists them to know the type and size of the wrecked vessel or obstruction, who first initiated the report of the sinking, how the position was determined, and the relative accuracy of the position.
- b. District commanders shall forward to the Director, National Ocean Survey, on a routine basis, copies of all wreck or submerged obstruction data shortly after the data is acquired, for use in assisting the planning of survey operations. Data will be addressed to:

Director, National Ocean Survey
Code C322
Rockville, MD 20852

D. Authority of the Coast Guard

1. Coast Guard Marking Authority.

- a. In general, a sunken wreck is no different than any other submerged danger insofar as Coast Guard Authority is concerned. In any waters in which the Coast Guard has authority to establish aids, it may mark (or elect not to mark) wrecks as required by the needs of safe navigation.
- b. Federal law requires the owner of a wreck sunk in the navigable waters of the United States to suitably mark it until removed or legally abandoned. Should the owner fail to do so the Coast Guard may mark it.
- c. The liability of the owner of a sunken obstruction for the costs of Coast Guard marking ends when the obstruction or wreck is either legally abandoned or removed. The district commander acknowledges receipt but does not "accept" any notice of abandonment provided by the owner. This acknowledgment shall state that it shall in no way be construed as acceptance by the United States of the abandonment of the vessel or other obstruction, nor as a waiver of any right to enforce liability for any damage caused by its sinking, for the cost of removal or for the cost of marking (33 CFR 64.10-6, 209.170, 209.190.) A copy of all notices of abandonment shall be forwarded to the Corps of Engineers district engineer. The district commander should be aware that any purported acceptance of abandonment by the Coast Guard could prejudice the ability of the Corps of Engineers to recover removal costs from the owner of the wreck.

2. Action When Requested By Owner. The marking of a wreck by the Coast Guard is for the protection of navigation and not for the sole benefit of the owner. Therefore, a request-by the owner for the Coast Guard to mark it shall be construed to indicate only the owner's inability to do so. Decision to mark or not shall be based on the need of marking for the protection of navigation as determined by the Coast Guard.

3. Adequacy of Marking. Commanding officers of Coast Guard units establish markings by direction of the district commander. They must exercise extreme caution insuring that the marking which they establish conforms to the standards set forth herein and the district commander's instruction.

D. 4. Marking After Abandonment. The legal responsibility of the owner of a sunken wreck to suitably mark it ends when the wreck is legally abandoned. If the wreck is a hazard requiring marking it may be marked by the Coast Guard as long as is necessary for the safety of navigation.

E. Procedures To Be Followed By The Individual Unit

1. Information Required By Marking Unit. When a unit receives a report of or discovers a wreck, a report shall be made immediately to the district commander. It shall include as much of the below information as is available:

- a. The name, description, and accurate location off the wreck.
- b. The name and address of the owner or his agent.
- c. The depth of water over the wreck.
- d. The action or intent of the owner to mark the wreck, and when such action will be taken.
- e. The type, description, and location of the marking, if any.
- f. An opinion as to whether or not immediate marking of the wreck by the Coast Guard is necessary for the protection of navigation.

2. Communication With Owner.

a. If contact is made with the owner or agent, the commanding officer (officer-in-charge) shall provide:

- (1) Information on the owner's legal duty to mark the wreck immediately.
- (2) Notice that if the owner fails to do so immediately, and if the district commander considers the marking of the wreck required for the protection of navigation, the Coast Guard will establish a suitable marking. The charges for the establishment, maintenance and discontinuance of such Coast Guard markings will accrue against the owner until such time as a suitable marking is established by the owner or the wreck is removed or legally abandoned. If practicable, the owner shall be advised of the estimated cost if marking is performed by the Coast Guard. The cost can be determined from Commandant Note 7310.

- |E. 2. a. (3) Information on the duty to make a report to
| the nearest Coast Guard District Office,
| setting forth the following:
- (a) Name of the wreck and accurate location
 - (b) Depth of water over the wreck
 - (c) Location and description of marking established or proposed by the owner
- (4) Note: The intent of the Coast Guard to establish a suitable marking upon the owners failure or inability to comply with statutory duty, does not relieve the owner of the legal responsibility to do so.
- b. Regardless of whether or not the Coast Guard unit first receiving a report of the wreck has been in contact with the owner, the district commander shall communicate with the owner, or the owner's representative, by the most appropriate means under the circumstances and explain the legal responsibilities and duties with respect to marking the wreck, and ascertain the owner's intent to comply with the regulations. The district commander shall inform the owner of the charges for Coast Guard marking thus far incurred or pending, if any. All oral communications shall be promptly confirmed in writing.
3. On-Scene Action B Marking Unit.
- a. If any doubt exists as to whether or not a wreck might be a menace to navigation, the on-scene unit should request instructions from the district commander.
 - b. A complete record of all reports, conversations, correspondence and action taken shall be maintained by the unit.
4. Time Allowed for Markings.
- a. The period of time allowed the owner to suitably mark a wreck before action is taken by the Coast Guard to mark the obstruction shall be determined by the circumstances in each case. Every effort should be made to encourage the owner of a wreck to establish the required markings.
 - b. If it becomes necessary for the Coast Guard to mark the wreck on behalf of the owner, every reasonable effort shall be made to minimize expenses.

- E. 5. Marking Contractor. The district commander is authorized to have the marking of a wreck performed by contract when deemed advisable in the interest of expediency or economy.
6. Tender Scheduling. As the cost of tender time generally forms a large part of the total charge for Coast Guard marking, this charge can frequently be reduced by arranging for discontinuance of a wreck marking during a tender's regular itinerary rather than by requiring a separate trip for this purpose.

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF ARMY AND THE U.S. COAST GUARD

SUBJECT: Coast Guard and Department of Army Responses to Marking and Removal of Sunken Vessels and Other Obstructions to Navigation

1. Purpose. The purpose of this memorandum of agreement (MDA) is to improve the efficiency and effectiveness of the Coast Guard and the Department of Army responses under each agency's respective authorities for the marking and removal of sunken vessels and other obstructions to navigation.
2. Provision of Agreement. This agreement provides procedures on coordination to determine whether an obstruction is a hazard to navigation and procedures to determine the appropriate corrective actions to be taken by both agencies.
3. Definitions. For the purpose of this agreement, the following definitions apply:
 - a. Obstruction: Anything that restricts, endangers, or interferes with navigation. Obstructions can be authorized man-made structures such as bridges, pierheads, offshore towers, etc., or unexpected interferences which must be assessed as to their effect on navigation.
 - b. Hazard to Navigation: An obstruction, usually sunken, that presents sufficient danger to navigation so as to require expeditious affirmative action such as marking, removal, or redefinition of a designated waterway to provide for navigational safety.
 - c. Responsible Field Officers Are:
 - (1) Department Of Army:
 - (a) District Engineer, Army Corps of Engineers District, and
 - (b) Division Engineer, Army Corps of Engineers Pacific Ocean and New England Divisions.
 - (2) Coast Guard: Chief, Operations Division, Coast Guard District.

4. Objectives.
 - a. Promote close coordination and cooperation between the Department of Army and the Coast Guard leading to prompt and decisive action in marking or removal of obstructions declared to be hazards to navigation.
 - b. Provide guidance on the parameters and procedures for making multi-agency decisions for determining when an obstruction should be declared a hazard to navigation.
 - c. Provide the chain-of and relationships for resolving differences of opinion be the Department of Army and the Coast Guard as to the appropriate corrective action to initiate for hazards to navigation.
 - d. Assure timely and effective action to provide safe navigation to the maritime community.
5. Required Actions. Upon receiving reports of sunken vessels or other obstructions to navigation, each agency through its field office will take the following actions:
 - a. Assess the impact upon navigation of each reported obstruction and expeditiously identify appropriate corrective actions. In emergency situations, the agency first on scene should initiate immediate actions to mitigate the hazardous situation.
 - b. Decide through joint consultation and agreement between agency field offices if an obstruction is a hazard to navigation, agree upon appropriate corrective action(s) to reduce the danger to navigation to an acceptable level, and decide which agency shall act as lead agency for contacting the owner, if one exists, of the obstruction and executing corrective actions.
 - (1) Personal Gontacts between agency field offices are encouraged to facilitate decision-making.
 - (2) Timely response dictates that decisions be made at the field office level when possible.
 - (3) Decisions concerning corrective actions shall be supported by records appropriate to the specific case.
 - (4) Marking Issues. In every case where an obstruction is declared to be a hazard to navigation, the location will be marked immediately by the owner. In the event that the owner cannot be identified, refuses to mark the obstruction, (inadequately marks the obstruction, or is otherwise unable to properly mark it, the Coast Guard has authority under 14 U.S.C. 86 to take appropriate action. When necessary the Deparment of Army will assist the Coast Guard in locating and marking hazards to navigation. Marking of an obstruction determined

to be a hazard to navigation does not by itself remove the "hazard to navigation" status of the obstruction; however, under sane circumstances it can be an acceptable alternative to other corrective actions.

(5) Removal Issues.

- (a) Where an obstruction is declared to be a hazard to navigation and removal is the agreed appropriate corrective action, the respective Army Corps of Engineers District Engineer may take the initiative in accordance with 33 CFR 209.190 (h) where in removal of an obstruction under the provisions of Section 19 of the River and Harbor Act of 1899 (33 U.S.C. 414) may be undertaken without prior approval of the Chief of Engineers if the obstruction has been in existence over 30 days or its abandonment by the owner can be legally established in a shorter period, the cost of removal will not exceed \$100,000 for each incident, and all reasonable efforts to require the owner to remove the wreck himself within a reasonable period have been exhausted. If an emergency condition exists, the district engineer may undertake removal under Section 20 of the River and Harbor Act of 1899 (33 U.S.C. 414) which eliminates the necessity to establish abandonment. The district engineers' authority under Section 20 is limited to those removal incidents costing less than \$100,000. For all incidents costing more than \$100,000, prior approval from the Chief of Engineers must be obtained under either Section 19 or Section 20.
 - (b) The Coast Guard has authority for the alteration or removal of obstructive bridges under 33 CFR 114 and has authority to remove sunken vessels when they create a substantial pollution threat to the public health or welfare under 33 CFR 153.
- c. The Coast Guard has authority to disseminate and maintain navigational safety information pertaining to obstructions and is the lead agency responsible for this type of information. This mission is complemented by related services offered by other sources, including the Army Corps of Engineers. Each agency's field offices will immediately notify their counterpart of any reported obstructions and will maintain close coordination to ensure that navigational safety information is disseminated in a timely and effective manner. Free exchange of information related to obstructions, including owner's name and address, will be made between agencies, subject to the requirements of the Privacy Act, 5 U.S.C. 522a.
- d. Disagreements arising over the resolution of problems raised by hazards to navigation. The district engineer and the Chief of Operations will cument the area(s) of disagreement and present them to each other for consideration at least 14 days before forwarding of the issue to higher authority. If resolution cannot be achieved, the problem should be forwarded to the next higher level of authority. At the next higher level, a similar exchange of reviews should be made in the same time frame. If resolution cannot be reached here, a similar referral process should be made until resolution is achieved or the highest referral possible is made. Paragraph 8 delineates the chain-of-command for the purposes of this agreement.

- e. The Coast Guard and Department of Army shall develop individual agency instructions to implant the MDA.
 - f. Field level offices of both agencies shall periodically review the status of existing obstructions to determine the adequacy of corrective action(s), to determine if a resurvey of the obstruction's location is necessary, to revise appropriate records, and to update public notification records.
6. Applicability. This agreement applies to the navigable waters of the United States, as defined in Title 33 CFR 2.05-25.
7. Decision-making Guidance.
- a. Options to consider in formulating appropriate action(s):
 - (1) No action.
 - (2) Charting.
 - (3) Broadcasting and publication of navigational safety information.
 - (4) Marking.
 - (5) Redefinition of navigational area, e.g., channel fairway, anchorage, etc.
 - (6) Removal.
 - (7) Combination of the above.
 - b. Factors (not to be taken as all inclusive) to be considered in determining if a sunken vessel or other obstruction is a hazard to navigation and in determining which course of action(s) listed in paragraph 7.a. is appropriate to increase safety to an acceptable level:
 - (1) The degree to which the obstruction restricts, endangers, or interferes with the navigability of a body of water.
 - (a) Location with respect to navigational traffic patterns.
 - (b) Navigational difficulty at the site of the obstruction.
 - (c) Clearance or depth of water over obstruction.
 - (d) Fluctuation of water level and other hydraulic characteristics.
 - (2) Physical characteristics of the obstruction, including cargo (if any exists).

- (3) Possible movement of the obstruction.
 - (4) Marine activity in the vicinity of the obstruction.
 - (a) Type of commercial and recreational vessel traffic.
 - (b) Density of commercial and recreational vessel traffic.
 - (c) Trends of terway use.
 - (5) Location of obstruction with respect to existing aids to navigation.
 - (6) Prevailing and historical other conditions.
 - (7) Length of time the obstruction has been in existence.
 - (8) History of vessel accidents involving obstruction.
8. Chain-of-command Relationships for Resolution of Differences.
- a. Chief, Operations Division, Coast Guard District/District Engineer, Army Corps of Engineers District.
 - b. District Commander, Coast Guard District/Division Engineer, Army Corps of Engineers Division.
 - c. Chief, Office of Navigation, Coast Guard/Director of Civil Works, Office, Chief of Engineers.
9. Amendment, Duration, and Termination.
- a. This MOA may be modified or amended by mutual Consent of the signatories to this agreement or their designees. A]] such changes will be ented by written agreement.
 - b. This MOA is intended to remain in effect for as long as it continues to serve the purpose and objectives defined herein.
 - c. Either agency may terminate this MOA six months after giving formal written notice of intent to terminate.

10. Effective Date. This MDA is effective 90 days after execution by the Chief, Office of Navigation, U.S. Coast Guard, and the Director of Civil Works, Department of the Army.

T. J. WOJNAR
Rear Admiral, U.S. Coast Guard
Chief, Office of Navigation

OCT 16 1985
(Date)

H. J. HATCH
Major General, USA
Director of Civil Works

10 OCT 1985
(Date)

CHAPTER 7. GENERAL OPERARTION INSTRUCTIONS FOR AIDS TO NAVIGATION UNITS.

A. Introduction.

1. Types of Units.

- a. Watched aids are units with resident personnel responsible for continuous attention to the operation of an aid to navigation. Loran stations, though watched, are not discussed in this manual. Details regarding the operation of watched units are discussed in Chapter 8.
- b. Servicing units are responsible for periodic maintenance of unwatched aids to navigation. Buoy tenders, aids to navigation teams (ANT's) and trained personnel stationed at various units have these responsibilities. A unit may operate a watched aid in addition to servicing other aids in the vicinity. Details regarding the operation of servicing units are discussed in Chapter 9.

B. General Instructions for Aids to Navigation Units.

1. Inspection. The term inspection means to view or examine closely and critically the operating features and methods, care and upkeep, administration, and general overall efficiency of an aid to navigation.

- a. Watched Units. The district commander shall require a thorough general inspection of each watched aid to navigation annually. Inspection checkoff lists prepared by the district staff shall be used as criteria.
- b. Unwatched aids. Inspection of unwatched aids shall be conducted during routine visits. Required corrective and/or preventive maintenance, which may include items such as replacing retro-reflective material, light and/or fog signals, painting and recharging shall be accomplished. Inspection of formally watched lights for structural integrity shall be conducted in accordance with the Lighthouse Maintenance Management Manual (COMDTINST M16500.6).

B. 2. Discrepancy. Failure of an aid to provide advertised light, sound signal, appearance or position as described in the Light List or on charts is a discrepancy. Whenever a discrepancy or damage to an aid is found by or reported to a Coast Guard unit which cannot immediately effect repairs, the district commander shall be notified

- B. 2. by message. The report shall state the exact nature of the discrepancy and corrective action taken. If corrective action is beyond the capabilities of the unit, the report shall include this fact. If the damage or destruction is the result of collision and/or vandalism, the reporting unit shall make every reasonable effort to obtain complete information regarding the situations. (For more information on vandalism see paragraph B.6 of this chapter). If available, report the names and addresses of the vessel or persons involved, including witnesses. Consult Chapter 10 for information on action to be taken in correcting various types of aid discrepancies.
3. Tolerance. The maximum allowable tolerance for light or sound signal rhythm characteristic is +/- 6% of the specified value per period, or 3.6 seconds per minute, whichever is smaller. For revolving lights the tolerance is 3.6 seconds per minute. No tolerances can be prescribed for the positioning of buoys that would be applicable in all situations. The preciseness with which a buoy is positioned is determined by many factors but the ultimate test of the adequacy of any buoy's position is: "Does the buoy adequately serve its intended purpose as portrayed on the largest scale chart and in the Coast Guard Light List?" See Volume 5 for detailed information on buoy positioning.
4. Discrepancy Buoys. Discrepancy buoys may be used to temporarily replace damaged or missing buoys or structures until the discrepancy can be corrected. Discrepancy buoys are used to allow a tender to complete scheduled servicing runs or in-port routines rather than to immediately respond to discrepancies which may be located many miles from the area then being serviced by the tender. Discrepancy buoys may have less signal capability than the aids they replace. Action should be initiated to restore the damaged or missing aid whenever a tender becomes available in the area of the discrepancy without seriously affecting the vessel's routine schedule. See paragraph C.5. of Chapter 3 for more information of temporary aid changes.
5. Unauthorized Changes In Aids. Except in an emergency, each aid shall conform to its current Light List (corrected to date) description. Where deviations from the Light List must be made in emergencies, they shall be reported immediately to the district commander. Another report shall be made when the aid is restored to its authorized condition.
6. Vandalism. Thousands of dollars worth of aids to navigation equipment are ruined each year by vandals. Through vandalism the Coast Guard not only loses valuable

- B. 6. equipment but many hours are wasted in repairing damaged and destroyed aids or searching for sunken buoys. In addition to these losses, discrepancies in the aid system caused by vandals could result in injury to mariners as well as damage and loss to vessels and property. Experience and studies have indicated that vandalism is usually centralized in one or more small areas in each district during specific times of the year, i.e. hunting season, school vacation, etc. District, group and local unit commanders shall take vigorous measures to curb vandalism by employing the following:
- a. Where vandalism is centralized, inform the District Intelligence and Law Enforcement Branch of the vandalism, listing the various acts and providing as much information as possible.
 - b. Conduct a public information effort in the area by providing articles to the local news media with particular attention paid to school newspapers or hunter's digests, etc., stressing the possible harm and definite expense caused by vandals.
 - c. Post official Coast Guard aid to navigation warning signs throughout the area. Attempts should especially be made to place the signs at boat launching ramps, marinas, sporting goods shops or other places where potential vandals or witnesses to vandalism might congregate.
 - d. Stress the penalties that could result from the theft, damaging, defacing, destroying or interfering with aids as provided in 33 USC 411; 18 USC 641, 1361, 1363; and 14 USC 84. The maximum penalties upon conviction, depending upon the statute, are a maximum of five years imprisonment and a \$2,500 fine. Also stress the rewards payable to persons giving information leading to conviction, of one half the assessed fine (33 CFR 70).

C. Servicing Policy.

1. Frequency of Relief of Buoys.

a. Steel Buoys.

- (1) Six years is the minimum on-station period of all steel buoys except where earlier relief is dictated by unusual circumstances. Relief intervals should be extended beyond six years where possible. Normally, buoys shall be relieved only when a servicing unit can no longer maintain the buoy as an effective aid to the mariner

C. 1. a. (2) See Volume 3 for detailed maintenance instructions.

b. Plastic and foam buoys.

(1) Plastic and foam buoys shall remain on-station as long as they can be maintained by a servicing unit and serve as an effective aid to navigation. They should not be relieved or returned to a base unless they are damaged beyond a servicing unit's ability to patch, paint or repair them.

(2) See Aids to Navigation Manual - Technical for detailed maintenance instructions.

2. Frequency Of Routine Visits.

a. Aids On Fixed Structures.

(1) Routine visits to lighted aids on fixed structures and to beacon structures, other than those listed in paragraph d. below, shall be scheduled as determined by the servicing unit using the ATON Servicing Interval Flowchart (ATON SIF) provided in this chapter. Routine visits will be made at least biennially (every two years). A variation of up to two months to coordinate servicing trips is allowed. Inspection of the aid shall be the purpose of the visit.

b. Buoys.

(1) Routine visits to buoys shall be scheduled as determined by the servicing unit using the ATON SIF provided in this chapter. Routine visits will be made at least biennially (every two years). A variation of up to two months to coordinate servicing trips is allowed. These visits will be for the purpose of inspection.

(2) A buoy's position shall be checked each time it is serviced and an on/off station determination made in accordance with the Aids to Navigation Manual - Positioning.

(3) Battery recharging cycles shall coincide with inspection visits, mooring inspections, or reliefs to the maximum extent possible. The effective use of vessel operating time, however, has priority over the economics of using all power available from batteries. The Aids to Navigation Manual - Technical, Chapter 9 shall be used as a guide for determining appropriate rated battery discharge times.

- C. 2. b. (4) Lifting buoys from the water shall be avoided except as required for inspection of moorings, relocation, relief, recharge, or correction of a discrepancy. Inspection of the underwater portion of buoy hulls shall be accomplished in conjunction with scheduled mooring inspections. Inspections that do not require lifting of buoys shall be accomplished, where feasible, by small units such as Aids to Navigation Teams or by the most economical means available.

c. Mooring Inspection.

- | (1) Two years is the normal period between mooring
| inspections for all buoys. These inspections,
| to examine the underwater body, mooring, and
| associated components, should be extended beyond
| two years where possible. The period will be
| determined based on the buoy's location and its
| historical data. However, in known areas of
| accelerated chain wear, such as areas exposed to
| the full force of the seas, inspections will be
| conducted as frequently as is deemed necessary
| by the servicing unit.
- (2) When chain is used, greater chain size than ordinarily recommended (in Volume 3) may be used when this will allow the mooring to remain on station two years or more. This heavier chain must not materially affect the signal characteristic of the buoy.
- (3) The sinker, or anchor, need not be lifted off the bottom unless its condition, or the condition of that part of the mooring that touches the bottom, is questionable.

d. Watched/Monitored Aids

- (1) Aids of such importance that they must be continually watched or monitored, either electrically or electronically, ordinarily require servicing visits more often than every 12 months.
- (2) Similarly, aids composed of one or more of the below types of equipment generally require servicing visits more often than once every 12 months.
- (a) Sound signals requiring a power source in excess of 12 volts.
- (b) Engine generators as primary or secondary power sources.

C. 2. d. (2) (c) Trickle charged batteries used as a secondary Dower source to commercial power.

| (d) Category I, II and III solar powered
| lighthouses and ranges with comparable
| power systems should be visited
| semiannually.

| e. Waterways.

| (1) Each waterway shall be visited by a qualified
| Coast Guard ATON member from the primary
| servicing unit at least once a year. The
| district commander may adjust this schedule for
| special cases. These visits can be in
| conjunction with the inspections listed
| previously. Alternate visits should be during
| nighttime hours. The purpose of these visits is
| the overall assessment of all the aids to
| navigation in the waterway, their proper
| operation, physical condition and their ability
| to meet the needs of the mariners. All ranges
| in the waterway shall be run and their Light
| List advertised values checked. Such a visit
| will be logged by the servicing unit, whether an
| afloat or a shore unit, in an appropriate
| manner.

(2) When scheduling permits, representatives of the
group commander, the secondary servicing unit
and local users should be invited to accompany
the servicing unit during the waterway visits.

| 3. Component Service Period.

| a. All aids to navigation should, ideally, have
| components which are designed to provide trouble free
| operation without service or maintenance for two
| years or longer.

| b. District commanders shall implement a program to
| extend the service of, or eliminate, as many items of
| equipment as possible which require routine
| maintenance more often than once every 24 months.

4. Trends Toward More Frequent Visits.

a. The preceding sections specify scheduling of relief
and routine visits to aids to navigation. Aids that
cannot meet the servicing intervals prescribed herein
may be placed in a schedule corresponding to their
expected endurance.

b. Problems causing a trend to more frequent visits than
prescribed shall be identified. Solutions to these

- C. 4. b. problems such as relocation, change of aid type, change of equipment, or elimination of the aid station shall be considered before assigning a more frequent visit schedule.
- c. The Commandant (G-NSR) shall be advised of any trend causing visits to aids more frequently than prescribed and of proposed solutions to the problem.
- 5. Additional Guidelines.
 - a. District Commanders (san) and ATON units should aggressively pursue extending ocean buoy, minor light and beacon servicing intervals, but also must recognize that there are locations where it would not be prudent. District Offices and ATON units are empowered to use their best local Judgment in making these determinations, using the ATON SIF as a guide.
 - b. Following the standardized procedure(s) recommended in the accompanying ATON SIF, each USCG ATON servicing unit shall review and analyze each nonseasonal ocean buoy and beacon structure assigned. The servicing unit Commanding Officer/Officer-in-Charge shall make a determination, based on the ATON SIF review, and local knowledge and Judgment, and assign a routine servicing interval for each aid. A new SIF worksheet must be completed each time a servicing interval is changed. A brief explanation should be entered in the comments section of the SIF whenever a servicing interval shorter than two years is determined. The SIF should be reproduced locally and maintained in the aid file.
 - c. Scheduled recharges (replacements) for aid batteries should be determined based on the rated battery discharge time (in the case of primary batteries) or maximum service life (in the case of secondary batteries) as published in the ATON Technical Manual, M16500.3 (Series). All planned recharges shall coincide with the aid's routine servicing interval; batteries lacking sufficient remaining service life to reach the next regular service visit shall be replaced. The cost of discarded remaining battery life is minuscule compared to the cost of a service visit.
 - d. Whenever possible, ATON inspections and servicing operations should be accomplished by the least expensive available resource
 - e. District Commanders (oan) should recommend appropriate reallocation of ATON resources, to units (such as ANTs), that perform increased ATON services as a result of these guidelines.

AIDS TO NAVIGATION SERVICING INTERVAL FLOWCHART (ATON SIF)

Name of Aid: _____

Aid # (from ATONIS): _____

ATON Unit: _____

Decision Date: _____ Made by: _____

name (rank or rate)

Results (from use of flowchart): _____ Comments: _____

A. Do routine inspection: _____

_____ annually _____

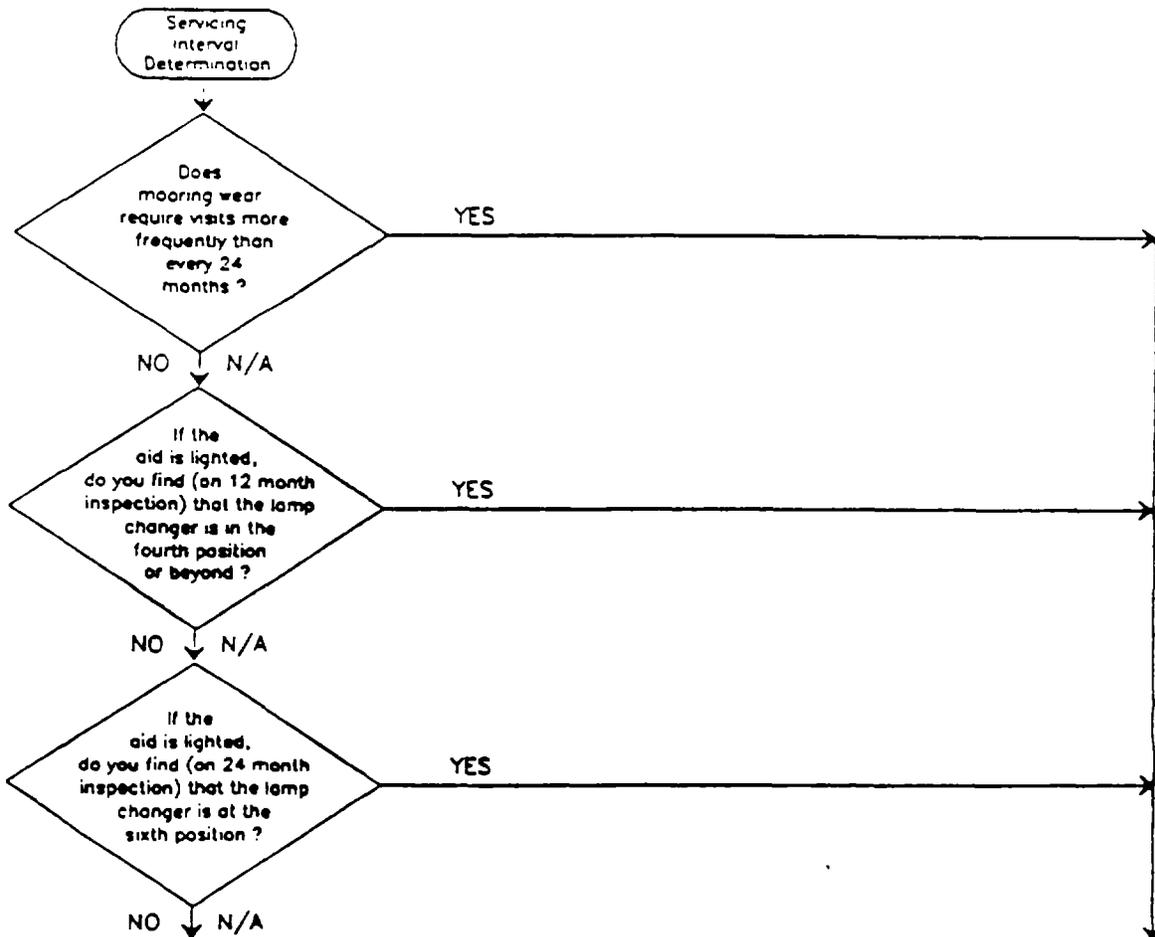
_____ biennially (24 months) _____

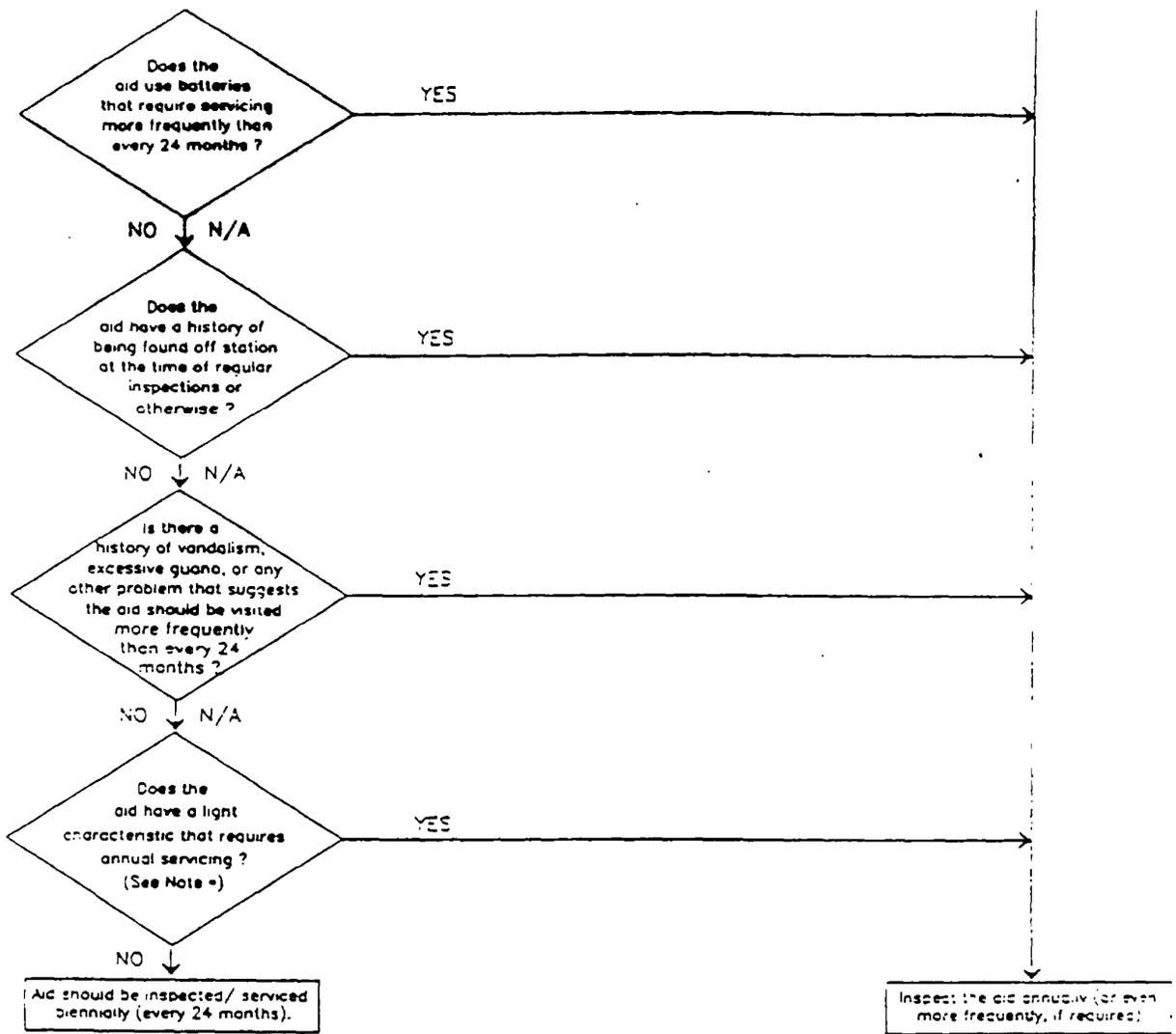
B. Do mooring Inspection: _____

_____ annually _____

_____ biennially (24 months) _____

_____ other _____





Instructions:

This form should be used to evaluate non-seasonal ocean buoys, day beacons and minor lights.

Whenever possible, ATON inspections and servicing operations should be accomplished by the least expensive available resource.

NOTE *: See ATON Manual-Technical (CONDTINST M16500.3) Chapter 9, Table 9-2.

CHAPTER 8. OPERATION INSTRUCTIONS FOR MANNED AIDS TO NAVIGATION

A. Station Bills.

1. General. This chapter provides broad policy guidance on the more routine operations of manned aids to navigation. (Loran Stations are manned aids, but are not discussed in this Chapter. See CG-222-4.).
2. Aids To Navigation Operation Bill.
 - a. Each light station, fog signal station and lightship shall have a signed Aids to Navigation Operation Bill conspicuously posted. This bill, form CG-2814, shall describe the aids to navigation equipment which is installed and the signal(s) to be provided the mariner. The Aids to Navigation Operation Bill shall be prepared by the district commander and sent to the unit via the chain of command. The form shall be signed by the district commander or a designated officer. Shore units which monitor or control automated light stations or large navigation buoys will also have a CG-2814 prepared for each automated unit for which they are responsible.
 - b. Except in an emergency, alterations to the equipment or the signal provided the mariner shall not be made without specific authority from the district commander. Whenever changes are authorized which affect any portion of the bill, a new bill shall be prepared by the district commander and sent to the unit via the chain of command.
 - c. The Aids to Navigation Operation Bill must be amended promptly to conform to changes published in the Light List or in Notice to Mariners. The Light List and Notice to Mariners file (see paragraph C.3.a below) can be used as a guide during the time interval between actual change of characteristic and receipt of an amended Aids to Navigation Operation Bill.

B. Light Stations

1. Lights.
 - a. Aids to navigation light signals shall be displayed during the time of operation shown in the Aids to Navigation Operation Bill. The bill shall be so ordered that only one of the lights is displayed at any one time (for example, by the words "in lieu of the main light," etc.). The high intensity light, or, if none is installed, the main light, shall be displayed at all times when the sound signal is in operation. Whenever the high intensity light is displayed at night, it shall remain displayed until morning to avoid sudden reduction in the light intensity, which from a distance might appear

- B.1.a.Cont. extinguished. Immediately before placing the light in operation, automatic alarms and lampchangers shall be tested. Once in operation, the voltage supplied to the lamp or beacon, the revolutions per minute of the revolving mechanism, or the flasher timing and characteristic of the light shall be checked.
- b. The voltage of the light circuit must be maintained within the voltage limits shown on the Aids to Navigation Operation Bill. Voltmeters, accurate to one percent of the voltage tested, have been installed at all stations for this purpose. These meters shall be red-lined to show the authorized voltage limits, which shall be plus or minus three percent of the rated voltage of the circuit. They shall be checked daily on manned aids and on a regular schedule established by the district commander for remotely monitored lights. When locally generated power is used, the voltage at the main distribution panel shall be checked once each watch. This voltage also must be maintained within plus or minus three percent of rated voltage. Frequency must also be checked and maintained between 57 and 63 cycles.
 - c. When display of any light other than the high intensity light is not required, it shall be secured and readied for operation again. Rotating beacons and classical lens apparatus above the 5th order require protection from the sun's rays of the light source, mounting, and other equipment near the focal point of the lens. This protection can be provided by curtains drawn over the lens, by suitable shielding from the sun of equipment which might be damaged by heat, or by rotating the lens continuously. The district commander shall determine, for each installation, the method of providing the necessary protection.
 - d. The lamp must be properly focused to provide adequate service to the mariner. Correct focus shall be checked each time the optic is cleaned or adjusted, or the lamp is replaced. For more information consult COMDTINST M16500.3.
 - e. A preliminary test shall be made of each new incandescent lamp to detect flaws. When a lamp is replaced at night because of a failure, the person who replaces the lamp should monitor the optic for at least 15 minutes, to confirm the continued operation of the new lamp.
 - f. The lens and lantern must be cleaned frequently to insure maximum brightness. Large first order lenses should be cleaned at least once a week. Storm panes must be kept free of frost. This can be done by rubbing a small amount of glycerin over the surface with a linen cloth, repeating as necessary, or by use of anti-icing fluid available through the Federal Supply System. Broken or cracked panes shall be replaced promptly if they are situated in or near

- B.1.f.cont. the focal plane of the light, or if they may change the appearance of the light from seaward. Broken and cracked color screens shall also be replaced promptly.
- g. The Aids to Navigation Operation Bill shall specify (in the hours of operation section) the order of preference of substitute optics when the main or high intensity light is extinguished. Generally this order shall be such as to preserve the Light List characteristic insofar as possible, and to display a light of maximum possible intensity up to the intensity of the main light. The high intensity light, where installed, is preferred to reduced intensity optics when the main light is extinguished. Whenever an operating light fails, the appropriate substitute shall be placed in operation immediately, and the operating light repaired. See paragraph C.4. for reporting of discrepancies.

2. Sound Signals.

- a. The main sound signal shall be sounded during the times of operation sound on the Aids to Navigation Operation Bill. Immediately prior to placing the sound signal in operation, a careful etion of all sound signal equipment shall be made. Once in operation, the timing and characteristic of the signal shall be checked. This check shall be repeated at the intervals specified in the Aids to Navigation Operation Bill, normally once each watch on a manned aid, and per district commander's instructions on remotely monitored lights.
- b. When sounding of the main sound signal is no longer required, it shall be secure and readied for operation again.
- c. Whenever a discrepancy occurs in the main sound signal the standby sound signal shall be placed in operation. If no standby is installed, or it is also imperative, the emergency sound signal shall be placed in operation. The discrepancy shall be corrected and the main and standby sound signal restored to operation as soon as possible. (See paragraph C.4. below for reporting discrepancies.)

3. Posting Instructions.

- a. Operating instructions shall be posted in the vicinity of each piece of sound and light signal equipment at manned units and at control/monitor equipment on units responsible for remotely monitored lights or buoys. These instructions shall include the material from the Aids to Navigation Operation Bill and:
- (1) Procedure for starting and securing the main and standby equipment;

- B.3.a.
 - (2) Procedure for shifting to emergency equipment;
 - (3) Procedure for checking for proper operation, adjustment (i.e. focusing) and timing; proper operating voltage or air pressure; proper monitor/control equipment operation;
 - (4) Procedure for checking automatic alarms;
 - (5) Maintenance requirements and cleaning instructions;
 - (6) Safety precautions;
 - (7) Coast Guard or manufacturer's instruction book maintenance requirements.
- b. All main, standby and emergency equipment, monitor and control mechanisms shall be operated at least once each week. The regular operation of the equipment will normally meet this requirement.

4. Machinery.

- a. Operation, maintenance and overhaul of equipment and machinery shall be in accordance with current Coast Guard directives and manufacturer's instructions. When records are not required to be kept on standard forms, logs or machinery hours and maintenance accomplished shall be neatly kept in notebooks or the station log, as directed by the district commander.
- b. All main, standby and emergency equipment, monitor, and control mechanisms shall be operated at least once each week. The following test operation schedule shall be followed:
 - (1) Engine generators and compressors: Under load for a period of at least 30 minutes each week.
 - (2) Sound signals and motor-driven equipment: Under load for a period of at least 30 minutes each week. Judgment must be exercised in testing sound signals so as not to unnecessarily annoy residents in the area.
- c. Operating instructions shall be posted in the vicinity of every major piece of machinery on the station. These instructions shall include the items found under paragraph

C. Unit Administration.

1. Watch, quarter and Station Bill.

- a. General. A station Organization Manual is not required. The Aids to Navigation Operation Bill and the various instructions posted near all essential equipment serve this purpose. In addition, each unit shall develop a Watch, Quarter, and Station Bill as described in Coast Guard Regulations, CG-300.
- b. Watch Standing. At stations having two or more members on the crew, at least one shall be present for duty at all times. Watches shall be assigned so that an equal share of work and desirable hours go to each person. Where automatic alarms are installed, a continuous watch is not required, however, frequent checks must be made during storms or periods of reduced visibility.
- c. Automatic Alarms. Automatic alarms are always installed at one man light stations. Except in an emergency, the single officer-in-charge shall not be absent during the periods in which the aids are operating. The district commander shall prescribe the conditions under which the station can be left unattended, including notification requirements.

2. Log Keeping. Light stations and lightships shall maintain unit log form CG-4418, Log-Light Station and Lightships on Station. Other Coast Guard stations with manned aid functions shall maintain the information required by CG-4418, however, if the aid is located at or monitored from a parent station, this information may be recorded in the parent station's log, CG-4380 series. Manned units recording operations of remotely monitored lights will make entries in their logs when the remotely monitored light cannot produce or maintain its characteristics as described in the Light List.

3. Checking Nearby Aids.

a. General Files And Instructions.

- (1) A listing of all aids normally visible from the station shall be maintained in the watch room. A current Light List and file of Notices to Mariners affecting these aids shall also be maintained.

- C.3.a.
- (2) The bearing and range of aids visible from the station and information on how to estimate these bearings and ranges (plus allowances made for wind and tide) will also be provided watch standers.
 - (3) Where specific aids are assigned to a manned aid for monitoring or emergency correction, they shall be listed in the proper space on the Aids to Navigation Operation Bill. The extent to which monitoring is expected is listed for each aid. For example, an accurate fix on a buoy is ordinarily not possible from a light station, but large hanes in the buoy's bearing and range can be detected, and the characteristics of its light can be checked.
- b. Checking Procedure. Buoys shall be observed at least once during daylight hours to insure that they appear to be on their proper station. Unmanned lights and lighted buoys shall be observed at least once after dark for proper apparent range and bearing (considering tide and wind) and characteristic. These observations shall be made more frequently during severe weather conditions, All observations shall be logged.

4. Reporting Discrepancies.

- a. Any aid to navigation which fails to function exactly as described in the Light List or Aids to Navigation Operation Bill reduces the effectiveness of the aids to navigation system. For manned aids it is imperative that discrepancies be immediately corrected or standby or emergency equipment placed in operation. Whenever discrepancies occur which interfere with the advertised characteristic that cannot be corrected immediately, a message report shall be made to the district commander. This report shall include:
- (1) The nature of the discrepancy.
 - (2) Which signal(s) is being maintained.
 - (3) Repairs being made by station personnel, and estimated time to complete these repairs. Another message shall be sent to the district commander as soon as the equipment is back in service.
- b. The district commander may specify units responsible for monitoring and emergency correction of aids. Such instructions supplement this paragraph, but do not relieve the watchstander of his obligation under Coast Omerd regulations to report any discrepancy observed in any aid to navigation.

C. 5. Emergency Evacuation: General Procedures.

- a. Isolated manned aids to navigation, because of their exposed locations, are more often rendered unsafe by extremely heavy weather than are other Coast Guard stations. District Operations Plans generally contain procedures to be followed under heavy weather conditions such as unusually severe storms, hurricanes, etc. These plans shall provide for evacuation of offshore lights when exceptionally severe weather is expected. When such structures are evacuated, the aids are to be left on automatic operation.

- b. The decision as to what conditions require evacuation and the procedure for effecting such evacuation are matters to be determined by the district commander. The structures are individually designed to withstand winds and seas equal to or greater than the most severe weather recorded for the site. It is conceivable, however, that the approach of a storm of record intensity or the weakening of the structure due to age may make evacuation advisable.

CHAPTER 9. DUTIES OF AIDS TO NAVIGATION SUPPORT UNITS

- A. General. This chapter outlines the general responsibilities of tenders, and other servicing units for aids to navigation. The district commander assigns servicing responsibility to individual units for particular aids. This assignment is made in the Aid to Navigation Annex to District Operations Plans, Aids to Navigation Assignment Lists or individual Operation Orders. These references will also contain supplementary district instructions concerning the procurement of aids to navigation equipment, inventory control procedures and reports, logistic support functions, and operation schedules.
1. Discrepancies. Coast Guard Regulations require that all units make every reasonable effort to correct and/or report any discrepancy coming to their attention. Observing all aids in passing regardless of assigned servicing responsibility and stopping to correct observed discrepancies saves overall working time. (See Chapter 10 for actions concerning discrepancies.)
 2. Storm Survey. Promptly following a hurricane, seismic sea wave, ice conditions, or other severe storms likely to cause discrepancies, a survey of all aids shall be made to verify their proper operation. The results of this survey shall be reported to the district commander via the chain of command.
 3. Unit Efficiency. When it is necessary to correct discrepancies on an emergency or unscheduled basis, unit commanders will consider the most efficient yet safe method of responding to the discrepancies. Judicious consideration should be given to employing a smaller unit when possible, rather than requiring a larger unit to recall crew and get underway or extend scheduled operations by diverting a unit to a distant operating area.
 4. Maintenance Schedule. District commanders shall ensure that schedule visits to, and relief of aids are conducted in accordance with the requirement set forth in Chapter 7 of this manual. Units responsible for periodic maintenance of Coast Guard aids shall maintain current Light List(s), charts, Notice to Mariner's file, and records required by SANDS instructions.
 5. Marine Accidents. Upon notification of a marine accident, the Commanding Officer or Officer-in-Charge of the nearest unit capable of checking aids to navigation in the vicinity shall immediately ascertain if the aids were on station and watching properly. Any aid found operating improperly shall be restored to correct operation. The position of all buoys should be carefully checked and recorded. Buoys found off station should be reset on their assigned positions as soon as possible. Personnel of the unit performing the work should not make any statements to news media or representatives of the parties involved in the accident. Such questions should

A.5. be referred to the district commander for response. A
(Cont.) report of the results of this check and action taken should be made to the District Commander as soon as possible after the accident.

6. Remotely Monitored Lights.

a. Should a remotely monitored light listed as a primary light by the Light List either lose its main and standby lights or should any of its signals become erratic (unable to control from monitor/control station), the following action will be taken:

- (1) Energize emergency light; reduce power on aid if possible; notify district commander; broadcast information per paragraph D.5. of Chapter 8 and attempt to reach and repair aid.

7. Destroyed Or Damaged Aids.

a. A summary of destroyed or damaged aids shall be published in the first Local Notice to Mariners of each quarter. After establishing either temporary replacement aids or discrepancy buoys, the district commander shall follow the instructions listed for temporary change in Chapter 3, paragraph C.5.

b. District commanders will insure that district aids to navigation servicing personnel are made aware of the Coast Guard's responsibility for searching for the remains of destroyed aids and marking them if they can not be immediately removed. Not only is floating debris from a destroyed structure a hazard, but submerged stubs of pilings are even more dangerous. Methods of searching for pilings from destroyed aids are discussed in CC-222-2.

B. Tenders.

1. General Duties.

a. Tenders are used primarily for servicing operations which require hoisting buoys and their appendages. They are designed specifically to operate in different environments such as: exposed areas offshore; semi-exposed areas or large bays and harbors; and protected or river areas.

b. In addition to servicing floating aids, tenders may be used to transport men, supplies, water and fuel to lightships or offshore light stations when other, more economical forms of transportation are not available. They may also be employed in carrying construction material, as well as working parties, to points where normal maintenance operations are in progress or where new aids to navigation are under construction.

- B. 1. c. When servicing aids to navigation, the information regarding the aid as published in the Light List (corrected up to date from Notice to Mariners) shall be verified.
2. Servicing Buoys.
- a. In the performance of routine servicing, units shall operate on a definite schedule consisting of servicing trips to specific areas. These servicing trips can be categorized under one or more of the following basic purposes:
- (1) Component Inspection
 - (2) Signal Check
 - (3) Relief
 - (4) Recharge
 - (5) Mooring Inspection
 - (6) Accomplishment of district ATON order
 - (7) Seasonal Changes
 - (8) Position Check
- b. On occasion a tender may also be utilized for the correction of a discrepancy (such as resetting or replacing a buoy on station) where it is not possible to correct the discrepancy using a unit with lesser capability or by the use of a discrepancy buoy.
- c. In actual practice, one or more of the tasks of paragraphs a and b above may be carried out in the course of a single trip. Whenever a visit is made to an aid, for any purpose, tender personnel shall insure that the aid is on assigned position and signal characteristics are as advertised.
3. Supplying Watched Aids.
- a. In a district having isolated light stations, tenders may be used to deliver supplies. They will generally carry fuel or material which a small boat or helicopter could not handle.

- B. 3. b. Since offshore light towers may not be strong enough to provide a mooring for tenders while alongside, commanding officers of tenders servicing these towers must check applicable district policy for guidance.

4. Removing Buoys Under Ice Conditions.

- a. On waters where ice interrupts or prevents navigation during the winter, provision must be made for the temporary removal and replacement of buoys. At least a skeleton system of aids should be kept on station until the last practicable moment to assist late traffic, bearing in mind that the complete removal of floating aids is a task requiring many days.
- b. The restoration of the floating aids in the spring of the year should substantially be a reversal of the removal procedure. At the end of the ice season tenders may occasionally be used in searches for larger, expensive buoys and the recovery of those buoys reported driven ashore at various points. However, since employing tenders in this manner is costly, most buoy search and recovery operations shall be conducted by shore parties and/or small craft.
- c. In coastal rivers and bays where ice accumulates sufficiently to damage buoyage, certain larger lighted buoys subject to ice damage may be removed from station where endangered. In order that such buoys may not be entirely unmarked, ice replacement buoys may be employed, being placed on the regular buoys's assigned position. An ice replacement buoy may be any type less likely than the principal buoy to be damaged.

C. Bases.

- 1. Functions. The chief function of bases, which are large industrial facilities, is to provide a central point accessible to servicing vessels, where buoy repair, supplies, and storage facilities are located. Tenders are frequently homeported at bases.
- 2. Base Facilities.
 - a. Base facilities vary with the type and number of aids and units that they serve. Many have equipment and space for the repair of buoys, and for the repair and servicing of the various types of lighting apparatus in use throughout the district.
 - b. Bases carry a supply of spare parts for all the apparatus used in the area. They also have space for the storage of relief buoys, boats. They usually have facilities for the repair and maintenance of small boats.

- C.2. c. Tools, equipment and supplies in transit may also be held at bases for transportation to units by trucks and tenders.
- d. Bases may prefabricate structures for minor lights and daybeacons, and miscellaneous fittings for aids to navigation equipment. Bases will also serve as an assembly and storage point for new equipment for field construction.

3. Repairs To Aids.

- a. Major repairs to steel buoys will be carried out at bases. Although Steel buoys may receive minor repairs and be repainted on-station, complete overhaul and painting require a considerable amount of space. All buoys brought in from station, after the preliminary scraping given on board the tender, will be thoroughly cleaned and painted in accordance with applicable instructions. Repairs to the buoys necessitated by collision, ice damage, etc., will be made at bases. This may consist merely of straightening parts or bumping out dents, or may involve more extensive work such as renewal of plates or the substitution of new superstructures. While extensive repairs are being made to lighted buoys all lighting apparatus and batteries will be removed.
- b. Plastic buoys are designed to allow repair, overhaul, and repainting by a tender at the buoy's station. Plastic buoys should not be returned to a base except for major repair work resulting from collisions or other causes where the deformation of the buoy body requires correction beyond the capability of a tender.
- c. In dealing with either plastic or steel buoys, the greatest economy of operation is obtained when buoys are allowed to remain on station as long as possible or until their signal characteristics become affected beyond the ability of a tender to make sufficient repairs. Buoys will be returned to base for overhaul only when the conditions presented in Chapter 7 are met.

4. Monitoring And Servicing Large Navigation Buoys (LNB)

- a. Units responsible for monitoring Large Navigation Buoys (LNBs) will use the criteria given in Chapter 8, paragraph D.4.a. for determining when an LNB is off station.

C.4. b. In LNB discrepancies the following action will be taken by monitors/control stations:

- (1) Erratic operation (aid does not respond to commands or responds wrongly): Secure aid or improperly operating equipment; energize emergency light (if main light is extinguished). If all components of aid or main and standby light are secured notify district commander. Make information broadcast if aid totally secured or if shifted to emergency light.
- (2) Sunk or missing: Notify district commander and broadcast information per Chapter 8, paragraph D.5.

D. Aids To Navigation Teams (ANT).

1. Organization.

- a. An ANT is essentially an outgrowth of the light attendant station. An ANT will generally have more personnel and equipment than a light attendant station and will be responsible for servicing more aids.
- b. An ANT may be located at a separate facility or may share existing facilities as a tenant activity with other Coast Guard units. The ANT, however, will be a separate OPFAC unit.
- c. In order to perform the various duties assigned to an ANT the team will ordinarily have both small, trailerable craft (TANB's) and larger, high speed aids to navigation boat (ANB).

2. Functions.

- a. The functions of the Aids to Navigation Team include servicing all short range aids within a specified area as well as maintaining and deploying discrepancy buoys in their area of responsibility.
- b. The primary duty of the ANT is servicing, recharging and correcting discrepancies and has the capability of lifting and relocating small buoys.

|E. Depots.

- | 1. Depots support aids to navigation servicing by providing
| storage, maintenance and repair facilities for AtoN equipment.
| They also may serve as a mooring facility for one or more buoy
| tenders.
- | 2. A typical depot consists of piers, buoy slab, sandblasting and
| painting sheds for buoys, shops, offices and storage areas. They
| provide a link in the "Engineering" level of the maintenance chain
| as outlined in the Engineering Support Program.

10. CORRECTION OF AIDS TO NAVIGATION DISCREPANCIES.

A. GENERAL.

1. Discrepancy. A discrepancy is defined as the failure of an aid to navigation to display its characteristics as described in the Light List or to be on its assigned position. (Temporary changes exceeding the six month time limit permitted by Chapter Chapter 13 administratively are considered to be discrepancies.)

2. Background.

a. The purpose of the Coast Guard SPA program is to provide practicable service to the mariner which is useful, consistent and dependable. Dependability of aids in most geographic areas has been excellent due to high quality equipment and the dedication of an personnel to maintain the aids through routine servicing and rapid response to discrepancies.

b. Coast Guard policy regarding unit response to reported discrepancies has changed considerably over the years. Senior personnel still on active duty can remember their early buoy tender assignments, spending most of their inport time in BRAVO-2 status. At that time, any aid discrepancy, regardless of its nature, was responded to within two hours. While this Policy provided an extremely high level of service to the mariner and greatly enhanced Service image, its drawbacks became unacceptable - it was not cost effective and it placed an undue hardship on personnel.

c. ANNEX A to the 1972 edition of CG-222-1 specifically stated that AN units should not be placed in a standby status requiring higher readiness than BRAVO-24 solely for the purpose of correcting aids to navigation discrepancies. Three levels of discrepancy response defined.

Priority - Correct within 24 hours.

Routine - Correct within 48 hours.

Deferred - Correct when servicing unit next in area.

To help assign response level, many criteria were offered. The response level determined as the result of a subjective process. Consequently, in the absence of objectivity, consistency was lacking in this area. Also, with the stated policy that no unit should be placed on a readiness

- A.2.c.cont. status higher than BRAVO-24 strictly for discrepancy response, the correction requirement for a priority response often couldn't be met and was contradictory.
- d. In June of 1979, ANNEX A to the 1972 edition of CG-222-1 was superseded by ALDIST 311/79, the purpose of which was to provide interim guidance pending a forthcoming change to the manual. Specific levels of discrepancy response (including time criteria for correction) were abolished and all decisions regarding response were left entirely to the field commanders. The basic provisions of ANNEX A were still to be used as guidance in determining proper response to discrepancies.
 - e. Shortly after promulgation of ALDIST 311/79, experienced and knowledgeable personnel set out to establish objective criteria for determination of discrepancy response levels. The factors discussed in the ALDIST as well as ANNEX A were summarized, expanded and molded into a thorough, easily-useable framework which is intended to provide a consistent and objective methodology for determining the proper level of response. A "DISCREPANCY RESPONSE DECISION GUIDE" is presented in section B of this chapter.
3. Detecting and Reporting Discrepancies. Statistics indicate that few marine casualties result from aid discrepancies. However, in those marine casualties related to aid discrepancies, extensive losses have occurred. Therefore, particular attention must be given to checking aid position and characteristics, especially in areas of heavy marine traffic. Simple observation of aids by Coast Guard units while on routine missions is of the highest importance.
4. Evaluating Information and Efficient Response
- a. Once a report of discrepancy has been received by a unit, it is the responsibility of the commanding officer to evaluate the responsibility and accuracy of the information received. For example, a discrepancy report from a pilot may be considered more reliable by some commanding officers than a report received from a pleasure boater.
 - b. It is also the responsibility of the commanding officer to determine the most efficient response to the discrepancy. If the commanding officer feels that the information received is less than accurate, he may choose to dispatch a small boat to confirm/repair the discrepancy or else he may contact other ships in the area of the discrepancy to confirm the report. If the report cannot be confirmed, or if confirmation will take an excessive amount of time, the commanding officer shall respond according to the guidelines of this chapter.

A.5. Dissemination of Information. District commanders shall ensure that information relating to discrepancies is promptly and accurately disseminated through Broadcast and/or Local Notice to Mariners in accordance with Chapter 13.

B. DETERMINATION OF DISCREPANCY RESPONSE LEVEL.

1. Discrepancy Response levels. When an aid discrepancy is reported, a response level for correction of the discrepancy must be determined. The Discrepancy Response Factor (DRF), is defined as a numerical indicator of the criticality of the discrepancy. Once determined, the proper level of response can then be assigned. The higher the DRF, the more critical the discrepancy and, hence, the higher the priority for correction. The five response levels are:

<u>DRF</u>	<u>RESPONSE LEVEL</u>
600 and up	IMMEDIATE: Servicing unit shall respond as soon after notification as weather and resource constraints permit.
450 to 599	HIGH PRIORITY: Servicing unit shall respond within 18 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
275 to 449	PRIORITY: Servicing unit shall respond within 36 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
150 to 274	ROUTINE: Servicing unit shall respond within 72 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
1 to 149	DECISION/DEFERRED: As soon as is practical after receipt of a discrepancy report, the primary servicing unit shall advise district of future plans to correct the discrepancy. If a long period of time will elapse before the primary servicing unit can make the correction, district should coordinate available servicing facilities in order to correct the discrepancy.

The time requirement in each category may be tempered by recognizing that in many instances, weather may not permit

B.1. the desired response or resources may not be available in the
cont. given time frame. From recent research, it was concluded
that the large majority of correction times in the areas
studied were much better than the response times given in the
five preceeding discrepancy response level categories.

2. Discrepancy Response Decision Guide.

- a. Figure 10-1 contains Part I of the Discrepancy Response Decision Guide. Figure 10-2 contains Part II, the Discrepancy Response Factor (DRF) determination section, and a listing of the discrepancy response levels. Figures 10-1 and 10-2 can be reproduced locally. Copies of the completed Part I of the Decision Guide should be kept on file - with the district office, and the primary servicing unit as well as with group offices having operational control of ANT Teams. Once a discrepancy is reported, Part II can be completed and DRF determined. The discrepancy response level is then assigned and coordination between district and unit begins.
- b. Part I of the Decision Aid need be completed only once for each aid to navigation. Part I will require some subjective determinations and may be completed by the servicing unit or the district office. The decision as to who possesses the necessary expertise and local knowledge rests with the district office. Completion will require the exercise of general AN experience and familiarity with the aid to navigation, the waterway it serves, and the function of the aid. It shall be the responsibility of the district commander or Coemmanding Officer in charge to ensure that Part I is completed properly for each aid. In order to avoid confusion in implementing the Decision Guide, the Part I section for a unit should be completed at one time.
- c. The Part I value for each aid shall be reviewed at each annual servicing interval. This review is to ensure that Part I is updated in the event of changes in waterway or aid function considerations for the aid.
- d. How to use the Discrepancy Response Decision Guide:

Part I - In sections A. and B., determine the correct response to each question. Then circle the X directly to the right of that response. Add up the number of X's in each column, multiply by the weighting factor provided for the column, and fill in the blank. Add the sum of the products from each column and enter the total for Part I in the box.

Part II- This part can be completed only after the discrepancy has occurred. Complete Part II for the appropriate aid in the same manner as Part I.

B.2.d.cont. Discrepancy Response Factor - Multiply the Part I total by the Part II total. This product is the DRF.

Discrepancy Response Level - Place the DRF in the appropriate numerical range (see pg 10-3) and assign a discrepancy response level. Initiate necessary action.

e. The value derived from the completion of Part I will place each aid into one of the following categories:

CATEGORY 1	Above 50
CATEGORY 2	46 - 50
CATEGORY 3	41 - 45
CATEGORY 4	36 - 40
CATEGORY 5	Below 36

These categories will enable easy identification of the importance of an aid as well as providing a tool for facilities management. The importance of an aid might also be useful in unusual circumstances, i.e. ice season, assessing storm damage, etc. Intermittently, Commandant (G-NSR) will request category lists for all aids major and minor. For major aid categories, see INST M16500.8, Automation Technical Guidelines.

f. Since the Discrepancy Response Decision Guide is new, it is recognized that changes or improvements to it may be necessary after it has been implemented. Any suggested modifications should be conveyed to Commandant (G-NSR-1). It is the intent of Commandant (G-NSR) to publish and distribute a standard Discrepancy Response Decision Guide form after the current version has been used for a reasonable period of time and suggestions have been received.

C. DISCREPANCY RESPONSE POLICY.

1. It is the responsibility of the district commander to prescribe the specific discrepancy response policy for his district, assuring response times fall within the time frames specified herein. A copy of any supplementary instructions issued to implement policy of this chapter shall be forwarded to Commandant (G-NSR).
2. Due to the complexity of aid systems and differences in such things as local geography and specific purpose of a certain aid, a small number of aids may require a set response, determined without the use of the Decision Guide. For example, an especially critical range or radiobeacon may be pre-assigned to the immediate category, regardless of the nature of the discrepancy because degradation of its function has a high probability of rendering an entire aid system inadequate.

- C.3. Districts having waterways affected by ice information shall develop a specific policy for responding to discrepancies during ice conditions. The categories from Part I (B.2.d.) should prove useful and should be utilized in developing such a policy.
4. District, section and group commanders exercising operational control over aids to navigation servicing units shall review records of outstanding discrepancies on a daily basis, if possible, to ensure that corrective action is being taken in accordance with the provisions of this chapter.
5. Commander, Second Coast Guard District, while receiving guidance from this chapter, shall develop an independent discrepancy response plan suited particularly to his district and forward to Commandant (G-NSR) for approval.

DISCREPANCY RESPONSE DECISION GUIDE

Name of Aid: _____

DISCREPANCY RESPONSE DECISION GUIDE

LLNR: _____

Part I
C

applicable X's and add total points.

WEIGHT FACTOR

A. WATERWAY CONSIDERATIONS

	A	B	C	D
1. Is the waterway relatively narrow? (W/B is the ratio of waterway width to beam of the largest user) a. W/B 10-20? b. W/B 1-10?		X		X
2. Is waterway used by merchant vessels? a. Infrequently? b. Regularly with harbor pilot aboard? c. Regularly without harbor pilot?	X	X	X	
3. Is waterway used by large vessels? a. 100' - 400'? b. 401' - 650'? c. 651' or greater?		X	X	X
4. Is waterway used to carry hazardous cargo?				X
5. Is bottom other than soft?				X
6. Is two-way commercial traffic frequent?			X	
7. Is nighttime traffic frequent?			X	
8. Are other aids to navigation available? a. Many? b. Few? c. None? d. None; but marks turn, shoal or obstruction?	X	X	X	X
Is visibility often restricted? a. To 5nm or less? b. To 2nm or less?		X	X	
10. Is the surrounding area especially environmentally sensitive?				X

B. AID FUNCTION CONSIDERATIONS

1. Is the aid lighted? a. Yes, Nominal range 1-4nm? b. Yes, Nominal range 5-14nm? c. Yes, Is it part of a terrestrial range?		X	X	X
2. Is a racon or radiobeacon provided?		X		
3. Does aid have an especially critical function? (Entrance, approach, obstruction or turn) a. Is it charted as such? b. Uncharted? (i.e., Temporary or new since last edition of chart)			X	X
SUM OF X's				

x1 x3 x4 x6

TOTAL OF PART I + + + =

Form Completed By: _____

Part I Category: _____

Figure 10-1

DISCREPANCY RESPONSE DECISION GUIDE

PART II

Answer questions, circle applicable X's and add total points.

C. DISCREPANCIES	WEIGHT FACTOR				
	A	B	C	D	E
1. Buoy body or cage a. Sinking? b. Damaged?		X			X
2. Mooring off station, adrift or missing?				X	
3. Light a. Extinguished or improper characteristic? b. Burning dim? c. Burning during daylight hours?	X	X		X	
4. Sound signal a. Inoperative or improper characteristic? b. Weak?		X	X		
5. Daymark obliterated or improper characteristic?			X		
6. Racon or RBN inoperative/improper characteristic?			X		
7. Misleading signal?					X
8. Hazard to navigation?					X
SUM OF X's					

x1 x3 x4 x6 x8

TOTAL OF PART II + + + + =

DISCREPANCY RESPONSE FACTOR (DRF)

DRF = Product of Parts I and II = x =

DISCREPANCY RESPONSE LEVEL

<u>DRF</u>	<u>REQUIRED RESPONSE</u>
600 and up	IMMEDIATE: Servicing unit shall respond as soon after notification as weather and resource constraints permit.
450 - 599	HIGH PRIORITY: Servicing unit shall respond within 18 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
275 - 449	PRIORITY: Servicing unit shall respond within 36 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
150 - 274	ROUTINE: Servicing unit shall respond within 72 hours after receipt of discrepancy report or as soon thereafter as weather and resources permit.
1 - 149	DECISION/DEFERRED: As soon as is practical after receipt of a discrepancy report, the primary servicing unit shall advise district of future plans to correct the discrepancy. If a long period of time will elapse before the primary servicing unit can make the correction, district should coordinate available servicing facilities in order to correct the discrepancy.

Figure 10-2

CHAPTER 11. TRAINING

A. National Aids To Navigation School.

- | 1. General. In order to develop a professional service
| force, all officers and enlisted personnel in the Aids to
| Navigation field must continuously participate in
| training. On the job training has been, and should
| continue to be, a key source of unit/district specific
| technical training. A variety of resident courses are
| provided by the the NATON School to meet fleet needs.
| All courses are updated regularly to reflect
| administrative and/or technical advances.

2. Use Of The National Aids To Navigation School.
 - a. To fully utilize the National Aids to Navigation
School, the Commandant (G-NSR) will determine and
provide the essential number of quotas for aids to
navigation training. These quotas will be scheduled
to best take advantage of individual districts "off-
seasons". District commanders will be furnished a
comprehensive listing of the number of personnel
required from each district, per class, as far in
advance as possible.

 - b. District, group, and individual unit commanders shall
attempt to use every training quota offered, and
where applicable, shall impress the need for formal
training upon each commanding officer or officer-in-
charge. Temporary operational demands should not be
allowed to overshadow the future need for an adequate
level of trained personnel. District, group, and
unit commanders shall also ensure that their
personnel are sent to the proper course, attempting
whenever possible to assign graduates of the school
to aids to navigation duties corresponding to their
most recent training. Similarly, district, group and
unit commanders shall verify that the personnel who
will best use the training are in fact being
assigned. Resources should not be expended on
training either "short timers" or personnel whose
ratings or duties rarely involve the type of advanced
training provided by the school.

 - c. Exportable training has been developed to provide
| training to a large number of personnel with minimum
| disruption to a unit's operations. The National Aids
| to Navigation School will, when requested, provide
| exportable training through opportunities such as a
| tender gathering or district seminar. The benefits
| to be considered include the cost advantage of
| sending instructors to the students, the training

2. c. (cont.) environment in the field versus the classroom, and numbers of people who can be trained in short periods of time.

d. Technical Advisor. A technical advisor has been assigned to the NATON School for the express purpose of gathering and dispersing timely information regarding ATON servicing equipments and procedures. The technical advisor will be in liaison with affiliated commercial representatives, headquarters staff, and operational units in an effort to stay abreast of the latest technological and operational developments in the ATON field.

(a) Queries regarding minor ATON equipment and/or servicing procedures should be addressed to the technical advisor.

(b) The technical advisor will make routine visits to a variety of field units to stay current in operational techniques and problem areas. Special visits to units needing specific training as a solution to unique problems can also be arranged through the District Aids to Navigation Office.

3. Officer Attendance Requirements.

a. Officers involved in aids to navigation servicing work or management of the Short Range Aids to Navigation program should receive training at the National Aids to Navigation School if the officer has not attended the school in the past five years.

b. Officers in receipt of orders to one of the following assignments should attend either the Officer Advanced (ANC-OA) or Basic (ANC-OB) Aids to Navigation Course if they have not previously attended that course.

(1) District Aids to Navigation and Waterways Management Branch - Chief and Assistant Chief

(2) Tender - Commanding Officer, Executive Officer, Operations Officer, and First Lieutenant

(3) Certain Headquarters (G-NSR) Branch Chiefs.

(4) Certain MLC, SMD and FDCC personnel whose duties are directly related to aids to navigation systems engineering and management.

4. Petty Officer Attendance Requirements.

a. Petty officers involved in aids to navigation servicing work should receive training at the National Aids to Navigation School.

- A. 4. b. Chief Petty Officers and petty officers assigned as buoy deck supervisors on tenders should have attended the advanced minor aids to navigation course and are required to attend the Buoy Deck Supervisor Course (ANC-BDS) if they have not attended the course within the past three years.
- c. Chief Petty Officers or petty officers assigned as officers-in-charge should attend the Officer Basic Aids to Navigation Course in lieu of the Advanced Minor course.

5. Mandatory Pipeline Training Requirements.

- a. The Cutter Training and Qualification Manual, COMDTINST M3502.4 (series), should be consulted by persons in receipt of orders prior to execution.
- b. Officers or enlisted personnel should schedule their training as soon as possible after receipt of orders, and should coordinate with their present and prospective command to minimize any adverse impact.

B. Aids To Navigation Courses.

1. General. The following sections contain brief descriptions of the courses available at the National Aids to Navigation School at RTC Yorktown. More information and qualifications for students is contained in COMDTINST 1510 (series).

2. Minor Aids To Navigation Courses.

a. Basic (ANC-BM). This one week course is designed for enlisted personnel and civilians assigned to aids to navigation servicing units. It is intended to provide job entry level training in installation, maintenance, troubleshooting, and repair of selected minor ATON lighting equipment and 12 volt power supplies.

- (1) Safety precautions involved in maintenance and repair of minor aids to navigation equipment.
- (2) The functioning, principles of operation, preventive maintenance required, and troubleshooting procedures for minor aids to navigation equipment.
- (3) General content of pertinent Coast Guard directives to the field.
- (4) Hazards and problems that may be expected when working in the field.

- B. 2. a. (5) Hazardous waste disposal.
 - (6) Theoretical and practical aspects of visual signaling.
 - (7) Unit training procedures.
 - b. Advanced (ANC-AM). This two week course is designed for supervisory enlisted personnel (E-5 thru E-9) and civilians of an equivalent supervisory level. It is intended to provide a working knowledge of the following areas:
 - (1) Safety precautions involved in maintenance and repair of minor aids to navigation equipment.
 - (2) The functioning, principles of operation, preventive maintenance required, and troubleshooting procedures for minor aids to navigation equipment.
 - (3) General content of pertinent Coast Guard directives to the field.
 - (4) Hazards and problems that may be expected when working in the field.
 - (5) Basic small boat piloting techniques and positioning buoys using horizontal sextant angles and related computer assists.
 - c. Buoy Deck Supervisor (ANC-BDS). A one week course for chief warrant officers, chief petty officers, and senior petty officers assigned as deck supervisors aboard WLM/WLBs. Topics include maintenance and usage of wire rope, chain, and synthetic lines, and buoy deck operations and evolutions. This course can be presented at a district tender gathering, allowing the evaluation of the actual procedures used by tender personnel.
 - d. Aid Positioning (ANC-P). A one week course designed for boatswain mates, quartermasters, or other personnel needing training in positioning techniques. Topics include grid construction, sextant adjustment and alignment, positioning standards, and proper use of computer generated grids. The course provides hands-on training in computer applications.
3. Officer Courses.
- a. Officer Basic Aids To Navigation Course (NC-OB).

- B. 3. a. (1) This two week officer basic course is designed for commissioned (0-1 and 0-2), warrant officers, civilian administrative and professional engineering personnel, Officers-in-charge and chief petty officers serving in administrative aids to navigation billets (i.e. Group Aids to Navigation Officers).
- (2) This course provides training which, when completed, will give the student a working knowledge in the following areas:
- (a) The statutory requirements from which Coast Guard authority and responsibility in the federal aids to navigation system are derived.
 - (b) Safety precautions pertinent to the aids to navigation mission areas.
 - (c) The application of basic principles in the operation and servicing of an aid system, especially aboard a tender.
 - (d) Specifically, training is provided in the following areas: positioning, SRA system design, Waterways Analysis Management System (WAMS), the theory of illumination, optics and acoustics, operation of power supplies (both primary and secondary), major optical systems, minor lights, sound signals, buoys, and other minor aids to navigation; administrative and operating procedures at bases and on board tenders, with emphasis on safe methods of operation and common failures and methods of reducing them; new types of equipment being planned or tested for possible future use.

b. Officer Advanced Aids To Navigation Course (ANC-OA).

- (1) This two week advanced course is designed for officers in the grade of lieutenant and above, warrant officers in commanding officer assignments, and for civilian administrative and professional engineering personnel in the grade of GS-9 and above. Students should have previously completed the Officer Basic Aids to Navigation Course.
- (2) This course provides training which, when completed, will give the student an advanced working knowledge in the areas listed under the

B. 3. b. (2) (cont.) Officer Basic Course, and principles and interrelations of higher echelon administration in the aids to navigation mission area.

(3) Specifically, this course is provided as a means of updating/refreshing experienced and previously trained officers. Officers enroute to commanding officer assignments will be exposed to a myriad of aids to navigation operations related topics all of which will prepare them to better perform their assigned duties.

4. Major Aids Courses.

a. Automated Aids To Navigation Lighthouse Technician (ANC-LT).

(1) This four week course of instruction covers the operation and preventive maintenance of a Category I standard automated lighthouse. The course is open to E-5 and above and civilians employed by the U.S. Coast Guard. Some background in electronics or electrical systems is helpful.

b. Aid Control Monitor System (ANC-ACMS).

(1) This one week course of instruction covers the operation and maintenance of the Aid Control Monitor system. The course is open to EM and ET ratings, E-5 and above, and civilians employed by the U.S. Coast Guard.

c. Videograph B Fog Detector (ANC-FD).

| (1) This one week course of instruction covers the
| operation and maintenance of the Videograph 'B'
| fog detector. The course is open to EM and ET
| ratings, E-5 and above, and civilians employed
| by the U.S. Coast Guard.

d. Nautel NX Series Radiobeacon (ANC-RB).

| (1) This one week course of instruction covers the
| operation, maintenance and repair of the Nautel
| NX series of radiobeacons. The course is open
| to ETs, E-5 and above and civilians employed by
| the U.S. Coast Guard.

e. Large Navigational Buoy System (ANC-LNB).

| (1) This eight day course of instruction covers the
| various systems used on board Large Navigational

| B. 4. e. (1) (cont.) Buoys. The course is open to E-5 and
| above as well as civilians employed by the U.S.
| Coast Guard. The course is presented aboard an
| LNB, therefore, location of the "classroom" will
| vary based on LB maintenance schedules.

| f. Lighthouse Diesel Maintenance (ANC-M).

| (1) This one week course covers the operation and
| maintenance of the Lister SR and ST series
| diesel engine. The course will include a tear
| down for inspection of the fuel rack and timing
| of the injectors and lube oil pump; Sonicraft
| 9985/F engine controller; environmental control
| systems; Halon fire suppression system;
| batteries and battery charger. The course is
| open to MKs, E-5 and above, and civilians
| employed by the U.S. Coast Guard.

| 5. ADDITIONAL COURSES.

| a. Construction Tender Course (ANC-C).

| (1) A one week course held in the 5TH, 7TH, or 8TH
| districts semi-annually. This course is
| designed for E-4 to E-9 and CWO's (BOSN) serving
| on WLICs.

| (2) Attendance by WLIC CO's and XPO's is mandatory.

| b. Construction Tender Course For MKs (ANC-C-MK).

| (1) A one week course taught annually for the U.S.
| Coast Guard (by Braden Winches in Tulsa, OK,
| Delmag Pile Driving Hammers of Houston, TX, and
| I.C.E Pile Driving Hammers of Charlotte, N.C.).
| This course is for personnel E-5 to E-9 serving
| on WLICs.

| c. Training Team Management Course (ANC-TT).

| (1) A one week course for personnel assigned to the
| District AtoN Training Teams. This once a year
| course covers new policies and material
| developed for the aids to navigation program.

C. District Aids To Navigation Training.

1. General. Completion of one or more of the aids to
navigation courses offered at the National Aids to
Navigation School greatly improves the qualifications of
aids to navigation servicing personnel. However, a
continuing need exists for updating the knowledge of
field personnel based on improvements and new techniques,
dissemination of information peculiar to individual

- C. 1. (cont.) operating areas, and for on-the-job observation and assistance by trained aids to navigation instructors. Hence the need exists for a comprehensive district aids to navigation training program. To meet this need billets have been allocated to districts specifically for aids to navigation training.
2. Aids To Navigation Training Teams.
- a. Each district that is allocated training team billets will maintain at least one mobile training team well qualified for such duties by virtue of training and field experience.
 - b. Personnel selected for training teams should have considerable aids to navigation field experience at various types of units and be graduates of the Major and Minor Aids Courses at the National Aids to Navigation School. Instructor training is mandatory. A current knowledge of hardware and servicing techniques is a prerequisite. Candidates for this assignment should be screened for ability to get necessary points across to field personnel, while at the same time establishing a good rapport and basis of understanding, functioning primarily as counselors, not inspectors.
 - c. Training teams are normally required to visit all aids to navigation units within a district at least semi-annually. The length of the visit may vary in accordance with the expertise of the personnel attached. Visits should be scheduled to coincide with normal unit operations, and the team should participate in the unit's scheduled aids to navigation work.
 - d. Training Teams emphasize daily, on-the-job training, determining problem areas and correcting them on the spot. Training teams should perform the following specific tasks:
 - (1) Conduct training sessions on aids to navigation hardware installation and maintenance procedures at the unit or central location.
 - (2) Assist and monitor units in developing and conducting an aids to navigation training program.
 - (3) Consult with the unit commanding officer or officer-in-charge on the current status of the unit's library of manufacturers instructions and Coast Guard aids to navigation directives and publications.

- C. 2. d. (4) Discuss unit aids to navigation material allowance, making recommendations for changes as required.
- (5) Select a small number of aids to navigation within the units operating area to inspect, and then tailor the training and feedback to the unit to include remedies to any problems found.
- (6) Provide feedback to the operational commander on problems found or specific areas needing improvement at the units visited.
- (7) General reports of trends or overall developments noted in the field will be submitted to the district commander.
- e. Training Teams are to supplement, not replace, unit training programs and use of the National Aids to Navigation School. Additionally, to standardize training methods and material, at least one team member will be required to spend approximately one week every year at the National Aids to Navigation School to attend the AtoN training team management course. The visit will be coordinated by the National Aids to Navigation School.
- f. The number of Training Team members needed may vary among districts, depending on the number of district aids to navigation units, amount of travel necessary to visit units, and district use of the National Aids to Navigation School.
- g. Training Teams should be molded to best suit district needs while accomplishing the ultimate goal of upgrading overall professionalism in the aids to navigation program.

3. District Aids to Navigation Seminars.

- a. The purpose of the district seminar is to provide for the exchange of information between district and field personnel. Participation in these seminars results in better methods of handling equipment, identification of problem areas and solutions, development and promulgation of new techniques, and discontinuance of erroneous practices.
- b. A district-wided seminar for district aids to navigation unit commanding officers and senior group aids to navigation personnel shall be conducted at least annually. In addition to the district wide seminar each group or combination of adjoining groups

- C. 3. b. (cont.) will hold a seminar for group aids to navigation unit officers-in-charge or their representatives, at least once every year. In addition to aids to navigation operating and servicing personnel, civilian employees and industrial managers should attend.
 - c. The seminars shall be conducted by a team from the district and the shore maintenance detachment. Minutes of each seminar shall be distributed to all units in the district having any aids to navigation servicing responsibility with copies to Commandant (G-NSR), (G-ENE) and (G-ECV) plus each district commander (oan), and the National Aids to Navigation School. In this respect each seminar will benefit all district aids to navigation units, and not just those attending a specific seminar, while also providing another avenue for inter-district communications.
4. Training Team Coordinator.
- a. The training team coordinator billet is assigned to the National Aids to Navigation School. This person is the contact point with the school and provides for the gathering and dissemination of information to the training teams.
 - b. The training team coordinator serves as the liaison with G-NSR regarding enlisted quotas for NATON School courses. Queries regarding training requirements, quota availability, course scheduling, etc. should be addressed directly to the training team coordinator.
 - c. A primary function of the coordinator is assisting district training teams. The training team coordinator will review courses taught by training teams and can be made available to visit district training teams upon request.

D. Unit Training

- 1. General. Personnel assigned to an aids to navigation unit must be familiar with the basic aspects of aids to navigation equipment operation and maintenance when their duties are directly related to aids to navigation. In this regard the following minimum training requirements are established:
 - a. Every aids to navigation unit shall ensure that adequate "all hands" training is conducted in safety precautions. At least one "all hands" safety training session will be held each quarter.

- D. 1. b. Minimum requirements for drills, lectures, and instructions found in appropriate publications and instructions shall also be met by each unit.
- c. Lesson plans for various aspects of aids to navigation training can be found in The Unit Training Manual Afloat (COMDTINST M3502.3, Volume VI).
2. Use Of Aids To Navigation School Graduates. Recent returnees from the National Aids to Navigation School should be used as much as possible in planning and conducting unit training. This not only aids in keeping information current but boosts the individual's prestige, thereby aiding overall unit morale.
- E. Yearly Service-wide Aids To Navigation Course.
1. General. Headquarters, Short Range Aids to Navigation Division (G-NSR), Civil Engineering Division (G-ECV), and the National Aids to Navigation School will conduct an annual course for all district aids to navigation branch chiefs and appropriate Maintenance and Logistics Command engineering and real property representatives. The attendees will review common areas of aids to navigation interest and will be briefed by cognizant headquarters personnel on current or projected trends, problems, or developments in aids to navigation.
- F. Aids To Navigation Bulletin.
1. General.
- a. The Aids to Navigation Bulletin is published for information purposes only and is intended to:
- (1) Provide another vehicle of communications between Headquarters, field and staff organizations.
 - (2) Increase professionalism and professional knowledge of all aids to navigation personnel.
 - (3) Improve the esprit de corps of Coast Guard aids to navigation personnel.
- b. Articles relevant to aids to navigation work are appreciated and solicited from anyone. Commanding officers and officers-in-charge are encouraged to use these articles as training aids.

- F. 2. Forwarding Articles. Forward articles to the Editor, Aids to Navigation Bulletin, c/o National Aids to Navigation School, P.O. Box 4, Reserve Training Center, Yorktown, VA 23690-5000. Material intended for the Bulletin does not have to be routed through the chain of command; it may be submitted directly to the editor.
3. Distribution. Commanding officers and officers-in-charge shall make the bulletin available to all hands. Although not required, it is recommended that a file of Bulletins be maintained for future reference.

CHAPTER 12. EXTERNAL RELATIONS

A. Public Relations.

1. General.

- a. Coast Guard personnel at all levels often receive some requests and questions from the public concerning aids to navigation. When this happens, it is of primary importance to remember that the purpose of the Coast Guard in this field is to serve the public. Members of the Coast Guard must exercise tact and courtesy in dealing with questions and requests, and should see that prompt response is made in each case. To avoid delay, response to the public should be made at the lowest level where proper authority exists.
- b. Care must be exercised to avoid making statements which are beyond the authority of the speaker. For example, while the district commander has the authority to make many permanent changes in the aids to navigation system, other major changes must be approved by the Commandant. Requests and suggestions for such changes therefore must be handled with sane care to avoid making commitments which cannot be carried out or which might be contrary to the district commander's or Commandant's policy. Cases have arisen where the statements of the officer-in-charge of a small unit have been quoted as supporting a proposed change in correspondence from members of Congress and others before the proposal reached Headquarters for approval. Such cases can put the Commandant in the embarrassing position of having to disapprove, for budgetary or other reasons, changes which a member of the Coast Guard has publicly stated are necessary.
- c. Another aspect to the problem is that the Coast Guard has the duty of choosing the specific means of meeting an aid to navigation requirement. A member in the field cannot always be sure that the specific aid proposed by the requester is that best method of meeting his need, and should not, in effect, commit the Coast Guard in any particular way.
- d. Proper action for the member in a field unit is to ask the requester to write to the district commander concerning his request, giving full information as to the reasons for it. Such information should include the volume of traffic, the nature of the traffic, whether the traffic is seasonal, and the particular navigation problem that gives rise to the request. Title 33, Code of Federal Regulations Subpart 62.10, specifically shows the information that should accompany public requests for changes in aids. Chapter 3 also contains information useful in dealing with requests for aids to navigation.

A-1-e. Well considered recommendations from field units concerning changes to the aids to navigation system are encouraged. These recommendations may well be the result of inquiries from the public, but discussion of such recommendations with the public should emphasize that the recommendations do not become official Coast Guard policy until approved by the Commandant or district commander, as applicable.

2. Public Access to Aids to Navigation Facilities.

- a. Correspondence received at Headquarters requesting visiting privileges at Coast Guard units in previously unpopulated seashore or lake side locations is an indication of growing importance of recreational areas and the growing number of people who use them. Most numerous are inquires from government, recreational, or park authorities interested in opening unmanned lighthouses to the public.
- b. In response to these requests visitors may be allowed aboard units in accordance with paragraphs 7-2-12 and 10-1-2 of Coast Guard Regulations (CG-300) and the following:
 - (1) Floating units: In accordance with district policy and at the discretion of the commanding officer.
 - (2) Manned Shore Stations: Public visitation at shore units is a long established practice. It is encouraged to the extent that there are sufficient personnel to escort or supervise the movement of visitors on station grounds so as not to interfere with the unit's operation. It is recognized that denying or restricting visitation without justification would result in public complaint. However, indiscriminate visitation should not be permitted. Consistent with operational requirements, group commanders are encouraged to establish visiting hours for units under their commands provided:
 - (a) Adequate control of visitors is possible, and
 - (b) Areas off-limits to visitors are posted.
 - (3) Unmanned Stations: Visiting of unmanned Coast Guard Light Stations is not allowed unless the station is of special architectural or historical significance, i.e., it is only one of its kind or the only structure of its type in the general area, and it is located in a centrally accessible area of a or other well visited public area. Additionally, because of the problems inherent in opening an unmanned station with no Coast Guardsmen available to escort visitors, a sponsor must be found, who, after initially petitioning the district commander for visiting privileges, will provide the services and meet the

A-2-b-(3) (cont'd) requirements set forth in COMDTINST 11106 series pertaining to the safety of visitors and preservation of the station.

c. The light tower at many stations is the major point of interest. However, the extended climb up narrow winding steps, with low overhead openings (trap doors) at one or more landings, and the limited walkway space in the lantern room are potential hazards. The constant maintenance of safety standards and adequate control of visitors is therefore essential. Commanding officers and officers-in-charge of units with light towers open to the public shall review the conditions at these structures and ensure that:

- (1) All practicable safety measures have been taken; i.e., sufficient and proper warning signs and markings on steps, landings, and approaches to trap doors; sturdy and secure trap door latches; and chains at trap doors; and non-slip walk surfaces.
- (2) Escort is provided for visitors, or personnel are stationed at key points, such as the lantern room.
- (3) Children under 12 years of age are accompanied by an adult.
- (4) The rules are not relaxed to accommodate too large a number of visitors.
- (5) Any necessary restriction on visitation that may be imposed is brought to the attention of the unit's immediate commander who will, as appropriate, advise the district commander.

d. Closing-Off Property. When it is necessary to fence off a property to which the public has traditionally had access while disposal action is in progress, the effect on public relations should be considered. In such cases, a sign stressing the temporary nature of the closing and the reasons for such action may forestall much correspondence.

B. Historic Aids to Navigation Structures

1. Introduction. This section is provided to briefly acquaint aids to navigation personnel with historicity requirements so that they will be able to recognize situations in which historic preservation regulations apply. The regulations are published in 36 CFR 800.

2. Background

a. As a result of the expansion of the National Register of Historic Places under the National Historic Preservation Act of 1966, Public Law 89-665, the Coast Guard has a large number of properties that qualify for protection under the

- B-2-a. (cont'd) National Register. The historic preservation law requires the Coast Guard to "locate, inventory and nominate" all properties under its control (Executive Order 11593), and to exercise caution until the inventory is complete to assure that properties that might qualify for nomination are "not inadvertently transferred, sold, demolished or substantially altered" (DOT Order 5650).
- b. Regulations promulgated by the Advisory Council on Historic Preservation (ACHP) under 36 CFR 800 implement Executive Order 11593 and Public Law 89-665 Part 106 and establish the procedures to be followed any time a Federal "undertaking" will have an "effect" on a structure which might be eligible for listing on the National Register or which is nominated for for listed on the National Register. The Coast Guard has sole responsibility for identifying its historical, cultural, architectural, and archeological properties that are or may be eligible for listing in the National Register. This must be accomplished before undertaking any project that might affect such properties.

3. Aids to Navigation Projects Affecting a Historic Property

- a. An aid to navigation project is considered to have an "effect" on a historic aid to navigation property en the project causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural character that qualifies or might qualify the property for the National Register of Historic Places. Routine maintenance of an aid does not generally fall into this category. On the other hand, lack of maintenance resulting in deterioration or destruction of a historic property is considered to have an "adverse effect" on the property and is subject to 36 CFR 800 requirements. Generally, "adverse effects" occur under conditions which include but are not limited to:
- (1) Destruction or alteration of all or part of a property;
 - (2) Isolation from or alteration of its surrounding environment;
 - (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
 - (4) Transfer or sale of a federally owned property without adequate conditions or restrictions regarding preservation, maintenance or use; and
 - (5) Neglect of a property resulting in its deterioration or destruction.

B-3-b. When it is determined that an aid to navigation undertaking" is likely to have a "effect" on a historic property under the ACHP guidelines set fourth in 36 CFR the 800, State Historic Preservation Officer (SHPO) must be notified so that he, together with representatives. From the Federal agency (Coast Guard), can make a determination of whether or not there is "effect". Depending on the delegation of authority at respective and district offices, the logistics property branch will probably have responsibility for liaison with the SHPO's. Since a project cannot be carried out until the requirements of Part 800 have been satisfied, it is beneficial to notify the logistics and property branch as early in the planning stage as possible. If the SHPO, in consultation with district representatives determines that there is "no effect", the Part 800 requirements have been satisfied and the project can proceed. If "effect" is found, the ACHP criteria of "adverse effect" must be applied to the project in consultation with the SHPO and an Envirotal Assessment and consultation with the ACHP may be required (see chart below). The aids to navigation branch will coordinate technical civil engineering and aids to navigation assistance throughout the Part 800 process.

4. Excess Property. Historic Coast Guard aids to navigation property for which there is no further operational requirement should be declared excess to the needs of the Coast Guard (see Real Property Management Manual (M]1011.9) for excessing procedures). The excessing process may be long and cumbersome if there is no other agency or organization ready to take control of the property. Licensing and leasing agreements may provide a solution until the property can be excessed.

C. Relations With User and Public Interest Groups.

1. User Participation in Aid System Design.

a. Although the authority granted under 14USC81 is discretionary, the Coast Guard's policy in regard to establishing or changing aids to navigation is to rely substantially on the recommendation of knowledgeable users. Moreover, the policy includes soliciting the opinions and recommendations of users regularly in evaluations of aids to navigation systems. Despite being an essential part of our procedures, annoucnements of proposed changes in Local Notices to Mariners providing "opportunities for mariners to comment" are not enough. As a continuing process to distinguish between valid needs and costly excesses, the district commander shall promote user participation to the greatest extent practicable. Normally, this will require regular daytime and nighttime travels on waterways by Coast Grd short range aids to navigation personnel in company with users.

- C-1-b. With few exceptions, it is not possible for key district staff personnel to deal directly with all user groups on a regular basis. Field-unit commanding officers generally must be assigned part of this responsibility. For each discrete waterway used for commercial navigation, the district commander should assign a field unit commanding officer to deal with affected user groups in a continuous critical evaluation of aids to navigation effectiveness.
- c. As problems, deficiencies or excesses are identified, fields generally have several courses of action depending upon the procedures promulgated by the district commander. Local solutions, such as correcting discrepancies or making temporary aid changes, should be considered first. Generally these solutions will be neither extensive nor complex and within the authority of the cognizant aids to navigation unit. Occasionally, however, hanging traffic patterns or vessel types will necessitate extensive analysis and redesign. Here, the field unit and the district aids to navigation branch must coordinate solutions with other field units and users. Permanent changes in aids to navigation signals or aid systems require either district or headquarters approval, depending on the extent of the change.
- d. Changes should be presented graphically to interested parties using charts, photographs, drawings or simulation before being advertized in Local Notices to Mariners where changes are often misconceived as irrevocable. Although traditional system design procedures are useful in forming tentative solutions, the opinions of knowledgeable users shall weigh heavily in the decision-making process and be reflected in final recommendations.
- e. The method and extent of user participation should evolve naturally in reaction to the initiatives of the unit to which preliminary critical evaluation responsibility has been assigned. Nominal quarterly travels on cognizant waterways with authorized user group representatives may be adequate in some cases, but on more important waterways, frequent transits, both day and night, in good visibility and bad, will be necessary. Regular participation in meetings of local navigation councils and other forums for review of aids to navigation should be perpetuated by successive command officers, reacting responsibly to and encouraging user redations while extending the contacts established by their predecessors or by district personnel.

2. Public Participation in Aids to Navigation Projects.

- a. User groups include pilots, masters, mates and boat operators. Maritime interests include vessel owners, owner associations, maritime trade associations, the Coast and Geodetic Survey, the U.S. Power Squadron, the Corps of

C-2-a Engineers, and port authorities. Public interest groups include Federal, state and local governments, and diverse citizen associations that are concerned with or might be affected by improvements to waterways. Where dealing with any group, it is important to deal only with the group's authorized representative(s) and not with an individual member whose opinion may not reflect the official position of the group.

b. Aids to navigation improvement projects generally are of little concern to public interest groups. Dredging projects quite often do not affect public interests outside the maritime city, interaction with the public normally being accomplished by the Corps of Engineers in consultation with local ODTPs. There may be occasions, however, when the Coast Guard, because of its obligation for safe and efficient conduct of maritime commerce (33USC1221) should act as lead agency in the reprehensive analysis of appropriate changes for a waterway. For instance, analysis of waterway requirements for accommodating larger vessels, increased vessel traffic or dangerous cargoes, or corrective measures in reaction to a marine tragedy, might affect public as well as maritime interest groups. Public interests, too, should be heard as part of a formal public participation process for deciding appropriate changes to the waterway. In these cases, Federal, state and local agencies alike would be guided by the outcome of the Coast Guard's analysis as effected through maritime and public participation.

c. Public participation -- initiated early in the information and opinion gathering stage of the district aids to navigation project -- should be viewed as an essential part of the decision-making process. Public participation must be encourage by the Coast Guard as a means of identifying and resolving problems, particularly where movements could be perceived as damaging to some segment of the public. Although in no way a substitute for sound decision-making by the Coast Guard, enlightened participation enhances the public's assurance that all changes made are appropriate and provides a framework for cost-benefit determinations that are a necessary part of any improvement project.

e. Enclosure (4), a Procedure for Public Involvement, includes guidance for dealing with public participation issues, no matter how complex. The extent to which the process should be applied depends upon the issue and the judgement of the unit or district commander.

D. Liaison with the Corps of Engineers.

1. General.

a. District commanders shall contact district and division Corps of Engineers offices from time to time, inquire as to

D-1-a (cont'd) which plans for improvement or new developments may affect Coast Guard functions, and obtain information on such plans or developments directly.

b. The Chief of the Corps of Engineers has directed district engineers to provide the following information directly to district commanders:

- (1) Advice as to the authorization by Congress of a project involving changes in channel limits, breakwaters, etc., with a copy of the project documents;
- (2) The proposed operations on such projects during the next fiscal year; and
- (3) Blueprints showing the final location of the channel limits, breakwaters, etc., of the work to be undertaken.

2. Cost Estimation for Corps of Engineers.

a. The estimated cost of Coast Guard aids to navigation must be included in the Corps of Engineers determination of the cost-benefit ratio for any river and harbor project. The total investment in the necessary aids to navigation system must include the cost of any additional personnel and supporting facilities as well as that of the aids themselves. In the absence of a favorable cost-benefit ratio, the Corps of Engineers will generally not recommend the project. In marginal situations, however, the district commander may be asked to review the Coast Guard's estimates with a view toward reducing the overall costs and bringing the project closer to, or within, the limits of the acceptable cost-benefit ratio.

b. The Coast Guard must not be placed in a position where a revision of the aids to navigation supporting facility requirements disguises the actual overall first cost of the project. The first responsibility of the Coast Guard, in support of river and harbor projects, is to provide accurate estimates of its part of the total federal investment required for an adequate aids to navigation system. Recurring operating and maintenance costs should also be provided.

3. Relationship of Coast Guard - Corps of Engineers Authorities.

a. The Coast Guard when establishing aids to navigation, is exempt from the general obligation to obtain Corps of Engineers approval for the creation of an obstruction to the navigable capacity of the navigable waters of the United States (33 USC 1 and 33 USC 403).

D-3-b. Accordingly, in the interest of interagency cooperation, it may be beneficial in many cases to inform the Corps of the establishment of aids to navigation or even to discuss with them problems rising out of such an establishment. The discussions should not be on the basis that there is an obligation to obtain Corps permission prior to their establishment -- except, of course, if the Corps has what might best be called proprietary jurisdiction, as when aids are to be placed on Corps structures such as wing dams, breakwaters, etc.

c. Corps of Engineers approval is required prior to the establishment of moorir buoys, floats, booms, piers, dolphins, and other devices that are not aids to navigation.

E. International Association of Lighthouse Authorities (IAI).

1. The Coast Guard is a member of the International Association of Lighthouse Authorities (IALA). IAIA, which is a non-governmental organization, seeks to exchange information on the technical aspects of maritime aids to navigation and associated operating techniques. The association publishes a bi-monthly bulletin from its headquarters in Paris and sponsors a conference at five year intervals.
2. The Coast Guard has representation on the Executive Committee of the Association and assigns personnel to the various technical sub-committees and working groups. The St. Lawrence Seaway Corporation is an associate member and several United States companies which manufacture and service aids to navigation equipment are industrial members.

CHAPTER 13. NAVIGATION INFORMATION

A. Light List.

1. Description. The Light List describes both federal and private aids to marine navigation maintained by or under the authority of the United States Government. It is compiled and published by the Coast Guard, in 7 volumes, to provide mariners with more complete details regarding aids to navigation than can be found on charts.
2. The electronic Master Light List is maintained in a computer data base. Commandant (G-NSR-3) is responsible for the maintenance of this data base. Each week, corrections are entered which reflect those items reported in the Local Notices to Mariners. These corrections then appear in the Defense Mapping Agency (DMA) Weekly Notice to Mariners and are used to update the master files. This Light List information is available to the public through the Navigation Information Network (NAVINFONET) maintained by DMA. Current data on user selected Light List entries and a summary of corrections is available. For more information on NAVINFONET contact Commandant (G-NSR-3).
3. The following volumes are issued.
 - a. Atlantic Coast, Volume I, COMDTINST M16502.1, describing aids to navigation in United States waters from St. Croix River, Maine to Toms River, New Jersey (First Coast Guard District).
 - b. Atlantic Coast, Volume II, COMDTINST M16502.2, describing aids to navigation in United States waters from Toms River, New Jersey to Little River, South Carolina (Fifth Coast Guard District).
 - c. Atlantic and Gulf Coasts, Volume III, COMDTINST M16502.3, describing aids to navigation in United States waters from Little River, South Carolina to Econfina River, Florida and The Greater Antilles (Seventh Coast Guard District).
 - d. Gulf Coast, Volume IV, COMDTINST M16502.4, describing aids to navigation in United States waters from Econfina River, Florida to Rio Grande, Texas (Eighth Coast Guard District).
 - e. Mississippi River System, Volume V, COMDTINST M16502.5, describing aids to navigation and broadcast facilities on the Mississippi River and adjoining navigable tributaries (Second Coast Guard District).

- A.3.f. Pacific Coast and Pacific Islands, Volume VI, COMDTINST M16502.6, describing aids to navigation in United States waters on the Pacific Coast and outlying Pacific Islands. For the convenience of the mariner, also included are certain lighted aids, fog signals, racons, and radiobeacons on the coast of British Columbia, which are maintained by Canada (Eleventh, Thirteenth, Fourteenth, and Seventeenth Coast Guard Districts).
 - g. Great Lakes, Volume VII, COMDTINST M16502.7, describing aids to navigation maintained by the United States Coast Guard and the St. Lawrence Seaway Development Corporation on the Great Lakes and the St. Lawrence River, above the St. Regis River. For the convenience of the mariners, also included are certain lighted aids to navigation, fog signals, racons, and radiobeacons maintained by Canada (Ninth Coast Guard District).
4. Arrangement. Aids to Navigation are arranged in geographic order as follows.
- a. Aids to navigation in Volumes I, II, III, and IV are listed from north to south along the Atlantic Coast and from east to west along the Gulf Coast. Seacoast aids to navigation are listed first followed by entrance and harbor aids to navigation listed from seaward to the head of navigation. Intracoastal Waterway aids to navigation are listed from north to south on the Atlantic Coast and south to north and east to west on the Gulf Coast.
 - b. Aids to navigation in Volume V are listed in downstream order for those rivers in the Mississippi River System, as shown in the Table of Contents. Each fixed aid bears a number identical to the mileage of the stream at that point, as determined from the latest chart. The mileage of the aid determines its position in the list. The origin (zero), of most rivers is coincident with the river mouth; otherwise, the origin point is named in the heading of each page.

- A.4.c. Aids to navigation in Volume VI are listed from south to north along the Pacific Coast, south to north and east to west in Alaska, and east to west in the Pacific Islands. Seacoast aids to navigation are listed first followed by entrance and harbor aids to navigation listed from seaward to the head of navigation.
- d. Aids to navigation in Volume VII are listed in a westerly and northerly direction on the Great Lakes except Lake Michigan which is in a southerly direction on the eastern side and a northerly direction on the western side.
5. Format.
- a. Each volume of the Light List is arranged in the following sequence.
- (1) Title page
 - (2) Preface
 - (3) Table of contents
 - (4) General information
 - (5) Aids to navigation listing
 - (6) Alphabetic index to aids to navigation
 - (7) International cross reference
- b. There are four types of headings used in the Aids to Navigation Listing. The headings are used to subdivide the listings into geographical areas and to highlight particular waterways.
- (1) Geographical headings (G-header) appear at the top of every page and whenever major geographical boundaries change. Normally this heading reflects the change from Seacoast to Bays, Rivers, and Harbors; and Bays, Rivers, and Harbors to Intracoastal Waterway. Large or otherwise significant waterways are also listed in this heading (e.g., Long Island Sound, Columbia River, Lake Erie, etc.). These headings appear centered on the page, in bold type, upper case. Certain amplifying information appears in upper/lower case.

Examples:

Examples:

SEACOAST (Maine)

WASHINGTON - Thirteenth District

INTRACOASTAL WATERWAY (Florida) - Seventh District

- A.5.b.(2) Chart reference headings (S-header) indicate the best scale chart on which the aids to navigation appear. These headings appear in bold type, upper case. The chart number is listed in parenthesis in upper/lower case. This heading is the name of the chart on which the aids to navigation appear.

Example:

Example:

WEST END OF LAKE ERIE (Chart 14830)

- (3) Major waterway headings (U-header) indicate bays, rivers, channels, and harbors. These headings appear in bold type, upper/lower case. Often they are part of the name of the aid to navigation.

Example:

Example:

Mobile Bay

Texas City Channel

- (4) Minor waterway headings (B-header) indicate smaller channels, rivers, marinas, etc., contained within a major waterway heading. These headings appear in bold type, upper/lower case. These headings may not be distinguishable from the major waterway heading at first glance, but will be apparent if appearing at the top of a page.

Example:

Example:

Boca Grande Yacht Basin Channel

- c. Other lines of text, known as preceding lines, are occasionally included before the aids to navigation listing itself, but after the headings. These text lines appear as italic type, upper/lower case and contain amplifying information concerning the entire waterway referenced by the preceding heading. This information usually summarizes what would appear in columns 2 (Name and Location) or 8 (Remarks) into one entry rather than repeating it for each aid to navigation.

Example:

Example:

Due to frequently changing conditions, positions of aids to navigation are not listed.

Buoys are located 50 feet outside channel limits.

- A.5.d. Other information is permitted, provided it applies evenly to the aids to navigation below the referenced heading.
- e. The Aids to Navigation Listing is divided into eight columns. Each column contains specific information.
- (1) Column 1 (Light List Number) - This column contains the Light List number. Aids to navigation are arranged in geographic order. All permanent aids to navigation are assigned a Light List number, except in Volume V where aids to navigation are listed by river mileage. Light List numbers are normally a whole number such as 5, 250, 345, etc. Decimal numbers are assigned when a whole number is not available (1.1, 141.10, etc.).
- (a) The number appears on the first line of the entry. Aids to navigation that are listed in both the Seacoast Section and the Bays, Rivers, and Harbors Section will be assigned cross-reference numbers. Any cross-reference number will appear in this column, immediately below the Light List number.
- (b) In order to remove decimal numbers, each volume of the Light List will be periodically renumbered, by fives, in its entirety by Commandant (G-NSR-3). Consult Commandant (G-NSR-3) to coordinate renumbering upon completion of large projects.
- (2) Column 2 (Name and Location) - This column contains the name of the aid to navigation and amplifying information on the location (e.g., "Marks reef" "50 yards outside channel limits."). No abbreviations are used in the name. The following rules apply:
- (a) The name of lights with a nominal range of 10 nautical miles (NM) or greater (10 statute miles (SM) in the Great Lakes) appear in boldface type, upper/lower case. In addition, radiobeacons, racons, and fog signal stations are also listed in this format.

- A.5.e.(2) (b) The name of lights with a nominal range less than 10 NM (10 SM in the Great Lakes), range lights, and privately maintained lights appear in regular type, upper case only.
- (c) The name of lighted buoys appear in italics, upper/lower case.
- (d) The name of unlighted buoys and daybeacons appear in regular type, upper/lower case.
- (e) When four (4) or more aids to navigation contain the same name, a heading (U-header or B-header) is added and the portion of the name is replaced with a hyphen.
- (f) All entries on the second and subsequent lines are indented two spaces.
- (g) Amplifying information, if included in the column, starts on a new line and appears in the regular type, upper/lower case. If the name of the aid to navigation describes the hazard, amplifying information shall not be used except to describe additional features not included in the name.
- (h) Listings for the rear range light contain amplifying information describing the distance in yards or feet, and the bearing from the front range light. The distance is listed to the nearest whole foot or yard. If the range exceeds 999 feet or yards, a comma is used. The bearing is rounded off to the nearest tenth of a degree, using standard mathematical rounding procedures.
- (i) In the case of multiple lights contained in a listing, the number of lights is listed in parenthesis at the end of the name.

Example:

Example:

SOUTH TOWER OBSTRUCTION LIGHTS (2)

- (3) Column 3 (Position) - This column contains the latitude and longitude of the aid to navigation. Direction labels appear at the top of the page in this column (e.g., N/W) or whenever any direction label changes (NOTE: This should only occur in Volume VI).

- A.5.e. (3) (a) The position is rounded off to the nearest tenth of a degree. Standard rounding procedures apply. Positions are not required for all aids to navigation. When aids to navigation are not charted due to frequently changing conditions, the positions are not listed. A preceding line is used to bring attention to that fact. The positions of all aids to navigation in a channel need not be listed. Choose significant aids to navigation that represent the beginning, major turns, bends or intersections, and junctions of channels.
- (b) If a chart referenced in the Chart reference heading (S-header) is issued referencing NAD83, the positions in this column shall be converted to NAD83, and corrections shall be issued.
- (4) Column 4 (Characteristic) - If lighted, this column contains the light characteristic of the aid to navigation. The flash characteristic appears in bold type and the period is in regular type. (See C.2 for a listing of abbreviations to be used.) If the light has a sector or sectors, that fact is noted on the second line, in bold type. The bearings of the sector(s) appear in column 8 (Remarks).

Example:

Example:

Fl W 4^S
(R sector)

F G

Iso R 6^S

- (5) Column 5 (Height) - For fixed aids to navigation, the focal height (in feet) above water for the aid to navigation is listed here. In the Great Lakes, the height in meters is also listed, below the height in feet, in bold type.
- (6) Column 6 (Range) - The nominal range in nautical miles, for lighted aids to navigation, is listed here. In the case of a light with sectors, the color with the greater range is listed first, with the letter designation of the color. Nominal range is not listed for range lights, directional lights, leading lights, or private aids to navigation.

A.5.e.(7) Column 7 (Structure).

- (a) Lighted buoys will only list the color of the buoy hull. The color of the topmost band of preferred channel buoys shall be listed first.

Example:

Example:

**Green. Red. Red and green bands.
Red and white stripes; red spherical topmark.**

- (b) Unlighted buoys will be listed with the color and shape of the buoy. The color of the topmost band of preferred channel buoys shall be listed first.

Example:

Example:

**Red nun. Green can. Green and red bands; can.
Red and white stripes; sphere.**

- (c) Fixed aids to navigation will be identified by daymark and structure type (e.g., pile, skeleton tower, dolphin, spindle, post, etc.). Construction material (steel, wood, etc.) is not listed.
 - (d) Major aids to navigation may contain further descriptions of the structure when necessary.
 - (e) Height above ground, in feet, may appear on a separate line following the description of the structure.
- (8) Column 8 (Remarks) - Remarks are used to provide amplifying information not appropriate to any other column. Each separate comment begins on a new line, left flush to the column. Subsequent lines of a comment are indented one space. This allows separate comments to stand out from each other as separate issues. References to sound or electronic devices are made by first stating the device (e.g., HORN, BELL, RACON, RBN) in upper case, then describing the characteristics of the device. Bearings for sectors are listed as viewed from the observer toward the aid to navigation.

Examples:

Examples:

RBN: 314 kHz MR (-· ··).
Antenna on light tower.
HORN: 1 blast ev 15^s (2^s bl).
Private aid.
Storm warning signals
displayed by day.

6. Issuance.

- a. The Light Lists are printed on an annual basis with the exception of Volume V which is biennial, and are updated throughout the year via the Local Notice to Mariners. Additionally, corrections are provided via the Defense Mapping Agency (DMA) Weekly Notice to Mariners and through the Navigation Information Network (NAVINFONET). Once printed, distribution to public sales agents is a function of the U.S. Government Printing office. A notice advising district commanders of the availability of Light Lists will be forwarded from Commandant (G-NSR-3) for publication in the Local Notice to Mariners.
- b. Light Lists are issued automatically to units through the Defense Mapping Agency (DMA) automatic distribution system. District offices will receive their copies directly from the printer.
- c. Light Lists are also for sale to the public and may be obtained from the Superintendent of Documents, U.S. Government Printing office (GPO), Washington, DC 20402; GPO branch bookstores located in many cities; or from designated sales agents referenced in the NOS or DMA Chart Catalogs for the appropriate area.

7. District Master (Loose-Leaf) Light List.

- a. The District Master Light List is a one sided, unbound (loose-leaf) copy provided by Commandant (G-NSR-3) prior to the release of the bound copies. The Master Light List is used to record all changes which are to be incorporated into the next Light List edition. Each district staff shall ensure the Master Light List is complete and maintained up-to-date on a daily basis. All corrections shall be noted in blue color and annotated with the Local Notice to Mariners number which announced the change. The Master Light List shall be proofread by a second person, in order to ensure all corrections have been noted.

- A.7.b. Prior to publishing a new edition of the Light List, Commandant (G-NSR, 3) will request the districts to forward the Master to Headquarters. Once received, Commandant (G-NSR-3) will compare the Masters for correctness. The district Master will be returned with notification of the last Local used to update the data base. Subsequent corrections from the last Local to the issuance of the new Light List shall be maintained in red. The corrections in red will constitute the Summary of Corrections.
- c. Upon receipt of a new edition of the Master Light List, the district staff shall prepare the Summary of Corrections. The Summary will be used to update the new edition of the Light List from the cut-off date to the current date. An Announcement of Availability will be forwarded by Commandant (G-NSR-3). Upon receipt, the Announcement and the Summary shall be published in the next edition of the Local.
- d. Once the Summary of Corrections is published the new edition of the Light List must be referenced in the Local Notice to Mariners.

8. Geographic Names.

- a. The U.S. Board on Geographic Names (BGN) is a Federal body comprised of representatives of several Federal agencies. The Board is responsible for maintaining uniform geographic name usage throughout the Federal government.
- b. A publication titled Decision on Geographic Names in the United States is published quarterly. Commandant (G-NSR-3) has obtained a subscription for this publication for each district (oan). When received, each district shall review the actions of the BGN and make appropriate changes to the Light Lists and charts. Questions should be directed to Commandant (G-NSR-3).

B. Local Notice to Mariners.

1. Description.

- a. The Local Notice to Mariners is the primary means for disseminating information concerning aids to navigation, hazards to navigation, and other items of marine information of interest to mariners on the waters of the United States, its territories, and possessions.

- b. Each district shall **issue** at least one Local Notice to Mariners each week, with the exception of Ninth District which ceases publication at the close of the navigation season.

2. Responsibility and Distribution.

- a. Each district commander is responsible for issuing a Local Notice to Mariners concerning information that contributes to navigation safety and maritime security within the boundaries of the district. The District Commander has broad discretion in determining the content of safety and security information in the Local Notices to Mariners. Other important information of wider geographical application, such as changes to Traffic Separation Schemes, may also be published.
- b. **Individual issues of the Local Notice to Mariners are available free of charge over the Internet from the Coast Guard Navigation Center (NAVCEN) web site (www.navcen.uscg.gov).**
- c. **A brief notice concerning the availability of the Local Notice to Mariners from the NAVCEN website shall be included in each issue.**
- d. **Prior to publishing the Local Notice to Mariners, an electronic copy of chart corrections shall be transmitted to the National Ocean Service/NOAA to conduct a quality control review prior to the information being published.**
- e. **A complete paper copy of each Local Notice to Mariners shall be retained at the district office for a period of 10 years and then forwarded to the Federal Record Center. For complete guidance, reference COMDTINST M5212.12 (currently under revision).**

3. Scope: Local Notices to Mariners are primarily used to publish information concerning the establishment of, changes to, and deficiencies in aids to navigation. Local Notices to Mariners can also include, at the District Commander's discretion, any other information pertaining to the navigational safety or maritime security of the waterways within each Coast Guard District. This information potentially includes:

- a. Reports of channel conditions, obstructions, hazards to navigation, dangers, anchorages, restricted areas, regattas, and similar items.

- b. Information concerning charts covering waters within district boundaries.
- c. Oil, gas, mineral, and related industry information including:
 - (1) The establishment or removal of drill rigs and vessels.
 - (2) The proposed construction and establishment of artificial islands, fixed structures, and subsea installations.
- d. Information on bridges such as Public Notices or other information that concerns:
 - (1) Proposed construction of new bridges or modifications to existing bridges.
 - (2) Available clearance after construction or when a modification is actually completed.
 - (3) Changes in clearances, either permanent or temporary, of existing bridges.
 - (4) Proposed changes in drawbridge operations or regulations.
 - (5) Deviations from published drawbridge regulations.

B.3.d.(6) Time and place of public hearings.

Note: The entire Public Notice shall not be published in the Local. A brief summary of the notice and where a copy of the Public Notice can be obtained shall be included.

- e. Changes relating to aerobeacons for charting purposes.
- f. Establishment, discontinuance, or relocation of Coastal Storm Warning Displays and any Coast Guard station with search and rescue capabilities as listed in Coast Pilots.
- g. Uses of radar transponders on vessels for safety purposes (47 CFR 80.605(d)).

4. Special Local Notice to Mariners.

- a. A Special Local Notice to Mariners which includes the following information shall be published annually.
 - (1) Selected paragraphs similar in scope to those appearing in Defense Mapping Agency Notice to Mariners No. 1. This notice should also include a listing of chart sales agents, particulars on how to report discrepancies in aids to navigation, the phone numbers and the assigned area of aids to navigation units, etc.
 - (2) A list of all Coastal Storm Warning Display stations within the district. This list is compiled by the National Weather Service and distributed to the district commanders by the National Weather Service.
 - (3) The Special Local Notice shall contain a general warning concerning reliance upon aids to navigation. The general warning shall be:

CAUTION TO BE USED IN RELIANCE UPON AIDS TO NAVIGATION.
THE AIDS TO NAVIGATION DEPICTED ON CHARTS COMPRISE A SYSTEM OF FIXED AND FLOATING AIDS TO NAVIGATION WITH VARYING DEGREES OF RELIABILITY. THEREFORE, PRUDENT HARINERS WILL NOT RELY SOLELY ON ANY SINGLE AID TO NAVIGATION, PARTICULARLY A FLOATING AID TO NAVIGATION. WITH RESPECT TO BUOYS, THE BUOY SYMBOL IS USED TO INDICATE THE APPROXIMATE POSITION OF THE BUOY BODY AND THE SINKER WHICH SECURES THE BUOY TO THE SEABED. THE APPROXIMATE POSITION IS USED BECAUSE OF THE PRACTICAL LIMITATIONS IN POSITIONING AND MAINTAINING BUOYS AND THEIR SINKERS IN PRECISE GEOGRAPHICAL LOCATIONS. THESE LIMITATIONS INCLUDE, BUT ARE NOT LIMITED TO, INHERENT IMPRECISIONS IN POSITION FIXING METHODS, PREVAILING ATOSPHERIC AND SEA CONDITIONS, THE SLOPE OF AND THE MATERIAL MAKING UP THE SEABED, THE FACT THAT BUOYS ARE MOORED TO SINKERS BY VARYING LENGTH OF CHAIN, AND THE FACT THAT THE BUOY BODY AND/OR SINKER POSITIONS ARE NOT UNDER CONTINUOUS SURVEILLANCE BUT ARE NORMALLY CHECKED ONLY DURING PERIODIC MAINTENANCE VISITS WHICH OFTEN (cont.)

OCCUR MORE THAN A YEAR APART. DUE TO THE FORCES OF NATURE, THE POSITION OF THE BUOY BODY CAN BE EXPECTED TO SHIFT INSIDE AND OUTSIDE THE CHARTED SYMBOL. THE MARINER IS ALSO CAUTIONED THAT BUOYS MAY BE EXTINGUISHED OR SOUND SIGNALS MAY NOT FUNCTION AS THE RESULT OF ICE, RUNNING ICE OR OTHER NATURAL CAUSES, COLLISIONS, OR OTHER ACCIDENTS. FOR THE FOREGOING REASONS, A PRUDENT MARINER MUST NOT RELY COMPLETELY UPON THE POSITION OR OPERATION OF FLOATING AIDS TO NAVIGATION, BUT WILL ALSO UTILIZE BEARINGS FROM FIXED OBJECTS AND AIDS TO NAVIGATION ON SHORE. FURTHER, A VESSEL ATTEMPTING TO PASS CLOSE ABOARD ALWAYS RISKS COLLISION WITH A YAWING BUOY OR WITH THE OBSTRUCTION THAT THE BUOY MARKS.

(4) The Special Local Notice to Mariners shall include general information concerning the implementation of North American Datum of 1983 (NAD83). Enclosure (6) shall be used as copy for this purpose.

- b. Generally, this special notice shall be the first of the new year. Those Districts having a regular and a summer (boating season) mailing list may delay publishing the Special Local Notice until the latter list is activated.
- c. Each district shall mail a copy of the Special Local Notice to each of the other districts.

C. Format of the Local Notice to Mariners.

1. General.

- a. Each notice shall be numbered consecutively during the calendar year.
- b. Each notice shall be dated the date of the cut-off of information being included in the notice.
- c. Use 15 pitch or a closely similar "type style" of standard width and weight.
- d. Information shall be printed on both sides of a page, with the exception of Light List corrections.
- e. A notice stating that questions or inquiries about the Local Notice to Mariners should be directed to the Commander (oan) shall be included on the first page.
- f. When information contained in a Broadcast Notice to Mariners is still significant at the time the Local Notice to Mariners reaches printing, the following paragraph shall be inserted on page 1:

"Information concerning aids to navigation promulgated by BNM _____ to BNM _____ have been incorporated in this notice if still significant."

- C.1.g. Pages shall be numbered "Page 1 of 6", etc., at the bottom of each page. The enclosures shall be numbered separately.
- h. Information in the notice shall be arranged in the same geographical sequence as the Light Lists with the exception of the Chart Corrections. This shall apply equally to channel reports, bridges, notice of regattas, reports of obstructions, designation of danger areas, etc.
- i. Sketches or reproductions of portions of charts on which information concerning changes in aids to navigation are indicated may be included in Local Notices to Mariners when they will assist the mariner in interpreting the data more easily. Reproduced chart portions must be annotated with the statement "NOT TO BE USED FOR NAVIGATION." They may be prepared and included for, but not limited to, the following:
 - (1) When aids to navigation are moved to facilitate dredging operations or for the safe guidance of marine traffic.
 - (2) When a number of changes are made in a locality at the same time.

2. Abbreviations

- a. The following standard abbreviations will be used in writing of Local Notice to Mariners. These abbreviations are consistent with agreements between National Ocean Service (NOS), Defense Mapping Agency (DMA), and standards established by the International Hydrographic Organization (IHO) and International Association of Lighthouse Authorities (IALA).
- b. All Local Notice to Mariners items concerning Large Navigational Buoys shall include the notation (LNB) in the buoy name. The abbreviation (SPM) shall be included in all items concerning lighted single point mooring buoys used by tankers. The abbreviation (ODAS) shall be used for all anchored oceanographic data buoys.

EXAMPLES

Al	-Alternating	Lt	-Light
bl	-blast	MHz	-Megahertz
bu	-blue	Mo	-Morse Code
C	-Canadian	Oc	-Occulting
Dbn	-Daybeacon	ODAS	-Anchored Oceaongoing Data Buoy
ec	-eclipse	Q	-Quick
ev	-every	R	-Red
F	-Fixed	racon	-Radar beacon
fl	-flash	Raref	-Radar reflector
F1	-Flashing	RBN	-Radiobeacon
FS	-Fog Signal	s	-seconds
G	-Green	si	-silent
I	-Interrupted	SPM	-Single Point Mooring Buoy
Iso	-Isophase	W	-White
kHz	-Kilohertz	Y	-Yellow
LNB	-Large Navigational Buoy		

3. Sequence.

- a. The following sequence of sections shall be used in the Local Notice to Mariners.

- (I) Special Notices
- (II) Discrepancies - Discrepancies Corrected
- (III) Temporary Changes - Temporary Changes Corrected
- (IV) Index of Waterways
- (V) Chart Corrections
- (VI) Advanced Notice of Changes to Aids to Navigation
- (VII) Proposed Changes to Aids to Navigation
- (VIII) General
- (IX) Additional Enclosures (Enclosure 1, Light List Corrections)

NOTE: If there are no Light List corrections, Enclosure 1 will state 'NONE'.

- b. Questions on the format should be directed to Commandant (G-NSR-3). Headquarters and district staffs shall work closely together on this matter.

4. Accuracy.

- a. Accuracy is of prime importance in the positioning of an aid to navigation and the reporting of that position.

- b. A complete set of charts for a District's area of responsibility shall be maintained. Aids to navigation information on these charts shall be kept up-to-date from information supplied by units doing the aid to navigation work.
- c. Prior to advertising new positions for short-range aids-to-navigation, positioning results shall be verified by district staffs in accordance with Chapter 7 of COMDTINST M16500.1C.
- d. **Before a Local Notice to Mariners is issued, all information shall be verified by someone other than the person who prepared the document. Consult the District copy of the approved CG-3213. A checklist shall be used to ensure all information is correct.**
- e. During each visit to an aid to navigation, servicing units shall verify all data published in the current Local Notice to Mariners, Light List, on nautical charts, and in Coast Pilots. Errors and omissions will be brought to the attention of the district.
- f. The position of new fixed structures must be determined to an accuracy required by its accuracy standard (See **Chapter 5 of COMDTINST M16500.1C**). When a Local Notice to Mariners is issued before a post-construction survey can be completed, the notice shall be based on the best information provided by the reporting unit and shall include "position approximate (PA)." A subsequent notice shall be issued after the survey indicating the accurate position and the (PA) removed.
- g. **Positions shall be listed in Section V using degrees, minutes, and seconds to three decimal places (thousands) when available.**
- h. When an aid to navigation is relocated, the assigned position should always be advertised in the Local Notice to Mariners (LNM), even if the new position falls within the charted symbol.
- i. The assigned position of an aid shall be listed in the Light List and Light List corrections will use degrees, minutes, and seconds to three decimal places (thousands). **Assigned** positions shall be adjusted, if necessary, to reflect the datum on the chart listed in the Chart Reference Heading preceding the entry in the Light List.

j. Any questions that arise concerning entries or the format of the Local Notice to Mariners shall be referred to **Commanding Officer, Navigation Center or Commandant (G-OPN-2)** for consultation prior to publication.

5. Purpose and Content.

a. Special Notices.

- (1) The purpose of the Special Notices section is to allow the district commander discretion in publishing information of a special nature that affects the marine environment.
- (2) In this section, reference to Armed Forces gunnery exercises, pyrotechnics drills, night photography, changes in regulations pertaining to pilotage, and other operations affecting marine traffic can be announced.
- (3) The format of the Special Notices should be edited to provide simple, to-the-point information.

C.6.a.(4) If the information is of a specific nature where geographic positioning data is required, start the paragraphs with the state (island, territory), followed by general location, (offshore, bay, etc.), then the specific location (river, channel), followed by the message. These geographic references immediately alert the user to the general location of the action being taken. Often, additional positioning information is required that will demand the publication of latitudes and longitudes for charting. In these cases a chart number shall be added for ready reference.

b. Discrepancies - Discrepancies Corrected. This section contains a tabulation of all discrepancies to aids to navigation and those which have been corrected from the last published list. A discrepancy is any change in the status of an aid to navigation that is different than what is published or charted. Where a corrected discrepancy affects information published on the charts or in the Light List, a correction must be written in Section V and the Light List Corrections.

- (1) The BNM and the LNM reference columns under Discrepancies are to be used to list the first time the discrepancy is announced in either a BNM or LNM.
- (2) The BNM reference column under Discrepancies Corrected is to be used to list the BNM in which the correction was announced. The LNM column under Discrepancies Corrected is used to reference the LNM that the discrepancy first appeared in.
- (3) Only the largest scale chart the discrepancy appears on shall be listed.

NOTE: An aid that is damaged should not be listed as destroyed unless the aid is totally destroyed or is leaning at an angle greater than 45 degrees. An aid that can be repaired without replacing the structure should not be listed as destroyed.

EXAMPLE

**EXAMPLE
DISCREPANCIES**

<u>LLNR</u>	<u>Name of Aid</u>	<u>Status</u>	<u>Charts affected</u>	<u>BNM Ref.</u>	<u>LNM Ref.</u>
165	Southwest Pass Light	RACON INOP	11361	1124-88	3-88
175	Cat Island Pass LWB CI	EXTINGUISHED	11357	51-88	2-88

DISCREPANCIES CORRECTED

<u>LLNR</u>	<u>Name of Aid</u>	<u>Status</u>	<u>Charts affected</u>	<u>BNM Ref.</u>	<u>LNM Ref.</u>
165	Southwest Pass Light	WATCHING PROPERLY	11361	148-88	3-88
175	Cat Island Pass LWB CI	WATCHING PROPERLY	11357	151-88	2-88

c. Temporary Changes - Temporary Changes Corrected. This section contains a tabulation of all temporary changes to aids to navigation and those which have been corrected from the last published list. Where aids to navigation are temporarily relocated for dredging, a temporary correction shall be listed in Section V giving the relocated positions if the changes are plotable. **Where a corrected temporary change affects information published on the charts or in the Light List, a correction must be written in Section V and the Light List Corrections.**

- (1) The BNM and the LNM reference columns under Temporary Changes are to be used to list the first time the Temporary Change is announced in either a BNM or LNM.
- (2) The BNM reference column under Temporary Changes Corrected is to be used to list the BNM that the correction was made in. The LNM column under Temporary Changes Corrected is used to reference the LNM that the change first appeared in.
- (3) Only the largest scale chart the temporary change appears on shall be listed.

EXAMPLE

**EXAMPLE
TEMPORARY CHANGES**

<u>LLNR</u>	<u>Name of Aids</u>	<u>Status</u>	<u>Charts affected</u>	<u>BNM Ref.</u>	<u>LNM Ref.</u>
4330	Lemon Bay Channel Buoy 19	TEMP RELOC/DREDGING SEE SECT V	11470	25-88	2-88

TEMPORARY CHANGES CORRECTED

<u>LLNR</u>	<u>Name of Aids</u>	<u>Status</u>	<u>Charts affected</u>	<u>BNM Ref.</u>	<u>LNM Ref.</u>
4330	Lemon Bay Channel Buoy 19	RESET ON STATION SEE SECT V	11470	152-88	2-88

C.6.d. Index of Waterways. An index of waterways and the chart number(s) that are affected by corrections in Sections V-VII shall be listed.

EXAMPLE

EXAMPLE

The following waterways are affected by Section V-Chart Corrections (C), Section VI-Advance Notice of Changes to Aids to Navigation (A), or Section VII-Proposed Notice of Changes to Aids to Navigation (P) in this Local Notice to Mariners.

<u>Waterway</u>	<u>Charts Affected</u>
Arthur Kills (A)	12333
Garniers Bay South Channel (P)	12354, 12358, 12359, 13205, 13209, 13210
Sandy Hook Channel (C)	12324, 12327, 12330

e. Chart Corrections.

- (1) This section lists all new establishments, deletions, and corrections to federally and privately maintained aids to navigation, as well as chart corrections provided by NOS. Additionally, reports received from NOS survey vessels, wrecks, and other hazards to navigation shall be listed.
- (2) This section is the heart of the Local Notice to Mariners. The information published here is used by mariners to correct their charts, and by NOS and DMAHTC to initiate chart revisions and Coast Pilot corrections. Accuracy is imperative.
- (3) An explanation of the format of the Chart Correction Section shall be listed.

EXAMPLE

EXAMPLE

(EXPLANATION OF FORMAT)

Corrective action affecting charts is contained in this section. Chart corrections are listed numerically by chart number. The correction listed pertains to that chart only. It is up to the mariner to decide what charts are to be corrected. The following example explains the individual elements of a typical correction.

Chart number	Chart edition	Edition date	Last Local Notice to Mariners	Chart Datum	Source of Correction	Current Local Notice to Mariners
12200	19 Ed.	12/20/87	LAST LNM 4/88	MAD83	(CGD5)	15/88
(Temp)	MD - CHESAPEAKE BAY - CHESAPEAKE CHANNEL --General location					
	Add	Chesapeake Channel Lt 1				34°24'57"N 75°03'30"W
		Fl R 4s 45ft 8M				
	Corrective action	Object of corrective action				Position

The Letter (M) immediately following the chart number indicates that the correction should be applied to the metric side of the chart only (Temp) indicates that the chart correction action is temporary in nature. Courses and bearings are given in degrees clockwise from 000 true, Bearings of Light sectors are toward the Light from seaward, The nominal range of lights is expressed in nautical miles (N).

- (4) Chart corrections shall be listed in the format described above. Five "Corrective Action Verbs" shall be used. They are: "Substitute, Relocate, Change, Delete, and Add". These corrective action verbs will cover all situations encountered. (See examples.)
- (a) The chart number in ascending order, the edition and date of chart, the last Local Notice to Mariners in the district to affect the chart, the source of the correction and the Local Notice to Mariners the correction appears in shall be listed.
- (b) (Temp) shall be listed below the chart number for temporary corrections. Temporary and permanent corrections shall not be listed together under the same correction.
- (c) Overall location (state (using Postal abbreviations, see below), island, territory), general location (bay, river, Icw), specific location (channel, inlet) shall be listed.

AL Alabama	AK Alaska	AS American Samoa
AZ Arizona	AR Arkansas	CA California
CZ Canal Zone	CO Colorado	CT Connecticut
DE Delaware	DC District of	FL Florida
GA Georgia	Columbia	GU Guam
HI Hawaii	ID Idaho	IL Illinois
IN Indiana	IA Iowa	KS Kansas
KY Kentucky	LA Louisiana	ME Maine
MD Maryland	MA Massachusetts	MI Michigan
MN Minnesota	MS Mississippi	MO Missouri
MT Montana	NE Nebraska	NN New Hampshire
NV Nevada	NJ New Jersey	NM New Mexico
NY New York	NC North Carolina	NO North Dakota
CH Northern Marianas	OH Ohio	OK Oklahoma
OR Oregon	PA Pennsylvania	PR Puerto Rico
RI Rhode Island	SC South Carolina	SD South Dakota
TN Tennessee	TX Texas	UT Utah
VT Vermont	VI Virgin Islands	VA Virginia
WA Washington	WV West Virginia	WI Wisconsin
WY Wyoming		

C.6.e.(4) The five corrective action verbs shall be listed in the following order of precedence.

- (a) Substitute. Use the verb "Substitute" when replacing one item for another. This verb will probably be the least used of the five.

EXAMPLES

EXAMPLES

13214 21 Ed. 12/6/86 Last LNM 30/87 NAD83 (CGD1) 5/88
CT AND NY - FISHER ISLAND SOUND - SILVER EEL POND
Substitute Legend "Shoaling Rep 1985" for depth 10 feet in 41°15'49.5"N 72°01'58.0"W

14843 20 Ed. 6/14/86 Last LNM 43/87 NAD27 (CGD9) 8/88
OH - LAKE ERIE - HURON HARBOR
Substitute Wreck for dangerous wreck in 41°24'16.5"N 82°32'38.2"W

- (b) Relocate. Use the verb "Relocate" when something is physically moved. The object being relocated is followed by the former position (within parenthesis) or "Close", the direction, and the preposition "to". "Close" may be used in lieu of the former position when the new position falls within the charted symbol.

EXAMPLES

EXAMPLES

11358 18 Ed. 10/4/86 Last LNM 51/87 NAD27 (CGD7) 10/88
FL - MIAMI HARBOR - SOUTH CHANNEL
Relocate South Channel Buoy 7 (41°45'36"N 74°39'19"W) to 41°45'37.1"N 74°39'21.2"W

11553 13 Ed. 9/22/85 Last LNM 12/88 NAD27 (CGD5) 13/88
NC - PUNGO RIVER - WRIGHT CREEK
Relocate Wright Creek Entrance Buoy 2 close ESE to 32°51'28.4"N 113°08'40.3"W
(Supersedes 12/88)

12286 28 Ed. 2/29/84 Last LNM 52/87 NAD27 (CGD5) 10/88
VA - POTOMAC RIVER
Relocate Potomac River Bell Buoy 5
(28°45'19.1"N 78°58'09.2"W) to 28°45'24.3"N 78°58'07.4"W
and Delete BELL

- (c) Change shall be used when something is changed such as the height, color, or nominal range of a light.

- (c) Change shall be used when something is changed such as the height, color, or nominal range of a light.

EXAMPLES

EXAMPLES

13003	38 Ed. 1/19/86 Last LNM 42/87 NAD83 MA - SEACOAST Change NOAA Buoy 11003 to yellow, Fl (3) R 20s	(CGD1) 10/88 56°00'00.0"N 148°00'00.0"W
18765	17 Ed. 2.30/86 Last LNM 35/86 NAD27 CA - MISSION BAY - MARINERS BASIN Change Anchorage Buoys, each to white with orange bands, Fl 4s MB MC	(CGD11) 5/88 47°57'30.9"N 122°34'29.8"W 47°55'40.6"N 122°30'30.7"W
18502	31 Ed. 4/31/84 Last LNM 46/86 NAD27 OR - GRAYS HARBOR - WESTHAVEN COVE Change Westhaven Cove Buoy 9 to green	(CGD13) 12/88 38°04'02.5"N 122°15'18.4"W
12214	29 Ed. 12/1/86 Last LNM 23/85 NAD27 DE - LEWIS BAY Change Lewis Bay Breakwater LT 6 to Fl R 6s	(CGD5) 8/88 46°57'28.2"N 139°37'48.3"W

(d) Delete shall be used when deleting
(discontinuing) an aid or when deleting an
object from the chart.

EXAMPLES

EXAMPLES

13214	12 Ed. 5/1/86 Last LNM 13/87 NAD27 CT - LONG ISLAND SOUND - MILFORD HARBOR Delete Milford Harbor Buoy 12	(CGD1) 8/88 28°05'08.4"N 117°06'35.1"W
12245	10 Ed. 6/10/85 Last LNM 23/87 NAD27 VA - HAMPTON ROADS - WILLOUGHBY BAY Delete Willoughby Bay Buoys 1 3 6	(CGD5) 9/88 36°27'49.1"N 77°56'47.5"W 36°27'49.2"N 77°56'47.6"W 36°27'49.3"N 77°56'47.7"W
12237	14 Ed. 7/18/86 Last LNM 26/86 NAD27 VA - RAPPAHANNOCK RIVER Delete BELL from Rappahannock River Bell Buoy 1	(CGD5) 11/88 30°12'34.3"N 76°34'56.5"W

(e) Add shall be used when adding
(establishing) an aid or when adding an
object to the chart.

EXAMPLES

EXAMPLES

16660	22 Ed. 5/8/82 LAST LNM 41/87 NAD27 AK - COOK INLET - FIRE ISLAND	(CGD17) 12/88
Add	Race Point Range Front Light, Iso 6s 176ft	61°09'56.6"N 150°13'28.9"W
	Race Point Range Rear Light, F 252ft	61°10'13.9"N 150°12'31.7"W
	Range line extending in a 238 degree direction from above the rear light, dashed for 2 miles, thence solid for two miles.	
19347	12 Ed. 8/28/87 Last LNM 21/86 WGS84 HI - KALOHI CHANNEL	(CGD14) 11/88
Add	Visible wreck "Wailua"	32°46'40.8"N 118°34'56.9"W
11340	13 Ed. 9/28/87 Last LNM 26/87 NAD27 LA - SOUTHWEST PASS	(CGD8) 3/88
Add	Southwest Pass Ferry Buoy WR2A, red, Q R	29°57'13.7"N 80°37'47.6"W
12205	17 Ed. 9/12/85 Last LNM 23/86 NAD27 NC - MANTEO - SHALLOWBAG BAY	(CGD5) 5/88
Add	Manteo Channel Anchorage Buoys, white with orange bands, Fl 4s (Priv maint)	
	A	31°08'08.4"N 73°38'29.5"W
	B	31°09'00.3"N 73°38'29.2"W
18645	12 Ed. 2/24/86 Last LNM 23/87 NAD83 CA - SAN FRANCISCO BAY ENT. - POINT BONITA	(CGD11) 9/88
Add	Point Bonita Light, Fl 4s 265 Ft 24M Horn, Rbn F (...)	33°28'48.4"N 77°58'31.8"W

(f) Names. The proper name of the aid to navigation (i.e., Jones Point Light 10), shall be listed with each correction.

(g) The following terms shall always appear within parenthesis: (PA), (Priv maint), (Navy maint).

C.6.e.(5) (h) Wrecks. A wreck is always written as a permanent notice, even though source material may indicate the wreck is temporary. When wrecks are reported to districts, a correction shall be added along with the name of the wrecked vessel, if known. The wreck will remain on the chart unless a report is received that the wreck has been removed. If the wreck is removed then a correction shall be made to delete the wreck. If a wreck is searched for and not found a correction shall be made to add the designation (PA) to the previously reported wreck. The legends "ED" (existence doubtful) or "PD" (position doubtful) shall not be used. Never use the expression "non-dangerous wreck". Use either "wreck," "visible wreck," or "dangerous wreck."

EXAMPLES

EXAMPLES

11340	12 Ed. 8/28/87 Last LNM 21/86 NAD27	(CGD8) 11/88
	TX - GALVESTON ENT. CHANNEL	
	Add Dangerous wreck "Barbara D"	32°46'40.1"N 118°34'56.2"W
11340	12 Ed. 8/28/87 Last LNM 11/88 NAD27	(CGD8) 12/88
	TX - GALVESTON ENT. CHANNEL	
	Change Dangerous wreck "Barbara D" to dangerous wreck (PA)	32°46'40"N 118°34'56"W
11340	12 Ed. 8/28/87 Last LNM 12/88 NAD27	(CGD8) 13/88
	TX - GALVESTON ENT. CHANNEL	
	Delete Dangerous wreck "Barbara D" (PA)	32°46'40"N 118°34'56"W

(i) Shoals, rocks, and piles. Information on shoals, rocks, and piles shall be reported as received. If a report is received in March 1988 that there is shoaling in a particular area, the district shall publish the correction as "Shoaling Rap Mar 1988", and give the geographic position of the shoal. Rocks and piles should be handled in the same manner.

EXAMPLES

EXAMPLES

14860	28 Ed. 3/6/87 Last LNM 31/87 NAD27	(CGD9) 10/88
	MI - STRAITS OF MACKINAW - DETOUR REEF	
	Add Legend - Rocks Rep 1988	45°57'00.3"N 83°54'20.4"W
13214	21 Ed. 8/25/86 LAST LNM 4/88 NAD27	(CGD1) 5/88
	CT AND NY - FISHER ISLAND SOUND - SILVER EEL POND	
	Add Legend - Shoaling to 2 feet Rep Jan 1988	41°15'49.5"N 72°01'58.0"W

C.6.e.(4)(j) Research buoys. Information on research buoys established for the collection of data and that are temporary in nature should be listed as a temporary chart correction.

EXAMPLES

EXAMPLES

11340 50 Ed. 12/6/86 Last LNM 6/88 NAD83 (CGD8) 10/88
 (Temp) GULF OF MEXICO
 Add Research buoys, yellow, Fl Y 4s
 A 27°10'01.0"N 92°15'02.0"W
 B 27°10'03.0"N 92°15'04.0"W

(k) NOAA survey vessel information.
 Information received from NOAA survey vessels will be published as received from the NOAA vessel. The legend "reported" will not be used. The source to be listed will be the name of the vessel. No attempt should be made to convert feet to fathoms or vice versa. If the depths are given in fathoms and tenths then those depths shall be used in the LNM.

EXAMPLES

EXAMPLES

16476 8 Ed. 4/30/77 LAST LNM 4/85 NAD27 (NOAA RAINIER) 10/88
 AK - ALEUTIAN ISLANDS - ADAK ISLAND
 Add Depths
 2 fathoms 51°52'16.0"N 176°36'23.1"W
 1.5 fathoms 51°52'02.9"N 176°36'43.2"W
 0.5 fathom 51°52'45.7"N 176°36'03.3"W

(l) When a Temporary Notice is made permanent, repeat the Temporary Notice without the identification "(Temp)" and include the reference "(Supersedes _/_)" .

EXAMPLES

EXAMPLES

12220 33 Ed. 4/15/79 LAST LNM 32/87 NAD27 (CGD5) 16/88
 (Temp) VA - SEACOAST - CAPE HENRY
 Delete Cape Henry Light Fog Signal 36°55'34.4"N 76°00'27.3"W

12220 33 Ed. 4/15/79 LAST LNM 16/88 NAD27 (CGD5) 18/88
 VA - SEACOAST - CAPE HENRY
 Delete Cape Henry Light Fog Signal 36°55'34.4"N 76°00'27.3"W
 (Supersedes 16/88)

C.6.e.(4) (m) Correcting an error. When a previously written notice contained erroneous information, write a subsequent notice using the same subject matter, the corrected information, and include the reference "(Supersedes _/_)".

EXAMPLES

EXAMPLES

12301	15 Ed. 4/18/86 LAST LNM 37/87 NAD27 NJ - SEACOAST - HEREFORD INLET Add Hereford Inlet Lighted Bell Buoy 8, Fl R 6s	(CGD1) 12/88 38°44'25.4"N 73°50'26.3"W
12301	15 Ed. 4/18/86 LAST LNM 12/88 NAD27 NJ - SEACOAST - HEREFORD INLET Add Hereford Inlet Lighted Bell Buoy 8, Fl R 6s (Supersedes 12/88)	(CGD1) 13/88 39°44'52.4"N 74°05'26.3"W

(n) Only charts which contain a correction need to be listed, i.e., when correcting an aid to navigation on an inland waterway, the small scale coastal chart need not be listed unless that inland aid to navigation appears on the coastal chart.

(o) Oil drilling platforms. Platforms should be listed according to the type of rig and the length of time the structure is expected to remain in place. Jack-up rigs (JU) are usually temporary in nature; however, they leave a cap or covered well head below the surface. If the well head is left on the bottom, a chart correction shall be made.

EXAMPLES

EXAMPLES

11340 (Temp)	50 Ed. 12/6/86 Last LNM 35/87 NAD83 GULF OF MEXICO Add Drilling platform (JU) "EXXON 123-321" (CGD8 123/87)	(CGD8) 43/87 27°10'00.0"N 92°15'00.0"W
11340	50 Ed. 12/6/86 Last LNM 43/87 NAD83 GULF OF MEXICO Delete Drilling platform (JU) "EXXON 123-321" (CGD8 123/87) (Supersedes 43/87) Add Well and legend "Covered 10 fms"	(CGD8) 5/88 27°10'00.0"N 92°15'00.0"W 27°10'00.0"N 92°15'00.0"W

C.6.e.(4)(p) Chartlets. Chartlets are supplied by NOS and shall be listed as a chart correction. NOS provides preprinted chartlets, in large quantities, to each district office. These chartlets should be collated into the notice. If procedures for assembling the notice do not allow for the collation of preprinted pages, other arrangements shall be made with NOS. A negative or a positive copy that can be reproduced can be provided. The reproduction must not be distorted.

EXAMPLES

EXAMPLES

18657 12th ed. 11/24/84 Last LNM 6/88 NAD 27 (NOS Rockville, Md) 15/88
 CA - CARQUINEZ STRAIT
 Add Chartlet, reflecting changes in channel limits, aids to navigation, and hydrography from Enclosure (2) 38°03'00"N 122°05'30"W

- (q) Last LNM. The reference Last LNM shall be added and shall be correct.
- (r) Current LNM number. The current LNM number shall be listed with each chart correction and should agree with the LNM number that the correction is appearing. This reference number will allow for future data basing of chart corrections.
- (s) Rip rap. If a light having rip rap around its structure is discontinued, and the rip rap remains, an obstruction shall be added to the chart.
- (t) Chart/Light List corrections. If a change to an aid to navigation affects the chart and the Light List, the corrections shall appear in the same LNM.
- (u) RACON/RBN characteristic. If adding or changing the Morse code characteristic of a racon or radiobeacon, the characteristic, as well as the letter character, shall be listed.

EXAMPLES

EXAMPLES

11468 12 Ed. 2/24/86 Last LNM 23/87 NAD83 (CGD7) 9/88
 FL - MIAMI HARBOR ENT.
 Add Racon M (- -) to Miami Ent. Channel Lighted Horn Buoy M 33°28'48.3"N 77°58'31.1"W

C.6.e.(4)(v) Seasonal corrections. When establishing or discontinuing an aid to navigation that is seasonal, the accurate position of the aid to navigation shall be used.

EXAMPLES

EXAMPLES

18433 4 Ed. 9/23/79 LAST LNM 48/87 NAD27 (CGD13) 19/88
 WA - PUGET SOUND - FRIDAY HARBOR
 Add Friday Harbor Channel Buoy 2, Fl R 2.5s 54°08'44.4"N 165°43'34.0"W
 (Seasonal)

14860 28 Ed. 3/6/87 LAST LNM 31/87 (CGD9) 15/88
 MI - STRAITS OF MACKINAW - DETOUR REEF
 Delete DeTour Reef Light Racon 45°57'00.4"N 83°54'02.0"W
 (Seasonal)

(w) Federal Register changes. Changes published in the Federal Register for COLREGS, anchorage areas, safety fairways, etc., shall be published as a chart correction.

EXAMPLES

EXAMPLES

13229 22 Ed. 09/26/87 LAST LNM 02/88 NAD27 (FR 49123, 1/4/88) 06/88
 MA - SOUTH COAST OF CAPE COD AND BUZZARDS BAY
 Add Purple lines joining 41°38'11.0"N 70°54'39.0"W
 and label: Anchorage Area 110.145 41°38'13.0"N 70°54'28.0"W
 41°38'14.0"N 70°54'40.0"W
 41°38'19.0"N 70°54'25.0"W

(6) Each chart a correction appears on must be listed separately. However, more than one correction may be listed under a chart.

EXAMPLES

EXAMPLES

13214 21 Ed. 12/6/86 Last LNM 30/87 NAD83 (CGD1) 5/88
 CT AND NY - FISHER ISLAND SOUND - SILVER EEL POND
 Substitute Legend "Shoaling Rep 1985" for depth 10 feet in 41°15'49.5"N 72°01'58.0"W
 Delete Silver Eel Pond Light 2 41°16'24.4"N 72°01'51.0"W
 Add Silver Eel Daybeacon 8, R 41°16'24.1"N 72°01'58.2"W

13216 23 Ed. 1/18/87 Last LNM 24/87 NAD27 (CGD1) 5/88
 CT AND NY - FISHER ISLAND SOUND - SILVER EEL POND
 Substitute Legend "Shoaling Rep 1985" for depth 10 feet in 41°15'48.9"N 72°01'58.3"W

C.6.e.(7) Also incorporated in this section are the chart corrections received from NOS. These chart corrections will be transmitted electronically, in the same format used in the LNM.

EXAMPLES

EXAMPLES

13229	22 Ed. 09/26/87 LAST LNM 02/88 NAD27	(NOS Rockville, MD) 06/88
	MA - SOUTH COAST OF CAPE COD AND BUZZARDS BAY	
Add	Purple dashed lines joining	41°38'11.0"N 70°54'39.0"W
	and label: Cable Area	41°38'13.0"N 70°54'28.0"W
		41°38'14.0"N 70°54'40.0"W
		41°38'19.0"N 70°54'25.0"W

f. Advance Notice of Changes to Aids to Navigation.

- (1) This section contains advance notice of approved projects which are scheduled for a certain date of accomplishment. It may also contain notices of forthcoming temporary changes such as dredging, etc. This section shall be in a free style paragraph format and need not conform to the format of Section V; however, the charts affected shall be listed.
- (2) Advance notice must be given of significant changes in aids to navigation used by the mariner engaged in transoceanic trade. The amount of advance notice that should be given in Local Notice to Mariners is:
 - (a) Four months for major changes to important seacoast aids used in transoceanic trade. Publication of such information shall be repeated monthly for the first two months, then every two weeks until the changes are accomplished.
 - (b) Two months for other changes to seacoast aids to navigation. Publication of information of this type shall be repeated every two weeks until the changes are accomplished.
- (3) When information is not available to give the advance notice shown above, the information should be repeated at weekly intervals from the time the information is available until the change is accomplished. When information contained in an advance notice is changed in a later notice, the later notice should make reference to the initial notice. However, each notice shall be complete in itself so that the reader need not refer to the previous notice.

C.6.f.(4) When a change announced in an advance notice cannot be carried out within one week of the date announced, a postponement notice shall be issued. For important aids, this notice should be issued as a Broadcast Notice to Mariners.

g. Proposed Changes to Aids to Navigation.

- (1) This section contains notices of projects conceived and in the planning stage but which have not been approved or scheduled for accomplishment.
- (2) A preliminary statement, worded as below, shall be included:

PERIODICALLY THE COAST GUARD EVALUATES THE SYSTEM OF AIDS TO NAVIGATION TO DETERMINE WHETHER THE CONDITIONS FOR WHICH THE AIDS TO NAVIGATION WERE ESTABLISHED HAVE CHANGED. WHEN CHANGES OCCUR, THE FEASIBILITY OF IMPROVING, RELOCATING, REPLACING, OR DISCONTINUING THE AID IS CONSIDERED. IN THIS REGARD THE COAST GUARD IS EVALUATING CHANGES IN AIDS TO NAVIGATION AS NOTED BELOW. COMMENTS ARE REQUESTED, AND SHOULD BE ADDRESSED TO: (fill in) ALL COMMENTS SUBMITTED SHOULD INCLUDE THE FOLLOWING INFORMATION:

- (A) QUANTITY, TYPE, CAPACITY AND VALUE OF VESSELS INVOLVED, AND THE EXTENT THAT THESE VESSELS TRAVERSE THE AREA UNDER CONSIDERATION SEASONALLY, BY DAY, AND BY NIGHT.
- (B) WHERE PRACTICABLE, THE TYPE OF NAVIGATION DEVICES, SUCH AS COMPASSES, RADIO DIRECTION FINDER, RADAR, LORAN, AND SEARCH LIGHTS, WITH WHICH SUCH VESSELS ARE EQUIPPED.
- (C) THE NUMBER OF PASSENGERS AND THE TYPE, QUANTITY, AND VALUE OF CARGO INVOLVED.
- (D) A CHART SECTION OR SKETCH SHOWING THE ACTION PROPOSED WHEN NECESSARY TO CLEARLY DESCRIBE THE RECOMMENDED IMPROVEMENT.

COMMENTS ARE REQUESTED BY (DATE).

- (3) These notices may be written in the same manner as an advanced notice except for stating it is a proposed change.

h. General.

- (1) This section contains information which is of general concern to the mariner and not, in the District Commander's opinion, of such a nature to appear as a Special Notice.

- C.6.h.(2) Included in this category are salvage operations, anchorages, restricted areas, bridge information, public notices and hearings, regattas, large ship launching or maneuvering, routine gunnery exercises and other items which would not specifically fit into another section of the Local Notice to Mariners. Make reference to any ADDITIONAL ENCLOSURE items of interest. Make sure all the facts are stated for each item. Reference previous Local Notice to Mariners, but put all information pertaining to the item in each Local published.
- (3) It is not necessary to print the entire public notice, hearing notice, etc., in the Local. A short note that a public notice has been issued and where copies may be obtained will suffice.
- (4) This section shall be in a free style paragraph format and need not conform to the format of Section V.
- i. Enclosures. Contained here are Light List corrections and other items such as chartlets, channel depth tabulations, and other preprinted material.
- j. Light List Corrections.
- (1) Light List corrections will always appear in Enclosure (1). If there are no Light List corrections the following format will be used and included as Enclosure (1) to the LNM.

EXAMPLE

EXAMPLE

CORRECTIONS TO LIGHT LIST, VOLUME II, ATLANTIC COAST, 1988

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Ht	(6) Rng	(7) Structure	(8) Remarks
		N/W					

NONE

- C.6.j.(2) The Light List corrections shall appear in the same format as the Light List except for the different type styles.
- (a) Place an asterisk (*) in the column to indicate any change.
 - (b) To add a new aid to navigation the asterisk (*) is placed under all eight columns.
 - (c) To delete an aid to navigation, only the Light List Number (Col 1), Aid Name (Col 2), and the phrase "Remove from list." (Col 8) are required. Only the first line of information need be printed. The asterisk (*) is placed in column B.
 - (d) Headings shall be added, deleted, or changed in the following manner. Heading corrections will follow all other Light List corrections.

EXAMPLES

EXAMPLES

Change heading before LLNR 1500 to read: Salem Entrance River Channel

Add heading Salem Entrance River Channel before LLNR 1500

Delete heading Salem Entrance River Channel before LLNR 1500

- (e) To change a Light List number, first delete the old entry. The new entry can then be added.
- (f) The only corrections allowable in column (1) include additions, deletions, or changes to the cross reference number.
- (g) All corrections must follow the same type styles as listed in paragraph A.5 above, with the exception of italics, where regular type upper/lower case shall be used instead.
- (h) Abbreviations for Daybeacons, i.e., TR (triangular red), SG (square green), shall be those listed in the Light Lists under Daybeacons.

EXAMPLE

EXAMPLE

CORRECTIONS TO LIGHT LIST, VOLUME II, ATLANTIC COAST, 1988

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Ht	(6) Rng	(7) Structure	(8) Remarks
	N/W						
	Chesapeake Channel						
3210	- Wreck Lighted Gong Buoy WR 81	38 59.9 76 22.9	Q G		4	Green.	Replaced by lighted buoy of lower intensity when endangered by ice. * 09/88
16900	SOMERS COVE LIGHT 1						Remove from list. * 09/88
21997 *	- Channel Buoy 9B *		*		*	Green can. *	* 09/88
30285	- Daybeacon 11	34 43.4 76 49.3 *				SG-1 on pile.	09/88

NOTE.- * Indicates that column in which a correction has been made or new information added.

D. Broadcast Notice to Mariners.

1. Description. The Broadcast Notice to Mariners is the method by which important navigation information is disseminated in the most expedient manner. This information includes, but is not limited to, information regarding aids to navigation maintained by, or under the authority of the Commandant, weather, search and rescue (SAR) information, military exercises, marine obstructions, ice reports, changes in channel conditions, and important bridge information.
2. Responsibility.
 - a. Two agencies in the United States, the U.S. Coast Guard and the Defense Mapping Agency Hydrographic/Topographic Center (DMAHTC), are responsible for promulgating navigation information. Each agency has a particular geographic area of responsibility.

- D.2.b. Commandant (G-N) acts as NATIONAL COORDINATOR of the World Wide Navigational Warning Service, and is responsible for compilation of local and coastal navigation information broadcasts from sources within the United States and its possessions. Commandant (G-N) has delegated the responsibility of the issuance of these broadcasts to the district commanders. This authority may be delegated to district units (with Commandant approval).
- c. DMAHTC acts as AREA COORDINATOR of the World Wide Navigational Warning Service, and is responsible for compilation of long-range navigation broadcasts from countries within NAVAREA IV and NAVAREA XII. NAVAREA IV covers the Atlantic coast eastward to 35 degrees West. NAVAREA XII covers the waters of the Pacific coast westward to 172 degrees East. DMAHTC is responsible for promulgating navigation information concerning the "HIGH SEAS."
- d. DMAHTC broadcasts are issued as either a NAVAREA, HYDROLANT, HYDROPAC, or SPECIAL WARNING. In general, these broadcasts are geared toward the deep draft mariner. The information disseminated by these broadcasts include the reporting of derelicts, ice conditions, drifting buoys, floating mines, etc. DMAHTC is responsible for promulgating navigation information affecting these areas beyond that covered by the Coast Guard.

3. Scope.

- a. Broadcast Notices to Mariners are not intended to be the source of chart corrections, but rather to inform the mariner of important changes that affect the safety of navigation within a district's area of responsibility. Broadcasts are issued via VOICE, MORSE TELEGRAPHY, HF TELEX, FACSIMILE, and NAVTEX.
 - (1) VHF-FM voice broadcasts. As a general rule, VHF-FM voice broadcasts (Channel 22A, 157.1 MHz) will contain all information (navigation warnings, weather warnings, and search and rescue information) that applies to inland waters and seaward to 20 nautical miles. In areas where NOAA Weather Radio provides similar coverage, weather forecasts will not be duplicated on Channel 22A.

NOTE: Channel 22A (157.1 MHz) used in the United States is the ship station transmit frequency portion of the international Channel 22. This simplex use of Channel 22A (157.1 MHz) is not compatible with the international duplex arrangement of the channel (coast transmit 161.7 MHz, ship transmit 157.1 MHz), as specified in Appendix 18 of the International Telecommunications Union (ITU) Radio Regulations. As a result, many foreign flag vessels having radios tuned to the international Channel 22 cannot receive Coast Guard maritime safety broadcasts.

- (2) Medium frequency (MF) voice broadcasts. MF voice broadcasts (2670 kHz single sideband) duplicate the VHF-FM broadcasts, less the Intracoastal Waterway, and additionally cover waters out to about 100 nautical miles. These broadcasts also carry weather forecasts not included in the VHF-FM voice broadcasts.
- (3) High frequency (HF) voice broadcasts. HF voice broadcasts include offshore and high seas weather forecasts and warnings. These broadcasts do not normally include navigational information unless required by the Area Commander.
- (4) Medium frequency (MF) Morse telegraphy. MF Morse telegraphy broadcasts include navigational warnings, meteorological information, and search and rescue information that applies to waters from the line of demarcation (separating Inland Rules waters from COLREG Rules waters) to 200 nautical miles offshore.
- (5) NAVTEX. NAVTEX broadcasts contain navigational warnings, meteorological information, and search and rescue information that applies to waters from the line of demarcation to 200 nautical miles offshore (same as MF Morse telegraphy). In addition, NAVTEX shall include navigational information that affects the safety of navigation of deep draft (15 feet or more) vessels within U.S. Inland Rules waters. NAVTEX will eventually replace MF Morse telegraphy.

NOTE: The NAVTEX system is an internationally adopted, automated system for instantly distributing marine navigational warnings, weather forecasts, weather warnings, ice warnings, radionavigational information, and search and rescue alerts to all types of ships. A small, low-cost and self-contained "smart" printing radio receiver installed in the pilot house of a ship or boat checks each incoming message to see if it has been received during an earlier transmission, or if it is of a category of no interest to the ship's master. If it is a new and wanted message, it is printed on a roll of adding-machine size paper; if not, the message is ignored. When ready, the master can read the latest notices. A new ship coming into the area will receive many previously-broadcast messages for the first time; ships already in the area which had already received the message will not receive it again. NAVTEX transmissions are limited to dedicated 30-minute time slots. For these reasons, broadcasts intended for NAVTEX must be made as clear and concise as possible (see paragraph D.5.g).

- (6) High frequency (HF) Morse telegraphy. HF Morse telegraphy broadcasts will contain that information concerning waters from approximately 150 nautical miles offshore to deep ocean, such as DMAHTC NAVAREA and HYDROLANT/PAC messages, ice reports, and high seas weather forecasts and warnings.
 - (7) High frequency (HF) telex. HF telex, also called HF sitor or HF narrow-band direct printing, broadcasts duplicate and will eventually replace HF Morse telegraphy broadcasts. The format for broadcasts shall be the same as NAVTEX.
 - (8) High frequency (HF) facsimile. HF facsimile broadcasts include textual and chart information of offshore and high seas weather, and ice reports.
- b. Besides meteorological information, the primary focus of Coast Guard broadcasts is generally directed towards aids to navigation. The establishment, change, discontinuance, or discrepancy of an aid to navigation should always be broadcast.

D. 4. Procedures.

- a. Broadcast Notices are transmitted by Coast Guard and Navy Communication Stations and Coast Guard radio facilities on the schedules and frequencies set forth in the DMA Publication 117 (Radio Navigational Aids). Coast Guard broadcast frequencies and schedules are also included in the Radio Frequency Plan (COMDTINST M2400.1D). Personnel should be familiar with the provisions on navigation information broadcasts in both of these manuals as they apply to their district. Notice to Mariners information may also be furnished to commercial broadcasting stations if the district commander considers the additional dissemination necessary and no charges are involved other than for transmission of the message to the stations.
- b. Determining the priority of a broadcast is the responsibility of the originator. There are three types of broadcasts; Scheduled, Safety, and Urgent. Under normal circumstances, a Scheduled Broadcast will be a routine or priority message which is first transmitted at the next scheduled broadcast time. A Safety Broadcast will be a priority or immediate message and shall be broadcast upon receipt and then at each scheduled broadcast until canceled. An Urgent Broadcast will be an immediate message and shall be broadcast upon receipt and then at each scheduled broadcast until canceled.
- c. NAVTEX uses three terms to describe NAVTEX message priorities; Routine, Important, and Vital. A "routine" NAVTEX message coincides with a Scheduled Broadcast, an "important" NAVTEX message coincides with a Safety Broadcast, and a "vital" NAVTEX message coincides with an Urgent Broadcast. As a general rule, "Vital" will only apply to SAR messages.
- d. A broadcast should be repeated on subsequent scheduled broadcasts as long as the information is significant.
- e. Each broadcast should be consecutively numbered. It is important that broadcasts are confined to the information necessary for the safety of navigation.
- f. Small craft seldom have Morse telegraphy capabilities. Since NAVTEX is limited in the number of messages which can be broadcast, navigation information pertaining to the Intracoastal Waterway and other inland waters not normally used by ocean going vessels should normally be broadcast by voice (radiotelephone) only.

- D.4.g. Reported defects in aids to navigation should be broadcast immediately without waiting for positive verification. The word "REPORTED" will be used to describe a discrepancy that has not been verified by a Coast Guard unit or other reliable source.
- h. A summary of BNM's in effect shall be issued weekly.
- i. The following organizations and units should receive "hard copy" BNM's:
 - (1) District units with primary and secondary responsibility for an aid to navigation.
 - (2) District units (as necessary for their safe navigation).
 - (3) Adjacent USCG district commanders (as deemed necessary).
 - (4) Defense Mapping Agency Hydrographic/Topographic Center, Washington, DC. (if appropriate)
 - (5) Commandant (G-NSR) for changes to or discrepancies in primary seacoast or lake coast aids, Loran, radiobeacons, racons, and reports of wrecks or other obstructions.

5. Message Drafting.

- a. In an effort to incorporate the NAVTEX system as a broadcast alternative, it is necessary to establish more uniformity in Broadcast Notice to Mariners. All information described in paragraph D.3.a.(5) should be broadcast via NAVTEX. As a rule, all broadcasts of navigational warnings (voice, NAVTEX, Morse, and HF telex) should be formatted the same way and be capable of being transmitted by NAVTEX without the need to re-key the information.
- b. The Coast Guard has developed a computer program to assist the originator. This program has been installed at each Communication Station (COMMSTA) at the Unclassified Message Switch (UMS). The program will automatically place designated messages into the queue for broadcast by NAVTEX. If NAVTEX dissemination is desired, the originator is responsible for placing the appropriate subject indicator character at the end of the subject line. This character must appear between double slant bars (//A//) for the program to identify the message for NAVTEX routing.

- D.5.b.(1) The following subject lines shall be used:
SUBJ: SCHEDULED BROADCAST NOTICE TO MARINERS
SUBJ: SAFETY BROADCAST NOTICE TO MARINERS
SUBJ: URGENT MARINE INFORMATION BROADCAST
- (2) A sample NAVTEX subject line would read:
SUBJ: SAFETY BROADCAST NOTICE TO MARINERS//A//
- (3) The following NAVTEX SUBJECT INDICATOR CHARACTERS shall be used:
- A - Navigational Warnings
 - B - Meteorological Warnings
 - C - Ice Reports
 - D - Search and Rescue Information
 - E - Meteorological Forecasts
 - F - Pilot Service Messages
 - G - DECCA Messages
 - H - LORAN Messages
 - I - OMEGA Messages
 - J - SATNAV Messages
 - K - Other Electronic Navaid Messages
 - L - Navigational Warnings (Additional to A)
 - Z - No message on hand (QRU)
- c. In the text of a broadcast, time may be LOCAL or UTC. The single letter time zone indicator shall be used to designate the standard of time in use. The term LOCAL or any abbreviation of the word shall not be used.
- d. SPECIAL BROADCAST INSTRUCTIONS shall appear on the line following the subject line. Special instructions may include information such as: antenna sites to transmit from, how frequently to broadcast, broadcast until canceled, etc. Special instructions must be separated from the text of the message by two slant bars and a carriage return (//).
- e. The text of the message shall follow a consistent format. Line 1 of the text will include the originator of the information and the broadcast number:

CCGD7 BNM 155-88
CCGD13 BNM 56-88
CCGD5 UMIB 23-88

D.5.f. Line 2 shall be used to list the geographic location. A hyphen shall be used to separate distinct segments of a message. Blank spaces shall be used only when the added space further helps to clarify the information. The following examples apply:

MD-SEACOAST-OCEAN CITY
RI-NARRAGANSETT BAY
FL-SEACOAST-CAPE CANAVERAL

- g. The text of the message should be clear and concise. For an aid to navigation, the broadcast shall include the complete name of the aid to navigation (with the exception of five abbreviations for lighted buoys), the Light List number, and geographic position (to the nearest tenth of a minute). Figure 13-1 is a list of standard abbreviations which shall be used. For aids to navigation, it is not necessary to list the secondary Light List number; however, the International Light List number shall be listed when applicable. When establishing an aid to navigation, the position shall be accurate to the nearest second. See examples following paragraph D.4.j.3.
- h. The implementation of the North American Datum of 1983 (NAD 83) creates the need to issue broadcasts utilizing bearings and ranges from fixed charted objects. If a Broadcast Notice to Mariners is required, and a chart of the area where the change is made has been converted to NAD 83, a bearing and range from a fixed object common to all charts the correction affects shall be given. If the charts of the area have not been converted, a geographic position shall be given. Conversely, if all affected charts have been converted to NAD 83, a geographic position shall be given. When the relocation of an aid results in an insignificant geographic change, a Broadcast Notice to Mariners need not be issued.
- i. Cancellation of a broadcast shall be handled in one of the following ways.
- (1) Include an automatic cancellation Date Time Group as the last line of the message. This line should appear as a separate paragraph and read as follows:
CANCEL AT TIME//020600R DEC 87//.
- (2) Draft a separate message. In this case the subject line and text shall read:
SUBJ: BROADCAST NOTICE TO MARINERS CANCELLATION
1. CANCEL CCGD11 BNM 1228-88 DTG 280015Z FEB 88

STANDARD ABBREVIATIONS for BROADCASTS

<u>Characteristic</u>	<u>Abbrev</u>		
Fixed	F	Lighted Horn Buoy	LHB
Occulting	OC	Lighted Whistle Buoy	LWB
Group-Occulting	OC (2)	Ocen Data	
Composite	OC (2+1)	Acquisition System	ODAS
Group-Occulting		Privately Maintained	PRIV MAINTD
Isophase	ISO	Radar responder beacon	RACON
Single-Flashing	FL	Radar Reflector	RA REF
Group-Flashing	FL (3)	Radiobeacon	RBN
Composite	FL (2+1)	Temporarily Replaced by Unlighted Buoy	TRUB
Group Flashing		Temporarily Replaced by Lighted Buoy	TRLB
Continuous	Q	Whistle	WHIS
Quick-Flashing			
Interrupted	IQ		
Quick-Flashing			
Morse Code	MO (A)		
Fixed and Flashing	FFL		

Organizations

Alternating	AL	Coast Guard	CG
Characteristic	CHAR	Commander, Coast Guard District (3)	CCGD (#)
1		Corps of Engineers	COE
Color		Defense Mapping Agency	DMAHTC
Black	B	Hydrographic/Topographic Center	
Blue	BU	National Ocean Service	NOS
Green	G	National Weather Service	NWS
Orange	OR		
Red	R		
White	W		
Yellow	Y		

Vessels Aids to Navigation

Aircraft	A/C		
Aeronautical radiobeacon	AERO RBN	Fishing Vessel	F/V
Articulated Daybeacon	ART DBN	Liquified Natural Gas Carrier	LNG 2
Articulated Light	ART LT	Motor Vessel	N/V
Destroyed	DESTR	Pleasure Craft	P/C
Discontinued	DISCONTD	Research Vessel	R/V
Established	ESTAB	Sailing Vessel	S/V
Exposed Location Buoy	ELB		
Fog signal station	FOG SIG	Compass Directions	
Large Navigation Buoy	LNB	East	E
Light	LT	North	N
Light List Number	LLNR	Northeast	NE
Lighted Bell Buoy	LBB	Northwest	NW
Lighted Buoy	LB	South	S
Lighted Gong Buoy	LGB	Southeast	SE
		Southwest	SW
		West	W

1 Color refers to light characteristics of aids to navigation only.

2 M/V includes: Steam Ship, Container Vessel, Cargo Vessel, etc.

STANDARD ABBREVIATIONS for BROADCASTS

Months

January JAN
 February FEB
 March MAR
 April APR
 May MAY
 June JUN
 July JUL
 August AUG
 September SEP
 October OCT
 November NOV
 December DEC

Days of the Week

Monday MON
 Tuesday TUE
 Wednesday WED
 Thursday THU
 Friday FRI
 Saturday SAT
 Sunday SUN

Various

Anchorage ANCH
 Anchorage ANCH PROHIB
 prohibited
 Approximate APPROX
 Atlantic ATL
 Authorized AUTH
 Average AVG
 Bearing BRG
 Breakwater BKW
 Broadcast Notice BNM
 to Mariners
 Channel CHAN
 Code of Federal CFR
 Regulations
 Continue CONT
 Degrees (temp; geo pos) DEG
 Diameter DIA
 Edition ED
 Effect/Effective EFF
 Entrance ENTR
 Explosive EXPLOS ANCH
 Anchorage
 Extinguished EXTING
 Fathom(s) FM(S)
 Foot/Feet FT
 Harbor HBR
 Height HT
 Hertz HZ

Horizontal clearance HOR CL
 Hour HR
 International COLREGS
 Regulations for
 Preventing Collisions
 at Sea, 1972
 Kilohertz KHZ
 Kilometer KM
 Knot(s) KT (S)
 Latitude LAT
 Local Notice to LNM
 Mariners
 Longitude LONG
 Maintained MAINTD
 Maximum MAX
 Megahertz MHZ
 Millimeter MM
 Minute (time; geo pos) MIN
 Moderate MOD
 Mountain, Mount MT
 Nautical Mile(s) NM
 Notice to Mariners NTM
 Obstruction OBSTR
 Occasion/Occasionally OCCASION
 Operating Area OPAREA
 Pacific PAC
 Point(s) PT (S)
 Position POS
 Position Approximate PA
 Pressure PRES
 Private, Privately PRIV
 Prohibited PROHIB
 Publication PUB
 Range RGE
 Reported REP
 Restricted RESTR
 Rock RK
 Saint ST
 Second (time; geo pos) SEC
 Signal station SIG STA
 Station STA
 Statute Mile(s) SM
 Storm signal S SIG STA
 station
 Temporary TEMP
 Through THRU
 Thunderstorm TSTORM
 True T
 Uncovers; Dries UNCOV
 Universal Coordinate UTC
 Time

Figure 13-1

STANDARD ABBREVIATIONS for BROADCASTS

Urgent Marine Information Broadcast	UMIB	Maryland	MD
Velocity	VEL	Massachusetts	MA
Vertical clearance	VERT CL	Mexico	MX
Visibility	VIS	Michigan	MI
Warning	WARN	Minnesota	MN
Weather	WX	Mississippi	MS
Wreck	WK	Missouri	MO
Yard(s)	YD	Montana	MT
		Nebraska	NE
		New Hampshire	NH
<u>Countries and States</u>		Nevada	NV
Alabama	AL	New Jersey	NJ
Alaska	AK	New Mexico	NM
American Samoa	AS	New York	NY
Arizona	AZ	North Carolina	NC
Arkansas	AD	North Dakota	ND
California	CA	Northern Marianas	CM
Canada	CN	Ohio	OH
Canal Zone	CZ	Oklahoma	OK
Colorado	CO	Oregon	OR
Connecticut	CT	Pennsylvania	PA
Delaware	DE	Puerto Rico	PR
District of Columbia	DC	Rhode Island	RI
Federated States of Micronesia	FSM	South Carolina	SC
Florida	FL	South Dakota	SD
Georgia	GA	Tennessee	TN
Guam	GU	Texas	TX
Hawaii	HI	United States	US
Idaho	ID	Utah	UT
Illinois	IL	Vermont	VT
Indiana	IN	Virgin Islands	VI
Iowa	IA	Virginia	VA
Kansas	KS	Washington	WA
Kentucky	KY	West Virginia	WV
Louisiana	LA	Wisconsin	WI
Maine	ME	Wyoming	WY

Figure 13-1

D.5.i.(3) By means of the weekly Broadcast Notice to Mariners summary as described in 3.g of this section. A NAVTEX cancellation shall be drafted with the NAVTEX indicator appearing at the end of the subject line (see D.4). Broadcasts may be canceled after the information appears in the Local Notice to Mariners (allowing sufficient time for mailing) or one hour after the completion of a scheduled marine event.

EXAMPLES OF BROADCAST CONTENTS

EXAMPLES OF BROADCAST CONTENTS

CCGD5 BNM 134-87
NC-SEACOAST
OUTER DIAMOND SHOALS LBB 2(LLNR 275)-
35-08.8N 75-23.2W-DISCONTD.

CCGD5 BNM 136-87
NC-SEACOAST
OUTER DIAMOND SHOALS LBB 2(LLNR 275)
35-08.8N 75-23.2W-DISCONTINUE BELL.

CCGD8 BNM 1557-87
MS-SEACOAST
HORN ISLAND PASS LWB "HI"
(LLNR 245/J3558)-RESET IN
30-10-37.5N 88-32-30.4W.

CCGD1 BNM 1155-87
RI-NARRAGANSETT BAY-
PROVIDENCE RIVER CHANNEL
LB 38(LLNR 17315)-41-46.4N 71-22.4W-
REP EXTING.

CCGD7 BNM 0193-87
FL-SEACOAST-HAZARD TO NAVIGATION-
36FT S/V LAYLA-ABANDONED AND ADRIFT-
RED HULL-KETCH RIG-LAST SIGHTED 20NM W
OF BAHAMAS 121515Q OCT 87-REPORT
SIGHTINGS TO U.S. COAST GUARD MIAMI.

CCGD7 UMIB 0008-87
EASTERN BAHAMAS-F/V BAHAMA SUN-
OVERDUE-ACTIVE SEARCH SUSPENDED.

CCGD5 BNM 135-87
NC-SEACOAST
OUTER DIAMOND SHOALS LBB 2(LLNR 275)-
RELOCATE TO 35-08-24N 75-23-24W.

CCGD5 BNM 137-87
NC-SEACOAST
OUTER DIAMOND SHOALS LBB 2(LLNR 275)
RELOCATE TO 35-08-24N 75-23-24W AND
DISCONTINUE BELL.

CCGD8 UMIB 13-87
MS-SEACOAST
HAZARD TO NAVIGATION-60FT F/V CAPTAIN
KEN-SUNK-30-05-13N 88-24-28W(PA)-
MARKED BY RED LB-Q R.

CCGD1 BNM 1143-87
ME-GULF OF ME
HAZARDOUS OPERATIONS-WEAPONS DROP
EXERCISES-220600Q TO 1800Q JUNE 87-
AREA BOUNDED BY 10NM RADIUS FROM
43-40N 69-48W-SURFACE TO 2,000FT.

CCGD7 UMIB 0007-87
EASTERN BAHAMAS-42FT F/V BAHAMA SUN-
OVERDUE-WHITE HULL-BLUE WATERLINE-
LAST SIGHTED AT SAMANA CAY
161000Q AUG 87-REPORT SIGHTINGS TO
U.S. COAST GUARD MIAMI.

CCGD7 UMIB 0009-87
EASTERN BAHAMAS-F/V BAHAMA SUN-VESSEL
LOCATED-CASE CLOSED.

EXAMPLES OF BROADCAST CONTENTS (cont'd)

CCGD1 BNM 1119-87
MA AND RI-SEACOAST-
HAZARDOUS OPERATIONS-FIRING
EXERCISES-JUN 22 TO 28-0530Q TO 2000Q-
AREA BOUNDED BY 41-10N 70-42W TO
41-10N 70-12.5W TO 40-48.5N 69-36W TO
40-30N 69-36W TO 40-10N 70-42W TO
ORIGIN.

CCGD5 BNM 1824-87
VA-SEACOAST-VA CAPES OPAREA-
HAZARDOUS OPERATIONS-FIRING
EXERCISES-152100Q TO 160100Q OCT 87-AREA
BOUNDED BY 36-47N 075-59W TO
36-47N 75-57W TO 36-51N 75-55W TO
36-52N 75-50W TO 36-49N 75-49W TO
36-51N 75-39W TO 36-45N 75-39W TO
ORIGIN.

PRIORITY
P 012353Z DEC 87
FM CCGDFIVE PORTSMOUTH VA//OPC//
TO AIG EIGHT NINE THREE SIX COMCOGARDGRU CAPE MAY NJ
INFO CDRUSAFD PHILADELPHIA PA USCGC ALERT
USCGC CATENARY USCGC CLEAT
USCGC HORNBEAM USCGC MATINICUS
USCGC POINT BATAN USCGC POINT FRANKLIN
USCGC RED OAK COGARD ANT CAPE MAY NJ
USCGC MORRO BAY COGARD BASE GLOUCESTER CITY NJ
COGARD COTP PHILADELPHIA PA COGARD MIO PHILADELPHIA PA
COGARD ANT RED OAK GLOUCESTER CITY NJ

ACCT CG-W2GERC
UNCLAS//N16502//

SUBJ: SAFETY BROADCAST NOTICE TO MARINERS//A//
CCGD5 BNM 2168-87
NJ-SEACOAST
CAPE MAY LT (LLNR 945/J1256)-
38-56.0N 74-57.6W-REP EXTING.

BT
NNNN

The resultant NAVTEX message will read:

ZCZC NA32

CCGD5 BNM 2168-87
NJ-SEACOAST
CAPE MAY LT (LLNR 945/J1256)-
38-56.0N 74-57.6W-REP EXTING.

BT
NNNN

E. Special Warnings.

1. Responsibility and Scope.

- a. The Special Warning message system provides for the expeditious handling and dissemination of government (both U.S. and foreign) proclamations and decrees to all U.S. ships throughout the world.
- b. The content of Special Warnings is the responsibility of the Department of State (Maritime Affairs).
- c. Special Warnings are promulgated by Defense Mapping Agency Hydrographic/Topographic Center (DMAHTC) and broadcast in the same manner and on the same Address Indicating Groups (AIG's) as NAVAREA IV/HYDROLANT, NAVAREA XII/HYDROPAC messages. An additional AIG is used to send such messages to home offices of U.S. steamship companies. Special Warnings incorporate the expression "Special Warning" and a serial number early in the text. Special Warnings differ from NAVAREA IV/HYDROLANT and NAVAREA XII/HYDROPAC in that the content is political in nature rather than having to do with marine information.
- d. Further dissemination of Special Warnings is achieved by DMAHTC publishing them in the Notice to Mariners and Daily Memorandum. An annual listing of the texts of all Special Warnings in effect is published in January each year in Notice to Mariners No. 1.
- e. In addition to the AIG of a NAVAREA IV/HYDROLANT, NAVAREA XII/HYDROPAC, DMAHTC adds selected addressees for Special Warnings, e.g., Chief of Naval Operations and Secretary of State. DMAHTC also includes Commander, Atlantic Area and Commander, Pacific Area as action addressees of Special Warning messages.

2. Coast Guard Procedures.

- a. Inasmuch as Special Warnings are issued to the NAVAREA IV/HYDROLANT and NAVAREA XII/HYDROPAC AIG's, district commanders under the OPCON of COMLANTAREA should ensure they are listed on the NAVAREA IV/HYDROLANT AIG (currently AIG 4501) and district commanders under the OPCON of COMPACAREA should ensure they are listed on the NAVAREA XII/HYDROPAC AIG (currently AIG 4557).

- E.2.b. Upon issuing a Special Warning on the AIG's described above, DMAHTC will originate a separate message, action to district commander, information to the Commandant. The message is to "flag" the Special Warning message. Upon receipt of a Special Warning message, coastal district commanders should broadcast it in a manner similar to issuing a Broadcast Notice to Mariners.
- c. The Special Warning should be broadcast upon receipt and at least during the next two scheduled broadcasts unless otherwise directed by the Area Commander. Special Warnings are not broadcast by VHF-FM stations, and should not be broadcast by MF voice (2670 kHz) or NAVTEX unless the Special Warning applies to the area covered by those stations. The Special Warning broadcast should be identified exclusively by its assigned number and must not be replaced with or supplemented by a district Notice to Mariners number.
- d. In addition to the radio broadcast, the Special Warning should be published at least once in the Local Notice to Mariners.
- e. Depending on the content of a Special Warning, DMAHTC may or may not include CCGDTWO and/or CCGDNINE as an addressee on the "flag" message. A Special Warning not "flagged" by DMAHTC to them may be radio broadcast at the discretion of the commands. CCGDTWO and CCGDNINE should publish a Special Warning at least once in the Local Notice to Mariners whether or not they issue a Broadcast Notice to Mariners.
- f. In order to ensure the receipt of Special Warning messages in critical areas, DMAHTC includes in the dissemination message, (but not as part of the Special Warning) which includes the following: "All U.S. Flag Merchant Ships (in general area of incident) acknowledge receipt of this message to DMAHTC through U.S. Government radio facilities." The responses to this message, compared with the AMVER data base, enables DMAHTC to ensure receipt of the Special Warning by all vessels in the critical area. All Coast Guard radio facilities must be prepared to accept and forward Special Warning receipt messages addressed to DMAHTC.

CHAPTER 14. LIGHTHOUSE MAINTENANCE

A. Introduction.

1. History of Lighthouse Unmanning. The Coast Guard has been in the process of unmanning lighthouses ever since the responsibility for operating 503 lighthouses was assumed with the transfer of the Lighthouse Service in 1939. Due to the high cost of maintaining isolated manned units, lighthouses have been converted to unattended operation. Because of the distinctive character of each lighthouse, the efforts required for automation varied significantly. The simplest and least costly conversions were accomplished first. These conversions often consisted of nothing more than electrification and unmanning of the lighthouse. In the 1960s it became apparent that the remaining lighthouses had high power requirements and were either:
 - a. in a remote location which presented a problem in monitoring the aid,
 - b. in a populous area and subject to a high incidence of vandalism, or
 - c. of a historically sensitive nature.The solution to these problems was the Lighthouse Automation and Modernization Project (LAMP). LAMP provided for reliable power at isolated sites, monitoring of remote units, centrally supported standard equipment, and, more recently, structural preservation.
2. Problems Resulting from the Process of Unmanning. Although lighthouse unmanning is economically attractive, many associated maintenance problems have been encountered subsequent to the removal of lighthouse personnel. This chapter will provide a framework for efforts to resolve these problems.
 - a. Unsightliness and deterioration of lighthouses are major problems, not only from the image an unsightly facility reflects on the responsible unit or Coast Guard, but also to the safety of servicing personnel and the capital investment in the buildings. The causes of these problems are not quite so obvious. The failure to complete a maintenance plan is the main reason for the decline in the condition of a particular lighthouse.

A. 2. a. (1) Typical misconceptions include:

- (a) The Aid to Navigation Team's (ANT) belief that its responsibility is only for the lighthouse's signal and not for the cleanliness and general maintenance of the structure.
- (b) The group commander's assumption that the lighthouses are no longer a responsibility after the removal of personnel.
- (c) The belief that a preventive maintenance plan can be deferred with minimal affect.
- (d) That lighthouse maintenance can be deferred because they are not active units.
- (e) That the responsibility for structural maintenance will end if the lighthouse is leased or licensed.

b. Unreliability of signals is another problem with a different cause. Servicing personnel repair proficiency is not high because (a) mockups for regular review and practice are distant, (b) actual visits to lights are infrequent and intimate equipment familiarity is not maintained. Servicing personnel fatigue after a long and tiring small boat ride to a remote light also diminishes efficiency. Despite our best training efforts, the proficiency of maintenance personnel is cyclical. Individuals arrive with little automated aid experience. Their proficiency improves through training and on-the-job experience until the transfer cycle begins again.

B. Lighthouse Maintenance Strategy

1. Maintenance Goals.

a. Equipment Maintenance. Each lighthouse equipment suite is provided with maintenance intervals which shall be followed.

- (1) Inactive equipment or assemblies should be removed.

b. Facility Maintenance. Each lighthouse serves not only as a shelter and support for the equipment, but also as a daymark. Additional considerations

| B. 1. b. (cont.) of historical preservation may also be
| needed. Lack of facility maintenance has come
| under close public and congressional scrutiny.
| Each lighthouse should provide an enclosure for
| the signal equipment, a safe workplace, an
| effective aymark, and reflect a favorable
| appearance for the Coast Guard.

- | (1) Foundation or structural flaws should be
| identified and their maintenance programmed
| through the shore maintenance system.
- | (2) Structures should be weatherproof. Adequate
| ventilation should be provided.
- | (3) Structures should be vandal resistant to a
| high degree.
- | (4) There should be virtually no rust or
| structural deterioration.
- | (5) Structures should be completely sae for
| servicing personnel. Overnight facilities,
| where necessary, should be kept clean and
| habitable.

| c. Elimination of Unnecessary Structures. Lighthouse
| maintenance had been accomplished by lightkeepers,
| bases, M&R detachments, and tenders. These forces
| have diminished through lighthouse automations,
| personnel reductions, reorganizations and an
| overall reduction in personnel and facilities.
| The existing buildings were then divided among the
| remaining aids to navigation servicing forces. In
| order to reduce this workload to conform to the
| capabilities of the servicing forces, every effort
| shall be made to eliminate unnecessary structures
| and appurtenances to reduce the need for
| structural maintenance. Any demolition that may
| have a detrimental effect on the historicity
| site must be cleared through the State Historical
| Preservation Officer (SHPO). Often, the SHPO will
| recognize the difficultes in maintaining isolated
| structures. In some cases a thematic program can
| be established. As an example, keepers quarters
| at inaccessible stations may be permitted to be
| demolished if a similar quarters is accessible and
| is being maintained. Consider the following
| actions to reduce the need for structural
| maintenance:

- | (1) Demolish or excess outbuildings at formerly
| manned lighthouses.

B. i. c. (2) Use standard volume fiberglass containers for signal and power equipment whenever practicable to eliminate the need for retaining outbuildings that require extensive structural maintenance.

(3) Remove unnecessary chimneys, stanchions, awnings, fences, catwalks, and unused equipment whenever practicable.

(4) Replace light towers with low-maintenance structures wherever there is no longer a need for a major daymark.

| (5) Report as excess the properties which contain
| buildings no longer required for operational
| aids. Ensure required easements are retained
| for visibility of signals and access.

d. Inhabitation. One of the primary goals of LAMP has been the elimination of lightkeeper billets, a scarce and costly resource. Unfortunately, this goal is not realistic in every case because of vandalism or an extremely harsh environment. In these situations, reinhabitation of formerly manned lighthouses may be necessary. The following methods of providing a presence at lighthouses are listed in order of preference:

(1) Use lightkeeper's dwelling for USCG housing for personnel attached to nearby units.

| (2) License the lighthouse and associated
| outbuildings to another federal agency, local
| government, or nonprofit organization with a
| compatible interest in utilizing the
| lighthouse property. Our interests are
| served best by an active licensing program
| for vacant lighthouse properties. Interested
| groups often can be encouraged to combine
| their programs and financial bases and
| therefore be more capable of supporting a
| lighthouse license.

| (3) Lease the lighthouse and outbuildings to
| private citizens at fair market rates.
| Consult the Real Property Manual for
| determination of fair market rate and any
| reimbursement to the lessor for maintenance
| performed.

(4) Assign a military caretaker to maintain the structures and grounds.

B. 2. Maintenance Standards.

- a. Daymark. Every lighthouse is a daymark. The distinctive shape and colors identify the aid in the same way that numbers or letters identify minor aids. Therefore, it is imperative that these characteristics be maintained as advertised in the Light List. Color characteristics may be changed, although changes should be minimized to avoid unnecessary confusion. The daymark provided by a major structure is vastly superior to the largest dayboards and should be addressed whenever a modern replacement tower is considered. Skeleton towers and monopoles simply do not provide the daytime nominal range of a large lighthouse for landfall or harbor acquisition.
- b. Cosmetics. Lighthouses represent the Coast Guard. The public often views nearby lighthouses as part of their local heritage and resents any deterioration. The Coast Guard has a mandate to maintain lighthouses and the public expects compliance. It is not a duty that can be neglected without arousing considerable public concern.
- c. Signal Support and Equipment Shelter. One of the main functions of a lighthouse is to support an optic at a height commensurate with the required geographic range. An associated function at many lights is to provide shelter for power and control equipment. Alternatively, power and control hardware may be housed in adjacent buildings or standard volume containers. Structural maintenance goals must provide clean, dry spaces for electrical and electronic equipment and a sturdy tower for support of and access to the main and emergency signals.
- d. Safety and Cleanliness. Maintenance must also include preservation of safety equipment and devices installed or required at lighthouses. Lighthouses over twenty feet tall pose a safety hazard from falls. Safety railings around exterior walkways and galleries, as well as handrails along spiral ladders, shall be maintained in an effective condition. Docks and access ladders must be safe for boat landings at offshore lights. Safety inspections shall be conducted in conjunction with routine district, MLC, and group inspections to ensure compliance with standard safety procedures for working around engines, batteries, and electrical equipment. Lighthouse interiors shall be kept clean, free of

B. 2. d. (cont.) debris, expended batteries, oil, obsolete equipment and refuse. Overnight facilities, where necessary, should be kept clean and habitable. The group commander, during inspections, should examine the living spaces.

e. Historicity. Lighthouses and outbuildings that are listed, nominated, or eligible for listing in the National Register of Historic Places shall be maintained in a manner befitting their historical significance. See Section 12.B. of this manual.

3. Maintenance Policy.

a. Levels of Maintenance. The following levels apply to all aspects of lighthouse maintenance and servicing. Preventive and corrective maintenance actions shall be accomplished by the lowest level that has the capability for any particular work required. Deficiencies detected by lower levels that are incapable of performing the required maintenance shall be reported to the next higher level using established reporting procedures.

(1) Organizational Maintenance. This is the routine preventive maintenance that is performed by the primary servicing unit (usually ANTs, stations and small vessels) at nominal quarterly intervals. It relates to the manned unit's regular upkeep of its own facilities and equipment. On an unmanned lighthouse this level of maintenance generally consists of cleaning, servicing, lubricating, minor repairs, and operational testing of systems, (i.e. run, take readings, adjust), housekeeping, and painting. Repairs must often be slated for accomplishment at a higher level of maintenance. However, it is the responsibility of organizational-level maintenance units to communicate all structural discrepancies using the Shore Station Maintenance Report (SSMR.) Without this line of communication, assistance cannot be assured and the primary servicing unit would soon be overburdened with constantly increasing workloads. The remote nature of lighthouses dictates complete documentation of structural conditions to keep group, district and engineering support commanders appraised of the status of the facilities and to eliminate the need for unscheduled visits to lights.

B. 3. a. (2) Intermediate Maintenance. The second level of maintenance is generally a nonroutine, corrective nature performed by units having a variety of specialized technicians. This maintenance usually consists of more difficult or extensive work performed at the lighthouse. Specific tasks may include equipment calibration, replacement of major components, major troubleshooting and repairs, fabrication of parts, large-scale painting, structural or masonry repairs, welding, specification writing or technical guidance. District, group, bases, buoy tenders, support centers, MLC, SMD, and Headquarters staff personnel and contractors perform this level of maintenance.

(3) Depot Maintenance. This type of maintenance is performed by shore commands or commercial repair facilities that have the capability for repair or complete overhaul of even the largest and most complex equipment assemblies and parts. Depot level support may be obtained within the Coast Guard from the Yard, the Supply Center, EECEN, EELAB, support centers, or bases. These facilities maintain extensive inventories, replacement parts and spare systems. They employ a wide variety of technicians and specialists. Initiating such maintenance is a responsibility of the group commander, although the initial request for assistance may come from the primary servicing unit or unit performing intermediate maintenance that requires depot-level support.

C. Lighthouse Maintenance Responsibilities.

1. Headquarters.

- a. Chief, Short Range Aids to Navigation Division (G-NSR) is responsible for managing the U.S. system of short range aids to navigation, which includes lighthouses (but not radionavigational aids.) The responsibility with respect to lighthouses involves:
- (1) Maintaining documents and reports required for planning, programming and budgeting.
 - (2) Initiating, reviewing and approving plans for establishment, disestablishment or change of lighthouse and associated equipment.

- C. 1. a. (3) Developing planning criteria and operational requirements.
- (4) Establishing operational procedures, staffing standards and training requirements for maintenance personnel.
- (5) Monitoring the effectiveness of lighthouse signals.
- (6) Initiating requests to support managers for improving performance or efficiency.
- (7) Maintaining liaison with international, federal, state, and municipal agencies in carrying out the above responsibilities.
- (8) Obtaining and administering funds for organizational-level maintenance.
- b. Chief, Radionavigation Division (G-NRN) manages radionavigational aids collocated with lighthouses.
- c. Chief, Civil Engineering Division (G-ECV) provides engineering support for the short range aids to navigation program by preparing or reviewing plans, designs and specifications for the construction, procurement, installation, repair, maintenance and alteration of lighthouse structures and signal, power and control equipment. That responsibility includes:
 - (1) Designing special projects for districts.
 - (2) Issuing instructions, directions and standards for lighthouse equipment and structural maintenance.
 - (3) Preparing and maintaining inventories and allowance lists for major aids to navigation.
 - (4) Monitoring progress, scheduling and material requirements associated with the construction, installation, maintenance and repair of lighthouse systems.
 - (5) Coordinating central contracting and supply of standard lighthouse signal, power and control systems.
 - (6) Obtaining and administering funds for intermediate and depot-level maintenance.

- C. 1. c. (7) Participating in contract procurement proceedings and monitoring contractor performance.
2. District Commanders. The district commander is responsible for coordinating the activities of district aids to navigation servicing units and group staffs, and and to communicate support needs to the Maintenance and Logistic Command to ensure effective lighthouse maintenance is accomplished at all levels.
- a. Chief, Aids to Navigation and Waterways Management Branch (oan) shall ensure that lighthouses are maintained to established standards and that discrepancies are corrected in a timely manner. Specific responsibilities include:
- (1) Training of maintenance team personnel.
 - (2) Identifying required personnel qualifications.
 - (3) Organization and operation of servicing units.
 - (4) Cognizant staff officers shall be actively aware of the condition of all district lighthouses by means of SSMRs, CASREPs, aid discrepancy reports, photography and inspection reports.
 - (5) Providing administrative guidance. Specific instructions that supplement or amplify the provisions of this chapter should be included in the district OPLAN or appropriate directire. Maintenance responsibilities and assignments shall be promulgated for all organizational, intermediate and depot level activities. Mere duplication of the information contained herein shall be avoided.
3. Group commanders. The group commander is responsible for coordinating and monitoring the establishment, disestablishment, servicing and maintenance of all lighthouses and their associated aids to navigation signals within the group. The appearance and reliability of lighthouses is a functional gauge of the commander in meeting these responsibilities. The responsibility may not be delegated to subordinate units although specific maintenance assignments should be made and documented in writing. A group aids to navigation officer shall be assigned to assist the group commander in carrying out these responsibilities, either as a primary or collateral duty, depending upon the number and categories of aids to navigation within the group. Group responsibilities include:

- C. 3. a. Administrative guidance, coordination and support of all assigned group aids to navigation servicing units.
 - b. Direct control over major aid servicing teams and structural maintenance teams that are part of the group.
 - c. Conducting inspection and training programs that include regular visits to automated lighthouses. Experience has shown that the direct involvement of the group commander in this responsibility has a positive effect on lighthouse maintenance.
 - d. Ensuring that appropriate qualification codes are assigned to billets involved with major aids to navigation maintenance and that qualified personnel are assigned.
 - e. Maintenance of a Master SSMR file for all lighthouses within the group area of responsibility except those specifically assigned to another unit.
 - f. Arranging for intermediate or depot-level maintenance in support of group units.
 - g. Where lighthouse maintenance can be more effectively conducted at the group level, an OPFAC modifier should be established for a group lighthouse maintenance team. The team's duties would be the same as those specified below for ANTs.
4. Aid to Navigation Teams. An ANT is normally assigned primary responsibility for organizational maintenance of unmanned lighthouses. This in no way relieves the group commander of the overall responsibility for the condition of all assigned lighthouses, both manned and unmanned. The ANT Officer-in-Charge is responsible to ensure the continuous availability of all signals, the proper functioning of power and control systems, and the upkeep of all assigned structures and grounds. ANTs are not intended to be capable of all types of lighthouse maintenance and repair work. They are required to communicate (i.e., submit SSMR's) all deficiencies that are beyond their capabilities and to inform the group commander of priority maintenance projects that affect the safety of personnel or the structural integrity of the lighthouse and associated outbuildings. Lighthouse maintenance billets have been supplied from resources freed from automations, and generally include the following billets:

- C. 4. a. Electrician's Mate (EM), Qual Code NH, NP and NR, as team leader.
 - b. Electronics Technician (ET), Qual Code NH, NM, NN, NP, and NR, whenever a radio beacon or monitor equipment is installed. (May be assigned as team leader in lieu of an EM.)
 - c. Machinery Technician (MK), Qual Code NJ. Responsible for diesel generators and fuel systems.
 - d. Boatswain's Mate and Damage Control man billets are assigned to plan, supervise, schedule and complete routine structural maintenance.
 - e. Nonrated personnel are for unskilled or apprentice labor.
5. Buoy Tenders. Buoy tenders have been highly effective as intermediate-level maintenance forces and are particularly suited to lighthouse maintenance work. They have experienced technicians, a wide variety of maintenance equipment, planning and management skills and the capability for sustained operations at remote sites. However their schedules dictate that such work be assigned by tender-order. Because of the specific training required to maintain an automated light system, tender maintenance normally will not include signal or equipment. Group, Base or ANT support is usually required in procuring equipment and scheduling supply deliveries. Additional technical experts in lighthouse renovation techniques may also be obtained from a group, district, support center, or Shore Maintenance Detachment.
6. Stations. Stations may be assigned organizational level responsibility for lighthouses, especially where the housing units are used for station personnel. In such cases, duties will be the same as for ANTs.
7. Maintenance and Logistic Command Organization.
- a. MLC Commanders. The MLC commander has the overall responsibility for the structural integrity of lighthouse structures. The MLC coordinates engineering, real property activities, and construction contracts at lighthouses and other aids to navigation facilities.
- (1) Civil Engineering Division - Provides depot level maintenance, (inspections, management of the SSMR program and approves Structuralts,

- | C. 3. a. (1) (cont.) designs alterations, and provides
| technical information for organizational
| maintenance where necessary. Establishes
| maintenance guidelines for organizational
| maintenance. Ensures compliance of standards
| through inspections. Supervises the
| Facilities Design and Construction Centers
| and the Shore Maintenance Detachments.
- | (a) Shore Maintenance Detachments. The SMD
| designs alterations, provides technical
| information for organizational
| maintenance where necessary. Conducts
| biennial inspections of lighthouses to
| determine structural condition.
| Provides project priority input to the
| MLC for scheduling projects.
- | (b) Facilities Design and Construction
| Command. The FDCC will design and
| inspect major lighthouse projects
| including the rebuilding, relocation or
| a major renovation.
- | (2) Finance Division - The Real Property Section
| arranges leases and licenses at lighthouses,
| providing copies to groups which inspect for
| compliance with all lease or license
| provisions; maintains property records and
| historical files on lighthouse property; and
| provides required reviews of property use.
| The Accounting Section provides OG30 funds
| for organizational maintenance beyond the
| ability of the ANT or group, and ensures
| lighthouse maintenance projects receive an
| equitable share of OG30 shore maintenance
| funding based on Resource Change Proposals
| and AC&I follow-on funding.
- | (3) Support Centers. The Support center is an
| intermediate-level maintenance activity that
| may be called upon to provide technical
| assistance or skilled personnel in support of
| lighthouses. Technicians from these units
| may also augment organizational-level
| maintenance teams whenever adequately trained
| or skilled personnel are not available.

D. Inspections.

1. Servicing Unit. Lighthouse inspections shall be
carried out by primary servicing units during all
scheduled and emergency servicing visits. Structural,

- D. 1. (cont.) mechanical, and electrical deficiencies that cannot be repaired during these visits shall be reported to the Group Commander, who will arrange for remedial action by a higher level maintenance force.
- 2. Group. Group commanders shall personally inspect all manned lighthouses and at least a representative sampling of unmanned lighthouses annually. Group Engineers and/or aids to navigation officers shall inspect those lighthouses not inspected by the group commander. Inspections shall ensure structural integrity, general cleanliness, safe working conditions, and proper functioning of equipment.
- 3. District. The Chief, Aids to Navigation and Waterway Management Branch shall personally inspect a representative number of lighthouses within the district on an annual basis. To reduce travel complications this should be in conjunction with group commanders visits, and therefore will provide an excellent opportunity for the two most involved managers to discuss lighthouse management.
- | 4. Shore Maintenance Detachment. The SMD conducts the
| biannual civil engineering inspections required by the
| Civil Engineering manual. Copies of this inspection
| should be provided to the group commander with a copy
| to the district Aids to Navigation and Waterways
| Management Branch. Deficiencies in the facility
| maintenance should be addressed, as well as the
| organization which will correct a discrepancy.

E. Required Reports.

- 1. SSMRs. The Shore Station Maintenance Program is the established system of scheduling, assuring, and controlling the maintenance of shore facilities. This system applies to all shore facilities, including manned and unmanned lighthouses. A thorough explanation of the responsibilities for managing this system is included in the Civil Engineering Manual. ANTs and groups are the primary initiators of lighthouse related SSMRs which in turn develop engineering projects. Major recurring items beyond the scope of organizational-level or depot-level maintenance abilities should be submitted on SSMRs to be included on the backlog of projects.
 - 2. CASREPs and Discrepancy Reports. District OPLANs contain instructions for completing CASREPs and Discrepancy Reports. ANTs and groups should also be aware of any trend in equipment deficiencies which result in an increase of casualties.
- E. 2. a. Identifiable trends should be discussed with the district training team and the Technical Advisor at the NATON school for service-wide dissemination.

CHAPTER 15. SURVEY POSITIONS OF FIXED AIDS TO NAVIGATION

A. General

1. Overview. The quality of the geographic coordinates of a fixed aid to navigation affects both the advertising of its position and the analytical evaluations which make use of the coordinates. Inaccuracies in the geographic coordinates produce compounded errors in the positioning of aids to navigation.
2. Geodetic Surveying. In the surveying of large geographical areas, the exact curvature of the sea level surface of the earth must be considered. Surveying of this type is known as geodetic surveying and contrasts with the more familiar land surveying which represents the terrain as a plane surface. The earth's geographic coordinate system of latitudes and longitudes does not coincide with a plane surface two-dimensional grid; therefore, the results obtained from plane surveying must be corrected for scale (curvature) and elevation (reduced to sea level) before they are used in geodetic computations.
3. Geodetic Control. Geodetic surveys are divided into horizontal surveys and vertical surveys. Vertical surveys are performed to establish elevations referenced to a tidal-based national datum. Horizontal surveys are performed to determine two-dimensional positions referenced to the earth's surface. They are adjusted to fit a mathematical figure of the earth (an ellipsoid of revolution) and accommodate variations from that figure caused by irregular mass distribution in the earth. Geodetic surveys which meet federal standards are tied to the National Geodetic Reference System (NGRS) for purposes of satisfying the collective needs of government agencies and the general public. Latitude and longitude coordinates which are incorporated into the NGRS are based on a centrally located starting station (datum point - station MEADES RANCH in Kansas). The selection of the datum point and minimizing the differences between astronomical determinations from distances/angles measured on the earth ensures that the mathematical representation and the physical representation (mean sea level surface) are in close agreement. New datums have been developed to fit improved determination for the size and shape of the earth. The current adopted datum used in the United States for the NGRS is the North American Datum of 1983 (NAD 83). It is a geocentric datum; i.e., the center of the ellipsoid will be referenced to the Earth's center of mass. NOTE: Coast Guard positioning files are referenced to NAD 27. Mixing positions referenced to other datums will result in error in positioning computations. For more information on datums, see COMDTINST 16502.9.

4. Geodetic Classification. Geodetic surveys are classified by the procedures used, the tolerances allowed for field observations, and the network geometry (station spacing and configuration). Standards of accuracy for surveys are summarized in the Federal Geodetic Control Committee's (FGCC) publications "Standards and Specifications for Geodetic Control Networks" dated Sept. 1984. Horizontal geodetic surveys are classified into orders which may be further subdivided into classes according to the relative accuracy as indicated in the following page in Table I. All surveys (including reference landmarks must be accomplished to at least third-order, Class I accuracy to satisfy National Geodetic Survey (NGS) policy for incorporating geodetic data into the National Geodetic Data Base. Fixed aids that are used solely for navigation (except ranges) have "low level" accuracy requirements. These requirements for position determinations can be satisfied by measuring horizontal sextant angles to "close the horizon." Replicating the measurements is used to help increase the confidence of the position.

5. Accuracy and Error. The degree of accuracy for the classification levels is expressed as a ratio of the estimated error divided by the distance to adjacent connected stations (stations which have observations made between each other). Accuracy tolerances are defined for horizontal distance measurements (closure in length), angular measurements (closure in azimuth) and the combination of both measurements (closure in position). The error of closure is the amount by which a value of a quantity obtained by surveying operations fails to agree with another value of the same quantity held fixed from either earlier determinations or with a theoretical value of the quantity. In no instance shall the closure be used as the sole criteria for determining the accuracy of the survey!

B. Survey Methods.

1. Primary. Primary geodetic methods for establishing horizontal control are triangulation, trilateration, and traverse. Classifications and standards for classical surveying methods have been established by the FGCC publications. The following methods are defined according to "Definitions of Terms Used in Geodetic and Other Surveys" U.S. Coast and Geodetic Survey Special Publication No. 242.

TABLE I

Standards for the Classification of Horizontal
Geodetic Control and Principal Recommended Uses

Classification	Relative Accuracy	Recommended Uses
First-Order	1 part in 100,00	Primary National Network, Metropolitan Area Surveys Scientific Studies.
Second-Order Class I	1 part in 50,000	Area control which strengthens the National Network
Class II	1 part in 20,000	Area control which contributes to, but is supplemental to, the National Network
Third-Order Class I	1 part in 10,000	General control surveys referenced to the National Network. Local Control surveys.
Class II	1 part in 5,000	

NOTE: See the Federal Geodetic Control Committee publication "Standards and Specifications for Geodetic Control Networks" for further specifications.

- B. 1. a. Triangulation. A method of surveying in which the stations are points on the ground at the vertices of a chain or network of triangles. Angles are observed instrumentally and sides are derived by computation from selected triangle sides called base lines. Lengths of baselines are obtained from direct measurement on the ground (see figure 15-1).
- b. Trilateration. A method of extending horizontal control where the sides of triangles are measured rather than the angles, as in triangulation (see figure 15-2).
- c. Traverse. A sequence of lengths and directions of lines between points on the earth obtained by or from field measurements for the purpose of determining the positions of the points (see figure 15-3). An "open traverse" starts from a station of known position, but does not end on such a station. Also known as a "traverse spur", the open traverse produces a "no check" position and therefore should not be used.
- d. Satellite Surveys. Satellite surveying, primarily using the Global Positioning System (GPS), is rapidly becoming the primary surveying method for both the public and private sectors of the geodetic surveying community. Satellite surveying is more cost-effective and produces accuracies as good or better than traditional survey methods. Software included in many geodetic GPS receivers produce a more total answer, including data output in the format required by NGS (Blue Book Format). Due to the great difference in equipment, procedure, and calculation of surveys performed by satellite methods, separate specifications are being written by the Federal Geodetic Control Committee for satellite surveying.
2. Secondary. Certain configurations of known and unknown points and certain types of field measurements are capable of determining positions with sufficient accuracy to meet third-order requirements.
- a. Intersection. This is a method of determining horizontal positions of a point by observing angles or bearings from two or more points of known position, thus measuring directions that intersect at the station being located. Third order accuracy requires observations from at least three surveyed stations of equal or better accuracy than the requirement of the point being positioned. When the object is observed from only two known stations, the position falls in the category of a "no-check

FIGURE 15-1

FIGURE 15-1

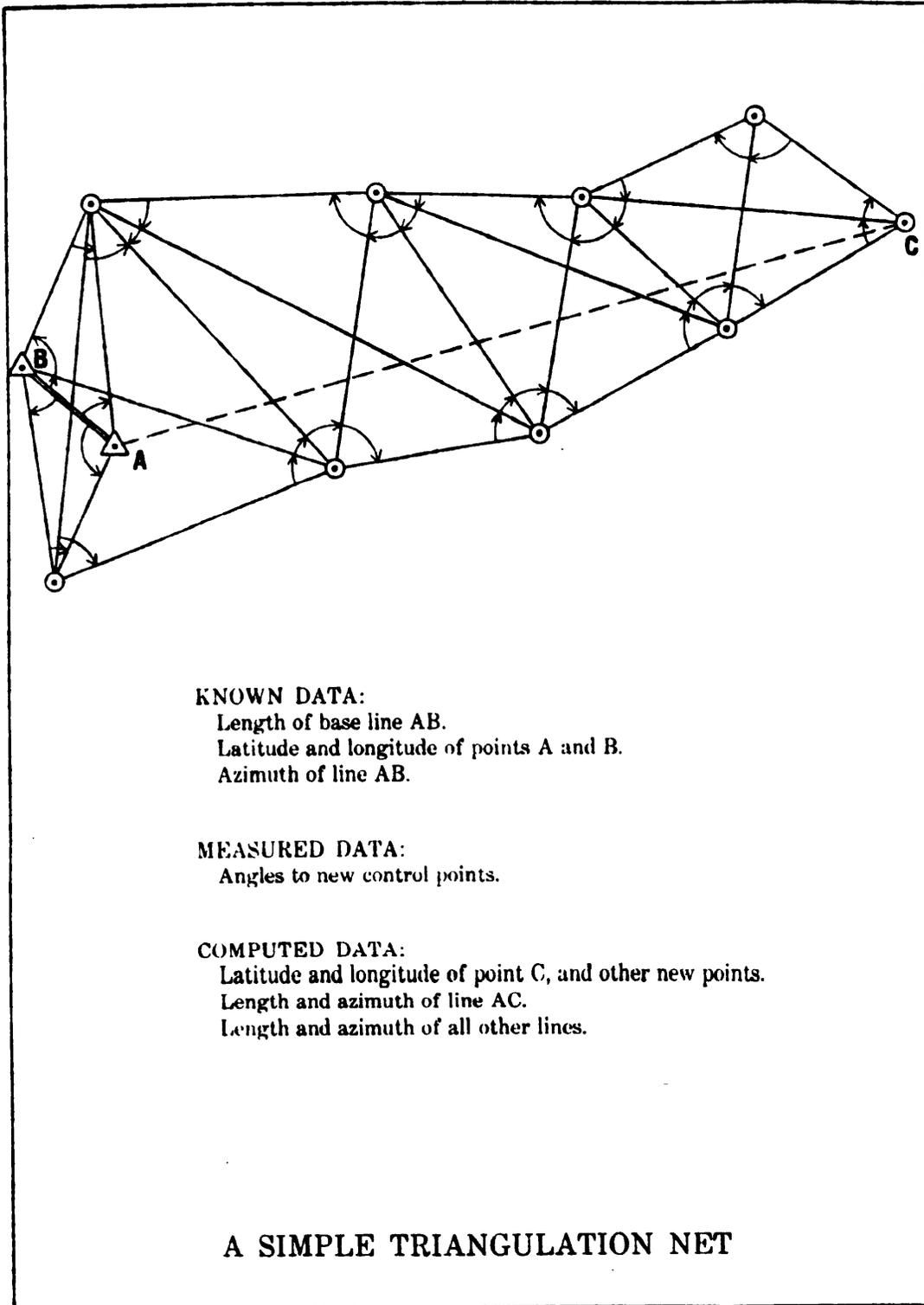


FIGURE 15-2

FIGURE 15-2

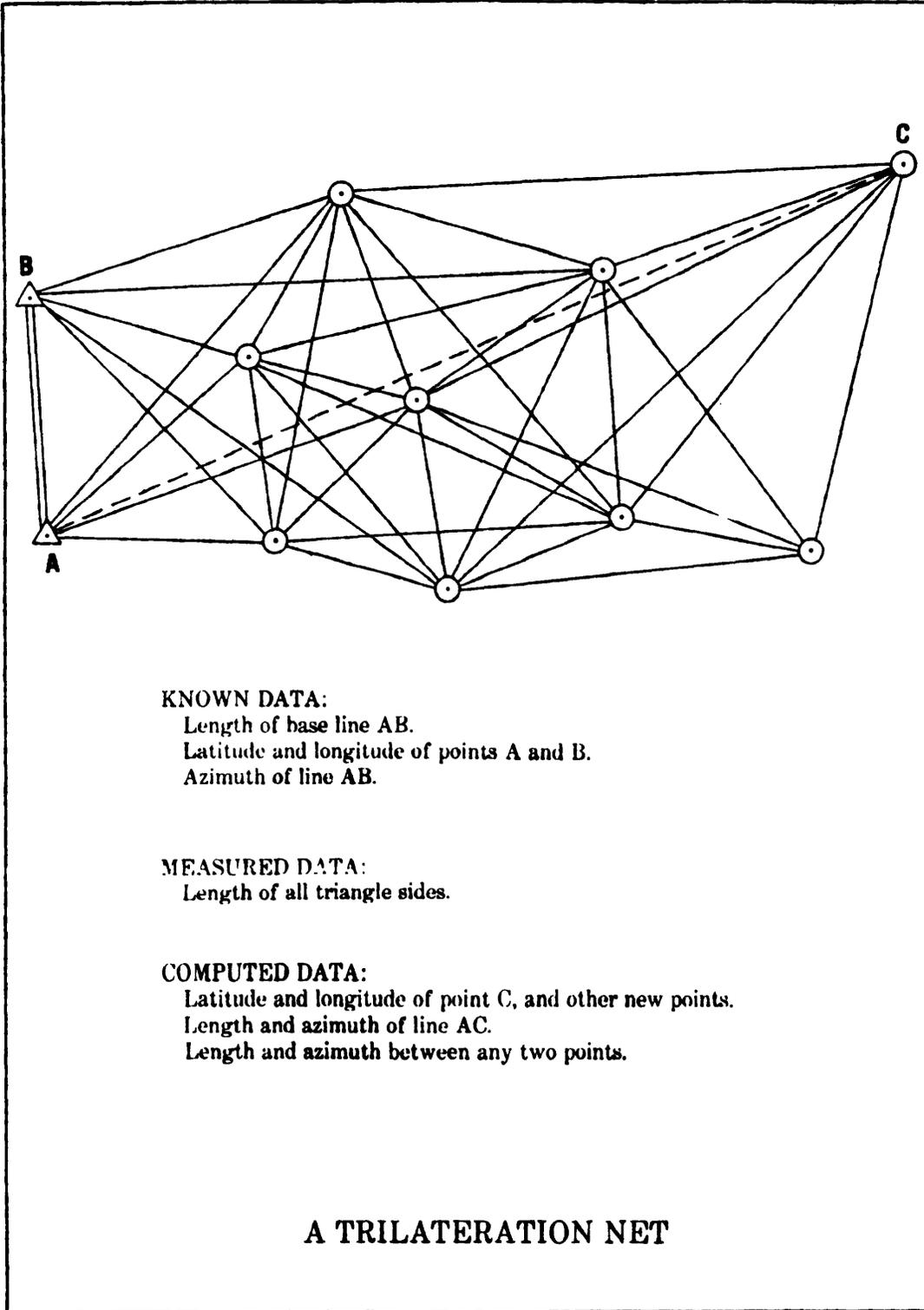
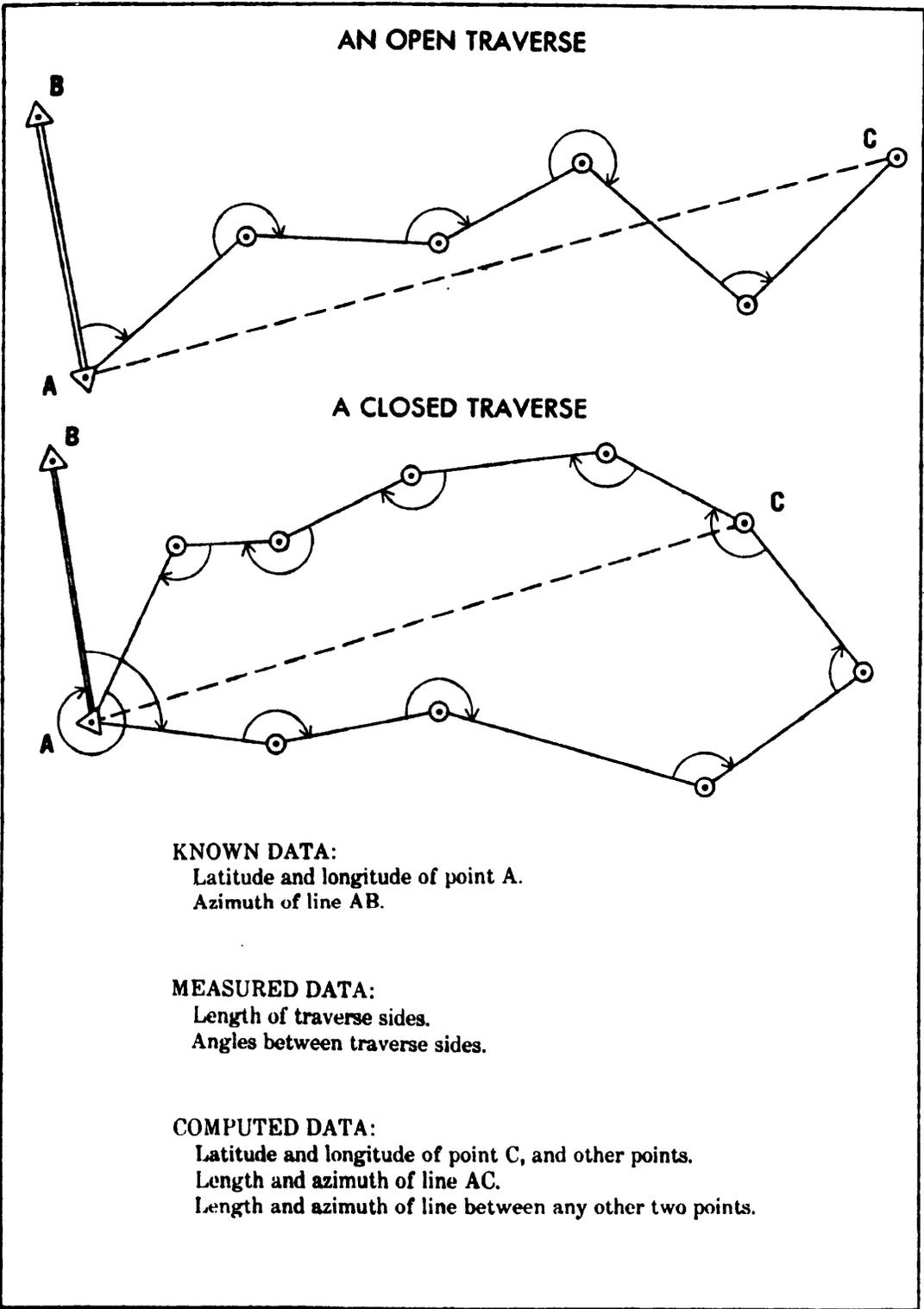


FIGURE 15-3

FIGURE 15-3



B.2.a.cont. position," as there is no proof that such observations are free from blunders.

- b. Resection. The determination of the horizontal position of a survey station by observed directions from the unknown station to at least three points of known positions.
- c. Multilateration. Positions are determined by measuring distances from an unknown point to stations with known positions. The design of this method is weak because in contrast to trilateration, the observations do not develop triangles or validated base lines.

3. Other Methods.

- a. Hydrographic Surveys. Radio-positioning systems used to position reference landmarks are classified by operating ranges (short, medium, and long) and mode of operation (hyperbolic or ranging). American Practical Navigator, Bowditch, Vol. I, chapter 43, provides further information on radio-positioning systems. Before a hydrographic survey is conducted, a field party is responsible for a reconnaissance of all previously established horizontal control stations in the immediate vicinity of the project area. As described in the National Ocean Service, Hydrographic Manual Fourth Edition, chapter 33, where existing control is inadequate, supplemental control for hydrographic surveys (stations from which radio signals will be located) shall be established with an accuracy of not less than that prescribed for third-order, class I.
- b. Aerial Photogrammetry. Geodetic surveying may also be accomplished using photogrammetric methods such as aero-triangulation. The accuracy of this technique is dependent upon the spacing of verified stations, the accuracy level of existing horizontal control, and the altitude of the overflight. Acceptable results can be achieved, but the cost efficiency of aero-triangulation is a function of the number and density of the positions requiring surveying. Like all other surveys, aerial photogrammetry requires reconnaissance prior to planning and paneling (improving conspicuity) of control sites by field parties.
- c. Inertial Surveying Systems (ISS). An ISS is normally mounted in a vehicle (land based or helicopter), the heart of the system consists of accelerometer

- B. 3. c. (cont'd) platforms which are oriented and maintained by mechanical gyroscopes. The accelerometer measures the acceleration of a system and converts the acceleration into distances between positions. The key point is that an accelerometer measures distances relative to a known geodetic control station. Latitude and Longitude for a surveyed position is determined by applying the distances to the control station. The use of ISS requires careful planning and must be conducted by well-trained personnel. The hardware can perform the surveying automatically thereby minimizing the opportunity for human error. ISS can be used to its greatest advantage in the rapid surveying of large numbers (greater than 60) of positions.

C. Survey Requirements.

1. The following survey requirements for the Aids to Navigation Program have been identified:
 - a. High level accuracy fixed aids (fixed aids used as reference landmarks to position other aids to navigation) shall be surveyed to at least third-order, class I accuracy.
 - b. Surveying the position of a new high level of accuracy fixed aid shall be a part of the Aids to Navigation Operation Request (CG-3213). CG-3213s for fixed aids which do not provide for surveying will not be approved.
 - c. Horizontal control shall be improved in areas lacking sufficient reference landmarks for positioning.
 - d. When conducting a survey, all aids in the area not meeting the minimum accuracy level of the survey shall be surveyed.
 - e. When it is feasible and economical, surveys financed by federal funds shall contribute to the NGRS in accordance with the Office of Management and Budget Circular No. A16.
2. Listed below are the avenues most commonly used to satisfy survey requirements:
 - a. Federal Agency Cooperation. The coordination of inter-agency surveying is managed by the Federal Geodetic Control Committee (FGCC). The Coast Guard

C.2.a. (Cont'd) processes its survey requirements via the USCG Survey Request form (see figure 15-4, **Reproduce Locally**). Field units should complete the form to the best of their ability and submit to their respective districts. Districts should ensure completeness and assign requirement numbers (see figure 15-5). The original shall be submitted to Commandant (G-NSR-1) and a copy kept at unit and district levels. By communicating survey requirements to the FGCC, the overlapping needs of federal agencies (e.g., National Ocean Service, National Aeronautics and Space Administration, Defense Mapping Agency) can be satisfied with a single survey. Occasional Coast Guard survey requirements can be added to existing projects with little or no cost. Substantial survey requests, which create significant time and resource demands on a sponsoring agency, will require supplemental funding support. In order that the Coast Guard maximize the opportunities available through cooperative efforts with other agencies, sublist No. 1 of the Fixed Aid Master File must be maintained as detailed in COMDTINST M16500.1B. Personnel in district offices responsible for positioning must be prepared to discuss their surveying needs when contacted by other agencies such as the Corps of Engineers, as well as when contacted by Commandant (G-NSR).

b. Private Contracting. Surveys have been conducted by private contractors to determine positions of newly constructed aids, and aids requiring high accuracy positions not previously surveyed to third-order. The quality of private contract surveying has a history of inconsistency. It is the Coast Guard's desire to place the responsibility of providing high quality work in the private contractor. Survey results must be submitted to the National Geodetic Survey (NGS) for analysis and evaluation. Private survey contracts will be considered complete upon verification from NGS that the results meet the standards of accuracy and procedure specifications defined in FGCC publication "Standards and Specifications for Geodetic Control Networks". The following procedure specifications for private survey contracts must be met when submitting work to NGS:

- (1) The surveyor must be accredited with the appropriate state association of professional surveyors to assure that local licensing requirements are satisfied.

FIGURE 15-5
Explanation of USCG Survey Requirement Report Form

- [1.0] Position Coordinates: Use the best approximate coordinates of the survey requirement available.
- [1.1] DATUM: Indicate reference datum that survey results to be reported in.
- [2.0] Requirement: (TO BE FILLED OUT BY THE DISTRICT) The requirement number shall be a 7 digit number. The first two digits designate the Coast Guard district, a hyphen and the middle three digits identify the number of the request as assigned by the district, a hyphen and the last two digits represent the fiscal year. (i.e.: The 75th requirement submitted by the First District in FY88 will be numbered 01-075-88)
- [5.3] Geographic Area: Use the geographic headings listed in the Light List to identify geographic areas when possible.
- [6.0] Name: The names of aids to navigation should be consistent with the Light List. Landmark names should be sufficiently descriptive in order to identify the landmark adequately. Landmark station names normally consist of several words, preferably reflecting the locality, property ownership, type of landmark, as appropriate. Limit the length of the landmark name to 70 characters and refer to Landmark classification, definitions, and rules, Table 5-1 in the National Ocean Service Hydrographic Manual, for an explanation of landmark types.
- [7.0] Point to Intersect: Specify what part of the object will be used to target.
- [8.0] Ownership: Every effort should be made to identify the ownership of the survey requirement.
- [9.4] Daymark: Use the USCG daymark designations listed in the introduction of the Light List.
- [10.0] Landmark Description: Definitions of landmark classifications are listed in Table 5-1 of the NOS Hydrographic Manual.
- [11.0] Relative position to a surveyed Aid to Navigation: A prominent, charted object may be substituted in areas where surveyed aids to navigation do not exist.
- [11.2] Measure bearing (T) and range (yds) from the chart.
- [12.0] The field identification of a survey requirement can be greatly with the use of an annotated photograph, sketch, or copied portion of the affected chart.

- C. 2. b. (2) All field data, notes, sketches, descriptions, abstracts, adjusted positions (if determined), and a project report must be submitted to NGS for review and evaluation.
- (3) Survey projects requiring new geodetic stations to extend horizontal control should be cleared with NGS in the form of a reconnaissance report. Refer to the U.S. Coast and Geodetic Survey Special Publication No. 247.
- (4) All surveys must be connected to NGRS stations having accuracy levels equal to or greater than that of the survey (with the exception of third-order open traverse surveys).
- (5) The survey data must be submitted in the format described in the FGCC publication, "Input Formats and Specifications of the National Geodetic Survey Data Base," known as the "Blue Book."

3. In-House Surveying. A limited amount of Coast Guard in-house surveying has been undertaken to satisfy survey requirements. Professional training is available to develop survey skills, but it should be emphasized that surveying is a technical field and proper training requires an extensive commitment. Classroom training must be supplemented with field experience. The hands-on, practical experience can be acquired through one or more of the following means:

- a. Training courses which include a field workshop.
- b. Field demonstrations conducted by equipment manufacturers.
- c. Participating in a geodetic survey party.

D. Surveying Goals. To obtain surveyed positions for all Coast Guard fixed aids appears to be a monumental task. The following are goals for satisfying the backlog of Coast Guard survey requirements:

- 1. Priority 1 - All range structures.
- 2. Priority 2 - All new aids requiring "high level" accuracy, whether accomplished in-house or by private contract.
- 3. Priority 3 - Needed reference landmarks.
- 4. Priority 4 - All "low level" fixed aids.

CHAPTER 16. BUOY MANAGEMENT PROGRAM

A. Introduction:

1. This chapter establishes guidelines for ordering, funding, and accounting for third class and larger steel buoys at both the District and Headquarters levels. Third class and larger steel buoys make up over 20% Of the Coast Guard's total aids to navigation. The large number of buoys, and the cost of operating and maintaining them, make it important to administer this portion of the Short Range Aids to Navigation program in the most effective manner possible.
2. Management of smaller steel and all plastic buoys is the responsibility of individual districts.
3. With the exception of the ordering procedures for new buoys outlined in Section 16-G, the Second District is exempt from the requirements of this Chapter.
4. Interservice or interagency requests for buoys should be referred to Commandant (G-NSR) for action.

B. Purpose of the Buoy Management Program.

1. The Buoy Management Program is the mechanism for funding, procurement and accounting for Coast Guard buoys. The goals of the program are:
 - a. Provide a basis for determining annual buoy demand by monitoring buoy inventories and increases in authorized stations.
 - b. Reduce the delivery time and cost for new buoys by improving funding procedures and consolidating each district's buoy requirements into a single order.
 - c. Monitor production and, if necessary, schedule the delivery of new buoys to meet priority demands.
 - d. Determine an appropriate spares allowance for each district based on servicing requirements and annual loss rates.
 - e. Encourage the most efficient use of buoys by allowing districts to retain those in excess while limiting orders for new buoys to actual shortages.
 - f. Develop a stock of new buoys which will provide a source of ready for issue buoys to meet extraordinary demands.

C. Definitions.

1. On Station Allowance (OSA). The sum of authorized stations comprises the OSA. A station is considered authorized if it is listed in the Light List or has been authorized by an approved Aids to Navigation Operation Request (CG-3213) as a permanent aid to navigation. Whether or not the authorized buoy class is occupying the station has no bearing on the on station allowance. Also included in the on station allowance are authorized annual winter marker buoys (e.g. "Replaced by can from 15 Oct to 1 May," etc.)
2. Allowance List Spares-Authorized (ALS-Authorized). This is the total number of authorized spare buoys by class and is sometimes referred to as the rotational spare allowance. The allowance list spares-authorized does not reflect the physical inventory of buoys available for use as rotational spares. Buoys for routine reliefs of authorized buoy stations, replacement of lost or surveyed buoys, all temporary buoys such as wreck marking, dredging, survey markers, and unscheduled winter markers (i.e., "Replaced by can when endangered by ice," etc.) come out of ALS-authorized. The ALS-authorized for each class of buoy is set by Commandant (G-NSR).
3. Allowance List Spares-On Hand (ALS-On Hand). This is the actual number of buoys on hand to fill the ALS-authorized and is sometimes referred to as rotational spares. Buoys on order but not yet received are considered to be on hand for accounting purposes.
4. Buoy Allowance Excess. The number of buoys by which the allowance list spares-on hand exceeds the allowance list spares-authorized.
5. New Buoy Body Requirements. The annual service-wide consolidated OE and AC&I buoy requirements for the coming fiscal year. Each district will be advised in writing of the number and types of buoys ordered.
6. Standard Buoy. Buoys approved for manufacture are designated as standard. Buoys of identical operational characteristic to those currently authorized for manufacture are also considered standard, though their design may differ slightly or they may have been converted from non-standard types. Standard buoys are also known as family type buoys.

- C. 7. Non-Standard Buoys - Buoys which are no longer in manufacture and which are not operationally equivalent to standard buoys. Volume 3 (Technical) of this Manual classifies each non-standard buoy as an equivalent or substitute for a standard buoy (e.g., an 8 x 23 LB is a specific buoy designation of a non-standard buoy.)
- 8. Buoy Class - One of the acceptable buoy descriptions found in the Aids to Navigation Manual-Technical. This provides an accurate and specific description of any buoy including certain operational features.
- 9. Buoy Type - Refers to particular year design of each class of buoy. Common buoy types still found in service include 1928, 1942, 1952, 1962, and 1965.
- 10. Ships Inventory Control Point (SICP) - An activity assigned primary responsibility for material management of a group of items. The SICP referred to in buoy management is located at the Coast Guard Yard, Curtis Bay, Maryland.

D. Accounting for Buoys

- 1. General. The Buoy Management Program contains a computerized accounting system administered by Commandant (G-ECV). A physical inventory of all buoys taken in each district by specific buoy class within each family is used as the data base upon which the accounting system is built. Rather than continuously account for each buoy body within each district, only additions or deletions are recorded and the data base is adjusted accordingly.
- 2. Inventories. As errors appear in the Buoy Management Program, it may become necessary to conduct district buoy inventories to purify the data base.
- 3. Gains and Losses. As previously noted, it is not intended that the Buoy Management Program continuously account for each buoy body within each district, but rather only monitor the movement of buoys into or out of a district. Buoys may enter or leave a district in one of the following manners:
 - a. New Buoy Shipments - New buoys are shipped to each district by the SICP or from commercial sources. Buoys will be shipped from commercial sources as part of a contract. The SICP will provide Commandant (G-ECV) with a copy of the Material Release Confirmation (MRC) for buoys shipped by SICP.

- D. 3. b. Lost from Station. Buoys lost while occupying a station. District commanders will be aware of these losses through message traffic or reports they require of their units. Consolidated reports shall be assembled for transmittal to Commandant (G-ECV).
- c. Damaged beyond repair/obsolete buoys. The Commandant no longer requires boards of survey on buoys declared unrepairable or obsolete. The district commander may require whatever reports deemed necessary to manage the buoy inventory. Consolidated reports shall be assembled for transmittal to the Commandant (G-ECV).
- d. Shipments Interdistrict. A less frequent source of buoys into or out of a district will be from inter-district transfers. Because all inter-district transfers of buoys will have to be approved by Commandant (G-ECV), this information will be readily available. In view of the high cost of transportation of buoys by commercial carriers, the number of inter-district transfers will be held to a minimum.
- 4. Recovered buoys. In those cases where a buoy is recovered after having been reported as lost from station, Commandant (G-ECV) should be advised so that the number of allowance list spares-on hand may be corrected.
- 5. Excess buoys.
 - a. Under normal circumstances an excess of buoys within a class could occur when one or more buoys is discontinued or an upgrading/downgrading is carried out and the old buoy is withdrawn from station. In this situation the accounting system will show allowance list spares-on hand in excess of the allowance list spares-authorized (buoy allowance excess), and the district will not be allowed to order new buoys in that class until the allowance list spares-on hand falls below the number of allowance list spares-authorized.
 - b. In unusual circumstances, Commandant (G-ECV) may direct the interdistrict transfer of buoys. Examples are:
 - (1) A large excess of buoys exists in one district and another district has an urgent requirement.
 - (2) A district has buoys for which it has no on-station allowance.

D. 6. System Stock. As funds permit, new buoys will be stocked by the SICP to meet unplanned requirements such as severe winter losses, alleviating long delivery times in critical situations. Where appropriate, buoys to meet planned requirements may be issued from system stock. Issues from this inventory will require approval by Commandant (G-ECV).

E. District Buoy Allowances.

1. Determining an adequate yet economical allowance list for spare buoys is difficult because of the many factors which apply. The factors of major importance are:

- a. Relief cycle
- b. Overhaul time
- c. Geographic distribution of aids, tenders, and support units
- d. Temporary marking requirements
- e. Seasonal and environmental conditions
- f. Loss rate

2. Because the relative weights of such factors vary widely between districts, the Commandant cannot advance a formula that would properly fit the situation in all districts. District staffs have available the background information and experience to prepare a buoy allowance suitable for their district.

| 3. Annually on 1 July, district commanders shall submit to
| Commandant (G-NSR) a letter report Buoy Allowance Report
| (RCS-G-NSR-15405) stating that the allowance list spares
| as contained in the District Buoy Body Transaction Report
| (DBBTR) are sufficient, or if not, a recommendation as to
| the number of spares required. The last Form CG-3213
| reflected in the recommended allowance should be noted.
A 15% allowance is considered the maximum for normal
spare buoy body requirements. A smaller allowance should
be recommended when conditions permit. Recommendations
for an allowance greater than 15% must be quantitatively
justified.

4. Figure 16-1 contains standard buoy types for allowance list purposes.

F. Buoy Status Reports.

1. There are available from the Buoy Management Program several reports to aid the Program Manager, Support Manager and district staffs in efficiently administering the buoy portion of the Short Range Aids to Navigation program. A description of each report and its intended purpose follows:

a. District Buoy Body Transaction Report (DBBTR).

(1) This report is updated and mailed to each district (oan) quarterly on 31 August, 30 November, 28 February, and 31 May. It provides a report on all approved changes to the on station allowance, allowance list spares-authorized, as well as the level of allowance list spares-on hand and the status of buoys on order. Only those AC&I projects which have been funded will be entered on the DBBTR. An initial report issued on 1 June of each year will contain only a Status Report of each buoy class as of that date. (See Figure 16-2.) It should be utilized to determine district buoy allowance shortages which are the basis for determining buoy requirements for the coming year. Subsequent reports will contain all additions and deletions to this initial data base, and each one will contain all information contained in the previous report (See Figure 16-3). Previous reports may be disposed of on receipt of the printout for the following quarter with the exception of the year-end report on 31 May which contains a printout of the entire year's activity and should be retained for future reference.

b. District Buoy Capitalization Report (DBCR).

(1) This report is updated and mailed to each district (oan) annually on 1 June. It provides the year-end replacement cost capitalization and the total buoy allowance shortage (corrected for buoys on order and not shipped) by class. This report will have the latest new buoy cost entered by Headquarters in determining the district capitalization (See Figure 16-4). The information contained in each report supersedes that contained in previous reports. The previous District Buoy Capitalization Report may be disposed of upon receipt of each subsequent report.

F. 1. c. Servicewide Buoy Status Report (SBSR). This report is exclusively for Headquarters use. It is an annual summary of the servicewide distribution of buoys by class.

G. Ordering Buoys.

1. Ordering of operating expense (OE) buoys.

- a. The district submission of their Operating Guide Summary of Budget Estimates (CG-4144) and their Buoy and Chain Requirements Report (RCS-G-NSR-15430) are the actual vehicles by which a district's annual OE buoy requirements are transmitted to Commandant (G-NSR). It is imperative that the Buoy and Chain Requirements Report be specific as to the number and type of buoys and chain required and not contain just a general requirement such as "Miscellaneous buoys - \$64K." Within the funds available in OG-30 for each district, all buoys listed above the cutoff on the Requirements Report will be consolidated into the servicewide order by Commandant (G-NSR).
- b. The Buoy and Chain Requirements Report should contain a listing of all buoys the district is short of its allowance list spares-authorized, less any buoys on order, ranked in overall district priority. This listing shall also include 4th and 6th class steel and all plastic buoys in quantities determined by the district. It is not to be inferred that all buoy allowance shortages will necessarily be funded during the year. Only those buoys which fall within funding capability will actually be ordered.
- c. A consolidated order of OE buoys will be made once a year by Commandant (G-ECV). Within the time frame specified in Section K of this chapter, Commandant (G-ECV) will forward computer printouts of the District Buoy Transaction Report (DBBTR). This report is the working tool for districts to determine their existing buoy allowance shortages as well as any trend toward increasing shortages in a particular class of buoy. From this report, districts can determine their new buoy requirements for the coming fiscal year.
- d. Districts shall not order any buoys in excess of the buoy allowance shortage. If it becomes apparent that a district's ALS-authorized is not sufficient to meet annual demands, a request for an increase should be submitted to Commandant (G-NSR).

G. 1. e. Should extraordinary requirements for additional OE buoys develop during the year within a district (severe ice damage, etc.), Commandant (G-NSR) should be notified in writing of the specific buoy classes and quantities required, and of the availability of district OG-30 funds to cover the cost of the new buoys. Approval will be on a case-by-case basis only. If the request is approved, Commandant (G-NSR) will forward the requirement to the contractor or the Coast Guard Yard and direct the district to submit unfunded MILSTRIP's if required.

2. Ordering of AC&I buoys.

- a. The ordering of all AC&I buoys will be carried out by Commandant (G-NSR). Within the time frame specified for the ordering of OE buoys, Commandant (G-NSR) will determine the initial requirements for AC&I buoys and will include them in the annual servicewide consolidated buoy requirements for the coming fiscal year. The Commandant (G-NSR) will advise each district of its initial AC&I buoy order and the projects for which the buoys are intended when the amount of the AC&I appropriation is known.
- b. Commandant (G-NSR) will attempt to fill emergency AC&I buoy requirements from program spares.

H. MILSTRIP Requisitions. Unfunded MILSTRIP requisitions will be required for buoys shipped from the SICP. Buoys shipped from commercial sources will be shipped to the destinations provided by the district in the Buoy and Chain Requirements Report.

I. Funding of Buoys.

1. Funding of Operating Expense (OE) buoys.

- a. The funding of all OE steel buoys will be carried out by Commandant (G-NSR) using OG-30 funds. Funds for plastic buoys will be provided to the districts.
- b. Funds for unplanned additional buoys usually will be obtained through intra-district reprogramming. This is consistent with underlying budget principles and authority delegated to district commanders to adjust existing district funds resources as necessary to meet unforeseen circumstances and changes in priorities. In such situations, Commandant (G-NSR) shall be notified and a Financial Transfer Authorization shall be processed to withdraw OG-30 funds from the district.

- I. 1. b. (cont) An alternative to reprogramming is to advance funds from the district's approved OG-30 target of future quarters in the same fiscal year. In those unusual cases where the total cost of additional buoys clearly exceeds present and future quarter district financial resources (e.g. extraordinary storm damage), supplementary funds should be requested from Commandant (G-CBU). Based on an evaluation of need, relative to other budget priorities, an attempt will be made to provide supplementary funds from Headquarters.
 2. Funding of AC&I buoys. The funding of all AC&I buoys will be carried out by Commandant (G-NSR) using Waterways Funds. Within the time frame specified for the funding of OE buoys, Commandant (G-NSR) will forward, with the request to Commandant (G-ECV) for the procurement of AC&I buoys, a request that Waterways Funds be released for inclusion in the consolidated servicewide purchase of buoys.
- J. Transportation charges.
1. Transportation for buoys manufactured by the Coast Guard Yard will be chargeable against SICP managed funds. Commandant (G-ECV) will provide OE and AC&I funds for this purpose.
 2. Transportation for buoys manufactured by commercial sources may be F.O.B. Point of Origin, with Freight Allowed to First Destination or F.O.B. Destination depending upon the contract requirements.
- K. Management Schedule.
1. For purposes of buoy management and buoy procurement, the cycle begins 1 June and ends 18 months later with the delivery of all buoys ordered on the annual servicewide consolidated buoy purchase. The funding of all buoys, both OE and AC&I coincides with the normal fiscal year.
 2. The following is a schedule of reports and deadlines with regard to buoy management and buoy procurement. An asterisk (*) denotes an approximate date.
 - a. 1 June - Commandant (G-ECV) forwards a copy of the District Buoy Capitalization Report, (DBCR), and District Buoy Body Transaction Report - Summary (DBBTR) to each district (oan) to assist in the determination of the coming year's buoy requirements. Commandant (G-NSR) provides Commandant (G-FAC) with servicewide capitalization of buoys by district using current cost data and latest data on buoy population.

- K. 2. b. 20 June - Districts submit Operating Guide Summary of Budget Estimates to Commandant (G-CBU).
- c. 27 June - Commandant (G-NSR) reviews District Operating Guide Summary of Budget Estimates (CG-4144).
- d. 15 July - Commandant (G-NSR) determines tentative buoy requirements for the coming fiscal year. Districts submit Buoy and Chain Requirements Report to Commandant (G-NSR).
- e. 25 August - Commandant (G-NSR), using the Buoy and Chain Requirements Report and Operating Guide Summary of Budget Estimates, determines OG-30 cut-off, tabulates district buoy requirements which fall above the cut-off, withholds funds from each district equivalent to the cost of buoys above the cut-off, and distributes remaining OG-30 funds to districts, and Headquarters units.
- f. 31 August - Commandant (G-ECV) forwards the District Buoy Body Transaction Report to each district (can).
- g. 30 September - Last date to revise Buoy and chain Requirements Report as to type/color/destination.
- h. 30 November - Commandant (G-ECV) forwards the District Buoy Body Transaction Report to each district (oan).
- i. *15 December - Solicitation mailed for those buoys to be procured from commercial sources.
- j. 28 February - Commandant (G-ECV) forwards the District Buoy Body Transaction Report to each district (oan).
- k. *1 April - Contract awarded for those buoys to be procured from commercial sources.
- l. 31 May - Commandant (G-ECV) forwards the District Buoy Transaction Report to each district (can).
- m. 1 January - Final delivery of all buoys ordered in the preceding fiscal year.

STANDARD BUOY TYPES FOR ALLOWANCE LIST PURPOSES

9x35ELB 9x35LR, 9x35LWR
9x32LR 9x32LBR 9x32LGR 9x32LWR
9x20BR 9x20GR
8x26LR 8x26LBR 8x26LGR 8x26LWR 8x26WR 8x26BR 8x26GR
7x17LR 7x17LBR 7x17BR 7x20LI
6x20LR 6x20LBR 5x11LR 3 1/2x8LR
1CR 1NR 2CR 2NR 3CR 3NR 3CI 3NI 5CI 5NI
2CFR 2NFR 3CFR 3NFR
4CFR 4NFR 5CFR 5NFR 6CFR 6NFR
4CR 4NR 5CPR 5NPR
6CR 6NR 6CPR 6NPR 6CT 6NT FNPR FCPR

NOTES:

1. Lighted buoys equipped with electric sound signals are included in the LR allowances.
2. All lighted ice buoys, regardless of size, are listed in the 7X20LI standard classification.
3. Unlighted plastic buoys with a daymark width of less than 20" are considered sixth class.
4. Mooring buoys (M) are buoys that are specifically designed or modified for this use. For example, a 3NR used as a mooring buoy is listed in the 3NR allowance unless it has been structurally modified.
5. Discrepancy buoys are lightweight buoys for temporary emergency use. They are utilized only until they can be replaced by a structure or standard buoy. Therefore, the on station allowance is always zero.

FIGURE 16-1

DISTRICT
 BUOY BODY TRANSACTION REPORT
 **** NEW DATA BASE -- INCORPORATING ALL PREVIOUS TRANSACTIONS ****

MANUFACTURED BUOY	BUOY CLASS	ON-STATION ALLOW	ALS AUTH	ALS ON-HAND	ON-ORDER	SHORTAGE -SHORT +EXCESS	REMARKS	DATE
9X39LR	9X39LR	0	0	0	5	5	DATA BASE	6-JUN-85
8X26LR	8X26LR	136	31	36	0	5	DATA BASE	6-JUN-85
8X26LR	8X26LBR	41	0	2	0	2	DATA BASE	6-JUN-85
8X26LR	8X26LOR	25	0	0	0	0	DATA BASE	6-JUN-85
8X26LR		202	31	38	0	7		
8X26LMR	8X26LMR	20	6	4	2	0	DATA BASE	6-JUN-85
7X17LR	7X17LR	25	10	12	1	3	DATA BASE	6-JUN-85
6X20LR	6X20LR	103	19	14	0	-5	DATA BASE	6-JUN-85
6X20LR	6X20LBR	7	0	0	0	0	DATA BASE	6-JUN-85
6X20LR		110	19	14	0	-5		
5X11LR	5X11LR	34	16	22	0	6	DATA BASE	6-JUN-85
3-1/2XBRL	3-1/2XBRL	9	2	2	0	0	DATA BASE	6-JUN-85
1CR	1CR	0	0	5	0	5	DATA BASE	6-JUN-85
1NR	1NR	1	0	2	0	2	DATA BASE	6-JUN-85
2CR	2CR	69	38	59	2	23	DATA BASE	6-JUN-85
2NR	2NR	64	50	30	24	4	DATA BASE	6-JUN-85
3CR	3CR	53	49	30	21	2	DATA BASE	6-JUN-85
3NR	3NR	59	49	33	14	-2	DATA BASE	6-JUN-85
SPHERE	SPHERE	7	1	1	0	0	DATA BASE	6-JUN-85
		653	271	252	69	50		

FIGURE 16-2

FIGURE 16-3

9-APR-5

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DISTRICT BUOY BODY TRANSACTION REPORT								
COVERS 4TH QTR FY84 AND 1ST AND 2ND QTRS FY85 -- CALL EOE-48 WITH PROBLEMS								
MANUFACTURED BUOY	BUOY CLASS	DN-STA ALLOW	ALS AUTH	ALS DN-HAND	DN-ORDER	SHORTAGE --SHORT +*EXCESS	REMARKS	DATE
9X35LR	9X35LR	0	0	0	2	2	DATA BASE	1-JUL-84
9X35LR	9X32LR	1	2	2	0	0	DATA BASE	1-JUL-84
	9X32LR	0	0	-1	0	-1	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	9X32LR	1	2	1	0	-1		
9X35LR	9X32LBR	3	2	-2	0	-4	DATA BASE	1-JUL-84
9X35LR	9X32LWR	18	4	15	0	11	DATA BASE	1-JUL-84
	9X32LWR	0	0	-1	0	-1	SURVEY PER DAN LTR 7 SEP 84	17-SEP-84
	9X32LWR	0	0	-1	0	-1	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	9X32LWR	18	4	13	0	9		
9X35LR		22	8	12	2	6		
8X26LR	8X26LR	42	16	17	4	3	DATA BASE	1-JUL-84
	8X26LR	0	0	1	-1	0	DELIVERY AC&I Z31380 2334 9084	16-JUL-84
	8X26LR	0	0	-2	0	-2	SURVEY PER DAN LTR 7 SEP 84	17-SEP-84
	8X26LR	0	0	0	1	1	FY85 00-46 ON ORDER	24-SEP-84
	8X26LR	0	0	0	1	1	FY85 AC&I ON ORDER	24-SEP-84
	8X26LR	2	0	-2	0	-2	AC&I NEW 13-83-47	18-OCT-84
	8X26LR	1	0	-1	0	-1	AC&I NEW 13-84-21	18-OCT-84
	8X26LR	0	0	3	-3	0	DELIVERY Z31380 3364 9088	12-NOV-84
	8X26LR	0	0	-1	0	-1	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	8X26LR	0	0	1	-1	0	DELIVERY ZK1320 4333 9010	19-FEB-85
	8X26LR	45	16	16	1	1		
8X26LR	8X26LBR	44	0	0	0	0	DATA BASE	1-JUL-84
	8X26LBR	0	0	-3	0	-3	SURVEY PER DAN LTR 7 SEP 84	17-SEP-84
	8X26LBR	1	0	0	0	0	UPGRADE PER DAN LTR 7 SEP 84	17-SEP-84
	8X26LBR	0	0	-2	0	-2	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	8X26LBR	0	0	-2	0	-2	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	8X26LBR	45	0	-7	0	-7		
8X26LR	8X26BR	5	2	2	0	0	DATA BASE	1-JUL-84
8X26LR	8X26LGR	16	0	2	0	2	DATA BASE	1-JUL-84
	8X26LGR	0	0	-2	0	-2	LOSS PER DAN LTR 6 FEB 85	13-FEB-85
	8X26LGR	16	0	0	0	0		
8X26LR		111	18	11	1	-6		

FIGURE 16-4

11-JUN-5

PAGE 1

DISTRICT
BOUY BODY CAPITALIZATION REPORT

BOUY CLASS	ON-STA ALLOW	ALS ON-HAND	TOTAL-INVENTORY (ON-STA ALLOW+ALS ON-HAND)	UNIT COST	CAPITALIZATION
9X35LR	0 +	0 =	0 X	17500 =	0
9X32LR	4 +	5 =	9 X	17500 =	157500
9X32LBR	0 +	4 =	4 X	19846 =	79384
9X32LGR	0 +	4 =	4 X	20380 =	81520
9X32LWR	11 +	12 =	23 X	21749 =	500227
8X26LR	56 +	16 =	72 X	13500 =	972000
8X26LBR	104 +	1 =	105 X	15846 =	1663830
8X26BR	105 +	0 =	105 X	15846 =	1663830
8X26LGR	44 +	1 =	45 X	16280 =	732600
8X26GR	37 +	6 =	43 X	16280 =	700040
8X26LWR	40 +	7 =	47 X	17749 =	834203
8X26WR	16 +	0 =	16 X	17749 =	283984
7X17LR	78 +	16 =	94 X	11400 =	1071600
6X20LR	15 +	7 =	22 X	9900 =	217800
6X20LBR	36 +	5 =	41 X	11911 =	488351
6X16LI	0 +	49 =	49 X	7300 =	357700
5X11LR	50 +	12 =	62 X	7300 =	452600
3-1/2XBLR	30 +	3 =	33 X	5900 =	194700
1CR	30 +	4 =	34 X	7000 =	238000
1NR	30 +	-1 =	29 X	7000 =	203000
2CR	71 +	15 =	86 X	3800 =	326800
2NR	72 +	13 =	85 X	3800 =	323000
3CR	541 +	99 =	640 X	2000 =	1280000
3NR	542 +	114 =	656 X	2000 =	1312000
3CI	1 +	59 =	60 X	1900 =	114000
3NI	0 +	60 =	60 X	1900 =	114000
SPHERE	0 +	15 =	15 X	250 =	3750
					14,366,419

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ENCL (5)

A BRIEF HISTORY OF FEDERAL MARINE SHORT RANGE
AIDS TO NAVIGATION SYSTEMS

- A. The history of marine aids to navigation in the United States can be traced to our first permanent lighthouse constructed off Boston Harbor on Little Brewster Island. This light commenced watching on September 14, 1716. Fixed aids ashore apparently predated floating aids by several decades since the earliest references to buoyage deal with wooden spars or logs banded together with iron straps for use in the Delaware River near Philadelphia in 1767.
- B. The ninth law enacted by the first session of Congress was the Act of August 7, 1789, providing for the erection and maintenance of lighthouses. At this time 12 colonial light structures and seven spar buoys were transferred from state to federal control. This small number of aids has increased until the Coast Guard is responsible for over 46,000 aids of many types.
- C. Federal maintenance of aids to navigation was first carried on under the Secretary of the Treasury or an official immediately responsible to the Secretary. In 1845 the Lighthouse Establishment, which had developed under the fifth auditor of the Treasury, was transferred to the Revenue Marine Bureau, an organization which later became the Coast Guard. Collectors of customs in the various U.S. ports served as local superintendents of lighthouses through this period.
- D. A lighthouse board was created in 1852, composed of officers of the Army, Navy and civilian scientists. The influence of this board on the maturing lighthouse establishment was marked. During this time the marking of channels and operation of lights acquired scientific preciseness and engineering sophistication. Classical lenses were introduced, the Lateral System of Buoyage was adopted, and advanced methods of lighthouse construction such as the screw pile and caisson were introduced.
- E. Metal buoys, first built as riveted iron barrels to replace wooden stave construction were placed in use in 1845. Can, nun and bell buoys followed in 1855. The first mention of whistle buoys was made in 1876. In 1881 and 1888 respectively, Pintsch gas under a mantle and electric lights powered by cables from generators ashore, were used in the first lighted buoys. At the same time kerosene was being replaced as an illuminant for shore aids by acetylene and electric lamps.

A BRIEF HISTORY OF FEDERAL MARINE SHORT RANGE
AIDS TO NAVIGATION SYSTEMS

- F. In 1903 the Lighthouse Establishment was transferred from the Treasury Department to the Department of Commerce and Labor, with the Lighthouse Board being superceded by the Bureau of Lighthouses in 1910. The Bureau of Lighthouses was consolidated with the Coast Guard under the Treasury Department in 1939.
- G. During this period of administrative reassignments, acetylene replaced the impractical, cable powered electric lamps on lighted buoys. The demise of acetylene as an illuminant was in turn foreshadowed by the introduction of battery powered buoys in 1935. In 1950 the decision was made to electrify all lighted buoys using secondary (lead-acid) batteries and by the mid 1960's acetylene had been phased out of service along with many types of buoys fitted especially for acetylene cylinders. In the late 1960's conversion from secondary to primary batteries began. The harnessing of solar energy during the 1970's promised a new source of power for selected aids to navigation and the first solar power conversion of an aid to navigation using standard equipment took place in 1983.
- H. The age of electronics has had an impact in many areas of Coast Guard aids to navigation operations. For instance, radar reflectors, transistorized flashers and photo-cell daylight controls are standard equipment on lighted buoys. Additionally, the automation and remote monitoring of lighthouses is releasing many Coast Guardsmen from confining, rigorous and lonely tours of lighthouse duty.
- I. Not only has electronics allowed reduction of the number of manned lighthouses, but these techniques have also provided a basis for the elimination of the lightships off the coasts of the United States. This elimination came about specifically through the development of two major innovations: the offshore tower and the large navigational buoy (LNB). The first offshore tower was established in Buzzards Bay in the spring of 1961. A prototype LNB was established as a replacement for Scotland Lightship in 1967. The last lightship, Nantucket II, was replaced by a LNB in 1983.
- J. More information pertaining to aids to navigation history and general operations may be found in CG-232, Historically Famous Lighthouses, and CG-193, Marine Aids to Navigation.

STANDARD CHARACTERISTICS of LIGHTS

Light Rhythm	Light List	Illustration
Fixed	F W	
Occulting	Oc W 6 ^s	
Group Occulting	Oc (2) W 20 ^s	
Composite Group Occulting	Oc (2+1) W 30 ^s	
Isophase	Iso W 6 ^s	
Flashing	Fl W 2.5 ^s	
Composite Group Flashing	Fl (2+1) R 6 ^s	
Group Flashing	Fl (2) R 10 ^s	
Quick	Q W	
Morse Code	Mo (A) W	
Fixed and Flashing	FFI W 10 ^s	
Alternating	Al W R 10 ^s	
Non-standard Characteristics	Fl (4) W 20 ^s 1^s fl 1.5^s ec 1^s fl 1.5^s ec 1^s fl 1.5^s ec 1^s fl 11.5^s ec	

Provide the light color, characteristic, or the Morse Code symbol as each situation dictates. The light characteristic is in bold print, with the exception of the period (time).

For non-standard characteristics, or where otherwise required for clarity or deemed necessary break down the lighted and eclipsed intervals. Ensure the sum of individual flashes and eclipses equals the total duration of the characteristic.

For sector and directional lights, list the color sectors by degrees of the compass in the remarks column of the Light List. Degrees are always measured from the observer to the light in a clockwise direction.

COAST GUARD AUXILIARY PRIVATE AID TO NAVIGATION VERIFICATION
PROGRAM

1. Purpose. This enclosure should be used as guidance for the Auxiliary to conduct private aids to navigation verifications.
2. Discussion. Private aids to navigation fall into three classes, I, II, or III. Class I private aids are required by law. Due to the environment where class I aids are located these will normally be inspected by Coast Guard units. Class II and III aids are established for the convenience of the owner. Class II aids are found in general navigation waters. Class III aids are found in waters not normally used for general navigation. The Auxiliary may be tasked with verifying the placement and condition of the class II and class III private aids to navigation.
3. Administration.
 - a. Nationally the program will be coordinated by Chief, Auxiliary, Boating, and Consumer Affairs Division (G-NAB), Chief, Short Range Aids to Navigation Division (G-NSR), and the Auxiliary Aids to Navigation Division (DVC-ON).
 - b. At the district level the program will be coordinated with the aids to navigation and waterways management branch (oan), director of Auxiliary (DIRAUX), and Auxiliary District Staff Officer-Aids to Navigation (DSO-AN).
 - (1) The district commander is responsible for:
 - (a) Ensuring that Auxiliarists receive training and maintain qualifications deemed necessary by the district on a continuing basis to carry out their mission.
 - (b) Ensuring that Auxiliarists qualified for duty assignment within this program carry out operational activities under Coast Guard orders (Form CG-5132).
 - (c) Ensuring Auxiliarists comply with the guidelines outlined in the Aids to Navigation Manual - Administration (COMDTINST M16500.7).
 - (e) Establishing an aid to navigation liaison officer for coordinating the Auxiliary efforts.
 - (f) Establishing a work space, if required, in the district (oan) office for Auxiliarists to perform administrative functions associated with the private aid verification program.

Encl. (4) to COMDTINST M1650.7

- (g) Ensuring the required charts are provided to the Auxiliary Flotillas participating in this program.
- (2) The Auxiliary District Staff Officer-Aids to Navigation (DSO-AN) will be expected to coordinate the private aids to navigation verification program with district commander (oan).
- (3) Assistant Auxiliary District Staff Officer-Aids to Navigation (ADSO-AN) will be expected to:
 - (a) Ensure training is available to Auxiliarists unable to attend the district commander (oan) training.
 - (b) Work closely with the Divisions and Flotillas in their areas and maintain a close relationship with the Coast Guard units in their areas.
- (4) The Auxiliary Division Staff Officer-Aids to Navigation (SO-AN) will be expected to coordinate missions for private aids to navigation verifications and for Coast Guard aids to navigation teams transportation missions.

c. Local unit responsibility:

- (1) The Coast Guard unit responsible for the inspection of the privately owned aid shall provide the Auxiliary Division with copies of all past inspections of the privately owned aids as well as any correspondence associated with the aid.
- (2) The Auxiliary Flotilla that will verify the aid shall:
 - (a) Have members attend training when scheduled.
 - (b) Carry out verifications as scheduled by the SO-AN.
 - (c) Maintain a record for each of the aids it is scheduled to verify. This is discussed in detail in paragraph 4.

4. Verification Procedures.

a. On scene:

DO NOT CLIMB ABOARD THE AID AT ANYTIME

- (1) Check that aid is authorized.
- (2) Check it visually.
- (3) Check condition.
- (4) Check that signals match signals on permit.
- (5) If possible, verify that the aid is on station.
- (6) Complete and file verification report listed in enclosure (2).

b. If aid is discrepant:

- (1) Complete aid verification form and mail it to the district commander (oan).
- (2) Do not notify the owner. The district commander (oan) will notify the owner for discrepant aids.

5. Required Reports and Records.

a. The Auxiliary Flotilla Staff Officer-Aids to Navigation (FSO-AN) is expected to maintain copies of the following records for each private aid.

- (1) Application to maintain a private aid to navigation.
- (2) Completed verification reports for the last five visits.
- (3) Discrepancy reports for the aid.

b. The primary observer shall complete the form with all applicable information and submit it and all copies to the Auxiliary DSO-AN.

6. Training.

a. The district commander (oan) is responsible for conducting yearly training and recertification for the Auxiliarist. Training listed below shall be covered:

- (1) Instruction for completing the private aid application form.
- (2) Instruction for completing the verification reports.

Encl. (4) to COMDTINST M16500.7

6. a. (3) Instruction on use of charts and range finding instruments.
- (4) Instruction on retro-reflective materials and various symbols on a buoy, light and daybeacon.
- (5) Instruction for timing a light.
- (6) Any additional published training and qualification requirements available from the Auxiliary National Supply Center.

Aids to Navigation Report
INSTRUCTIONS

1. This form is used to report discrepancies to federal aids to navigation or when reporting verification and/or discrepancies to private aids to navigation. NOAA-National Ocean Service will award credits and report the activity into AUXMIS.
2. Title line, Check appropriate box.
3. Section I
MEMBER INFORMATION
Member Number - Enter member number as it appears in AUXMIS.
Last Name/Address - Enter name and address as it appears in AUXMIS.
List additional U.S. Coast Guard Auxiliary members and percentage of credit to be awarded to each observer on the back of copy 1. To obtain acknowledgement from NOAA-NOG enter your complete name and address on the back of copy 5.
4. Section II
REPORTING INFORMATION
Coast Guard Unit- If the aid is discrepant, enter Coast Guard unit notified. Date Observed/Date Reported - List the date (in numbers) the aid was observed and reported. Example, Observed 31 AUG 87 would be 093187. Check appropriate method of reporting discrepancy.
5. Section III
AID IDENTIFICATION
All information below can be found in the Light List or Private Aid Application.
Ownership -
Position -
Type of aid -
Structure -
Light Color -
Sound Signal -
AID DISCREPANCY INFORMATION
Mark with an "X" where appropriate
Common Discrepancies -
Lighted Aid -
Buoy-
Comments - List all comments required and any other information that you think is appropriate.
Signature of Observer - Sign and date the form. Promptly mail the form to staff listed.
6. Submission of reports
The primary observer shall complete the form with all applicable information and submit it and all copies to the Auxiliary DSO-AN. The DSO-AN shall submit the copies to the following offices.
Copy 1 To NOAA-National Ocean Service.
Copy 2 To Commander (oan) of the Coast Guard District where aid is located.
Copy 3 Retain for district records.
Copy 4 To the primary observer's FSO-AN for the flotilla records.
Copy 5 To NOAA-National Ocean Service. NOAA-National Ocean Service will award credit and return the form to the primary observer for his/her records.

Encl. (4) to COMDTINST M16500.7

AIDS TO NAVIGATION, BRIDGE FENDER DISCREPANCIES - Observing and Reporting - Lists of Aids to Navigation and their characteristics are in the Coast Guard Light Lists. These cover all areas of the country including the Great Lakes and Western Rivers. Every Auxiliary facility should have a copy of the current applicable Light List on board, updated through the most recent Local Notice to Mariners. Auxillarists assist the Coast Guard by observing and promptly reporting all discrepancies in Aide to Navigation and the Bridges and Fender Systems. The reporting method used should be related to the danger that is posed by the discrepancy. Routine aid discrepancies should not be reported by radio.

FEDERAL AIDS ONLY

Critical Discrepancies - Report by Radio

1. Aid totally covered or shrouded in ice.
2. Light signal showing improper characteristics or rhythm.
3. Light signal obscured or extinguished.
4. Sinking or submerged buoy.
5. Buoy off station, adrift, missing, capsized or stranded.
6. Radiobeacon off the air or giving improper characteristics.
Note, Characteristics of radiobeacons are in the Coast Guard Light List.
7. Vandalism of aids either in progress or the result of such actions.
8. Aids damaged by vessel collision.
9. Collapsed bridge structures, fender systems and obstructions to navigable channels.

FEDERAL AIDS ONLY

Urgent Discrepancies - Report by Telephone

1. Daymarks missing or damaged by causes other than vandalism.
2. Sound signal failure; whistle, bell, gongs or their tappers missing.
Note: Sound signals may be electrically operated or wave actuated.
3. Radiobeacon timing sequence incorrect.
Note: Timing sequence of radiobeacons are in the Light List.
4. Light burning dim or showing reduced intensity.
Notes: Verify by close examination that the "burning dim" or "reduced intensity" condition is not being caused by smoke, haze, fog, or other atmospheric conditions.
5. Lights partly or totally obscured by dayboards.
6. Bridge light outages; inoperative draw, swing, lift or retractable bridges.

FOR ALL PRIVATE AILDS and ROUTINE FEDERAL AID DISCREPANCIES

Routine Discrepancies - Report by Hail

1. Aid obscured by foliage or other objects that should be removed.
2. Faded daymarks, whether located on structures in the water or on land.
3. Delamination of dayboards.
4. Leaning structure. (Leaning more than 15 degrees from the vertical.)
5. Bird nest(s) on aids.
6. Improper dayboards. Check against Light List.
7. Retroreflective material peeling, missing, or inadequate.
8. Dayboard missing.
9. Numbers that are obliterated and not easily read or identified.
10. Extensive bird fouling on aid.
11. Peeling paint interfering with ability to see aid.
12. Extensive deterioration and/or rotting of road supporting structure.
13. Missing or severely damaged radar reflectors.
14. Missing vent valve on lighted buoy.
15. Discrepancies regarding state and privately owned and maintained aids.
16. Other bridge or fender system discrepancies. (See Aids to Navigation and Chart Updating Manual, Chapter 5 for complete list of discrepancies.)

AIDS TO NAVIGATION REPORT

Department of
Transportation
U.S. Coast Guard
CG-5474(AUX) (10-87)

INDICATE:

VERIFICATION

DISCREPANCY

AIDS TO NAVIGATION REPORT

SECTION I												OBSERVER'S IDENTIFICATION DATA															
MEMBER NUMBER						LAST NAME						FIRST NAME AND INITIAL															
OBSERVER'S MAILING ADDRESS																											
NUMBER AND STREET												CITY						STATE		ZIP CODE				TELEPHONE NUMBER			
SECTION II												COAST GUARD NOTIFICATION															
COAST GUARD UNIT NOTIFIED								DATE OBSERVED				DATE REPORTED				METHOD OF REPORTING											
								M M D D Y Y				M M D D Y Y				RADIO _____ TELEPHONE _____ MAIL _____											
																TIME REPORTED _____											
SECTION III												DESCRIPTION OF AID															
OWNERSHIP						COAST GUARD _____ STATE _____ PRIVATE _____ OTHER _____																					
POSITION						AID NAME _____ LLNR _____ MILE MARKER _____																					
LATITUDE _____						LONGITUDE _____						CHART NO. _____ OTHER _____															
TYPE OF AID						BUOY _____		STRUCTURE _____		LIGHTED _____		SOUND _____		ELECTRONIC _____													
STRUCTURES						WOOD _____		METAL _____		OTHER _____		SOUND SIGNALS		BELL _____		GONG _____											
LIGHT COLOR						RED _____		GREEN _____		WHITE _____		YELLOW _____		HORN _____		WHISTLE _____											
COMMON DISCREPANCIES (* COMMENTS REQUIRED)																											
___ VANDALIZED*								___ DAMAGED BY COLLISION								___ RETROREFLECTIVE MATERIAL											
___ IMPROPER CHARACTERISTICS								___ OBSCURED								___ PEELING											
___ MISSING*								___ DAMAGED								___ MISSING											
___ BIRDS NEST								___ FADED								___ INADEQUATE											
___ EXCESSIVE BIRD FOULING								___ PEELING PAINT								___ MILE MARKER											
___ BATTERY BOX DAMAGED								___ MISSING VENT VALVE								___ MISSING											
___ OBLITERATED NUMBER								___ DAYMARK DELAMINATED								___ DAMAGED											
___ EXCESSIVE DETERIORATION								___ ROTTING WOOD STRUCTURES								___ LEANING MORE THAN 15°											
LIGHTED AID												LANTERN DAMAGED _____				EXTINGUISHED _____				LIGHT DIM/REDUCED INTENSITY _____							
												TIMING ERROR _____				OPERATING CONTINUOUSLY _____				OTHER _____							
BUOY						SINKING _____		SUBMERGED _____		OFF STATION _____		NUMBER OBSCURED _____				NUMBER OBLITERATED _____											
						ADRIFT _____		CAPSIZED _____		STRANDED _____		TAPPER MISSING _____		BELL MISSING _____		GONG MISSING _____											
						WHISTLE MISSING _____		OTHER _____																			
COMMENTS: *HOW WAS OFF STATION DETERMINATION MADE? (i.e. HORIZONTAL SEXTANT ANGLES, COMPASS BEARINGS, RANGE FINDER, RADAR, LORAN, OR SEAMAN'S EYE?)																											
SIGNATURE OF OBSERVER												DATE															

Encl. (4) to COMDINST M16500.7
 Aids To Navigation Report (cont'd)

Reverse of Copy 1

2ND OBSERVER'S IDENTIFICATION DATA									
MEMBER NUMBER			LAST NAME				FIRST NAME AND INITIAL		
NUMBER AND STREET			CITY		STATE	ZIP CODE	TELEPHONE NUMBER		
SHARE OF CREDITS _____ EQUAL _____ %									
3RD OBSERVER'S IDENTIFICATION DATA									
MEMBER NUMBER			LAST NAME				FIRST NAME AND INITIAL		
NUMBER AND STREET			CITY		STATE	ZIP CODE	TELEPHONE NUMBER		
SHARE OF CREDITS _____ EQUAL _____ %									
4TH OBSERVER'S IDENTIFICATION DATA									
MEMBER NUMBER			LAST NAME				FIRST NAME AND INITIAL		
NUMBER AND STREET			CITY		STATE	ZIP CODE	TELEPHONE NUMBER		
SHARE OF CREDITS _____ EQUAL _____ %									
5TH OBSERVER'S IDENTIFICATION DATA									
MEMBER NUMBER			LAST NAME				FIRST NAME AND INITIAL		
NUMBER AND STREET			CITY		STATE	ZIP CODE	TELEPHONE NUMBER		
SHARE OF CREDITS _____ EQUAL _____ %									
6TH OBSERVER'S IDENTIFICATION DATA									
MEMBER NUMBER			LAST NAME				FIRST NAME AND INITIAL		
NUMBER AND STREET			CITY		STATE	ZIP CODE	TELEPHONE NUMBER		
SHARE OF CREDITS _____ EQUAL _____ %									

Encl. (4) to COMDINST M16500.7
Postcard

DEPARTMENT OF TRANSPORTATION
U.S. COAST GUARD
WASHINGTON, D.C. 20593-0001
—
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300



POSTAGE AND FEES PAID
U.S. COAST GUARD
DOT 514

(Member Name)

(Address)

(City, State, Zip Code)

Fold

Fold

NOAA, NATIONAL OCEAN SERVICE
U.S. COAST GUARD
U.S. COAST GUARD AUXILIARY

Thank you for the recent report:

Chart Updating _____
Aids to Navigation _____
Bridge Discrepancy _____
Other _____

Your contributions provide a valuable service to the National Ocean Service and other mapping agencies in their continuing efforts to produce reliable charts, maps, and related publications of the land, sea, and air.

The U.S. Coast Guard appreciates you observing and reporting aids to navigation and bridge lighting and fender discrepancies promptly so that they may be corrected in order to preserve safe navigation for all mariners.

The information you have forwarded will be evaluated for chart application or inclusion in related publications, and credits will be awarded as appropriate. We look forward to receiving many more reports from you in the future.

Smooth and Safe Sailing,
Chief, Marine Chart Branch

- Replacement Chart Ordered
- No Replacement Chart Ordered
(*Obsolete chart section furnished*)

NOTE: When the Observer's name and address is completed on the upper part of this form, it will be returned to the Observer with an acknowledgment by NOAA, National Ocean Service.)

PRIVATE AID TO NAVIGATION

INSPECTION/VERIFICATION (CIRCLE ONE) REPORT

OFFSHORE STRUCTURES & OTHER CLASS I AIDS

AID NAME _____ LLNR/LLPG _____

TYPE ANNUAL _____ ESTABLISHMENT _____ DISCONTINUANCE _____

OWNER PRESENT? YES NO

TYPE AID _____

TYPE POWER SOURCE SHORE _____ BATTERY _____ SOLAR _____ OTHER _____

EQUIPMENT: CHECK ITEMS AS APPLICABLE. CHECK N/A IF EQUIPMENT NOT INSTALLED. COMMENT ON BLANK ITEMS IN REMARKS.

SHORE AID 1. Is structure secure and capable of supporting the equipment installed?

2. Is the daymark in proper condition?

3. Is daymark proper size & color?

BUOY 1. Is buoy on assigned position?

2. Is the buoy the type approved on the CG-4143?

3. Is buoy clean & properly painted with proper retro?

LIGHTING 1. Are lights displaying proper characteristics?

2. Are lantern assembly/lamps the type authorized on CG-4143?

3. Proper voltage to lantern assembly?

4. Is lantern assembly properly mounted and level?

5. Does lampchanger operate properly?

SOUND SIGNALS 1. Is equipment same as that authorized on CG-4143?

2. Proper voltage to equipment?

MISC 1. Is there a radar reflector installed?

2. Is there a racon installed?

THE CONDITION OF THIS AID IS GENERALLY: GOOD _____ FAIR _____ POOR _____

REMARKS (*Include how buoy position obtained.)

BY _____ UNIT _____ DATE _____

PRIVATE AID TO NAVIGATION VERIFICATION REPORT

CLASS II & III AIDS

AID NAME _____ LLNR/LLPG _____

TYPE VERIFICATION

ANNUAL _____ ESTABLISHMENT _____ DISCONTINUANCE _____

OWNER PRESENT? YES NO

TYPE

AID _____

AID EQUIPMENT/CONDITION: CHECK ITEMS APPLICABLE. CHECK N/A

IF EQUIPMENT NOT INSTALLED. COMMENT ON BLANK ITEMS IN

REMARKS.

- 1. Is aid secure and capable of supporting the equipment installed? YES/NO/N/A
- 2. Is the daymark the proper size & color and in proper condition? YES/NO/N/A
- 3. Is the aid on assigned position? * YES/NO/N/A
- 4. Are lights, if installed, displaying proper characteristics? YES/NO/N/A
- 5. Are sound signals, if installed, sounding proper characteristics? YES/NO/N/A
- 6. Is a racon installed and operating properly? YES/NO/N/A

THE CONDITION OF THIS AID IS GENERALLY:

GOOD _____ FAIR _____ POOR _____

REMARKS (*Include how buoy position obtained.)

VERIFIED

BY _____ UNIT _____ DATE _____

SAMPLE AGREEMENT
(See Section B.8.)

AGREEMENT

between

THE UNITED STATES COAST GUARD

THE STATE OF _____

WHEREAS, THE STATE OF _____, through its Department of _____, an agency under the Laws of _____ authority to regulate, establish, operate and maintain maritime aids to navigation on waters over which _____ has jurisdiction (hereinafter referred to as _____), has requested that certain navigable waters of the United States in the State of _____ be designated "State Waters for Private Aid to Navigation" (hereinafter "State Waters*") to facilitate regulation by _____ of maritime aid to navigation, including regulatory markers; WHEREAS the Commandant, U. S. Coast Guard, has determined: That _____ has the capability to regulate certain maritime aids to navigation, including regulatory markers, so as to improve the safety of navigation maritime aids to navigation, including regulatory markers, so as to improve the safety of navigation; and That it would be in the public interest to promote regulation of such maritime aids to navigation by

NOW THEREFORE, in order to facilitate cooperative regulation of maritime aids to navigation on the waters where there is concurrent jurisdiction under the sovereign, governmental, and policy powers of the State of _____ and of the United States as contemplated by Title 33, Code of Federal Regulations, Subpart 66.05;

IT IS AGREED AS FOLLOWS:

- (1) Neither party cedes by this agreement any of its powers and responsibilities to the other.
- (2) _____ is hereby permitted to regulate maritime aids to navigation, including regulatory markers, on "State Waters" on the condition that the aids conform to the Uniform State Waterway Marking System specified by Title 33, Code of Federal Regulations, Subpart 66.10 or the United States' Lateral system of buoyage, subpart 62.25.
- (3) This agreement shall constitute a general permit in lieu of individual permits as prescribed in Title 33, Code of Federal Regulations, 66.01-5, for all maritime aids to navigation, including regulatory markers, which are in conformity with this agreement and the regulations in Title 33, Code of Federal Regulations, Subparts 62.25, 66.05 and 66.10, heretofore established or to be established in _____ "State Waters" as previously designated or hereafter designated by the Commandant. The extent of "State Waters" may be modified from time to time as provided in paragraph 9.
- (4) _____ will modify or remove, or cause to be removed, maritime aids to navigation, including regulatory markers, established under the authority of _____, without expense to the United States when so directed by the Commander, _____ Coast Guard District (hereinafter

"COAST GUARD") subject to the right of _____ to appeal any such order to the Commandant, whose decision shall be final.

* Some states may attach other legal significance to the term "State Waters," in which case the term "State Waters for Private Aids to Navigation" should be used throughout the agreement.

- (5) COAST GUARD shall have the right to inspect the maritime aids to navigation authorized by this agreement at any time. Whenever possible prior notice shall be given by the Coast Guard to the State of _____ - to allow for joint inspection.
- (6) _____ shall furnish COAST GUARD (mail address: Commander, _____ Coast Guard District, _____ a listing of the location and type of aids to navigation under the authority of _____ prior to the effective date of this Agreement. COAST GUARD shall furnish _____ a list of all private aids to navigation under COAST GUARD jurisdiction in the "State Waters" of _____ in existence prior to the effective date of this Agreement, which are to be transferred to the administration of _____. The list shall include the information referred to in 33 CFR 66.01-5 except for the chart or sketch noted in paragraph (a) of that section.
- (7) _____ shall inform the COAST GUARD of the nature and the extent of any change in _____ maritime aids to navigation as soon as possible, preferably not less than 30 days in advance of making the changes.
- (8) a. In each instance in which a regulatory marker is to be established in "State Waters," _____ shall require the agency or political subdivision of the State establishing or authorizing the marker to obtain prior permission from the District Engineer. U. S. Army Corps of Engineers, having jurisdiction to regulate the waters involved, or a statement that there is no objection to the proposed regulation of the water area. A copy of the Corps of Engineers permit or letter of authority shall be provided by _____ to COAST GUARD upon request.
- b. When a fixed or floating aid to navigation, or a mooring buoy is to be established in "State Waters," _____ shall require the private party, agency or political subdivision establishing or authorizing the aid or mooring buoy to obtain prior permission or a statement of no objection from the District Engineer concerned.
- (9) The Commandant may, upon his own initiative or upon request, revoke or revise any designation of "State Waters" previously made by him. Written notice will be given _____ (mail address: _____) of any such action contemplated by the Commandant. Except in an emergency, _____ will be afforded a period of not less than 30 days from the date of the notice in which to inform the Commandant of _____ view in the matter before final action is taken to revoke or revise such designation.
- (10) At any time after this Agreement has been in effect for one year _____ may draw from this Agreement upon giving 90 days written notice to COAST GUARD. In this event, prior to withdrawal _____ will furnish to COAST GUARD

data such as that described in paragraph 6 in order to facilitate resumption of exclusive COAST GUARD supervision of maritime aids to navigation in navigable waters of the UNITED STATES within the State of _____ ("State Waters").

- (11) By 1 September annually, _____ will provide COAST GUARD a listing of all aids being administered in "State Waters" as of 30 June of that year. This listing will indicate the number of each type of aid but need not include the detailed information required under paragraph 6 above.
- (12) The parties hereby designate the _____ State of _____, and the Chief, _____ Branch, _____ Coast Guard District, as liaisons officers to facilitate the cooperation and assistance contemplated by this Agreement.

FOR THE UNITED STATES COAST GUARD

DATE

FOR THE STATE OF _____

DATE

WAMS ANALYSIS DESCRIPTION/FORMAT

This enclosure contains a description of a typical WAMS analysis. Analyzing the aids to navigation requirements in a waterway, then developing an efficient way to provide it is, by nature, a difficult assignment. This format is provided to simplify writing the report, to structure the work in a logical sequence, and to ensure similarity between analyses for easier review and reference. An outline is included at the end of this enclosure. Since waterways are different, WAMS analyses will be different. A waterway with five daybeacons, serving two small marinas and a fishing pier demands far less analysis time and resources than does a 42 foot channel with thirty lighted buoys, serving 70,000 dead-weight ton tankers and the USN 7th Fleet. The words in this enclosure are intended to give you the flexibility to scale your effort to the relative significance of your target waterway.

STANDARD WAMS ANALYSIS FORMAT FOR CRITICAL WATERWAYS

1. Title Page: Include the district, waterway name and number, waterway classification, names and signatures of the people preparing and reviewing the work, date completed, and scheduled review date.
2. Table of Contents: Itemize and briefly describe each section.
3. Charts: Include one reduced copy of the largest scale chart of the waterway to orient the reader. Include as enclosure (1) other charts as may be needed. If aid changes are indicated, include one chart showing the existing aid configuration, and another showing the changes.
4. Action Summary: This section should contain the results or action items resulting from the analysis. Don't make the reader search through the document to find the bottom line. If no action is needed, say so. If aid changes are recommended, list them. If resources or staffing changes are indicated, describe them here. Include any documentation changes necessary to the relevant Coast Pilot, Light List, or chart. The purpose of this section is to consolidate all the results in one place for easy reference. It should be a brief list, not a detailed discussion. Let the justification for changes follow in the body of the report.
5. Information Collection: This section contains the results of the information search conducted to prepare for the analysis. You must understand the waterway before you can make informed judgments about its aids to navigation needs. Use the following format:

Encl. (5) to COMDTINST M16500.7

5. a. Narrative Description: Describe the waterway as seen from a vessel entering from seaward, similar to the Coast Pilot format. If the waterway is a federal navigation project, identify that fact and provide details such as project width, depth, dredging frequency, etc. Significant features of the narrative description should include:
 - (1) geographic features (channel lengths, widths, depths, bottom types, topography ashore)
 - (2) facilities (docks, refineries, fisheries, marinas)
 - (3) bridges (owners, clearances)
 - (4) anchorages
 - (5) environmental factors (tide, current, wind, fog, storm frequencies, 80% and 90% transmissivity values, sensitive areas)

- b. Users: Describe the traffic on the waterway. This information is vital. Our program exists to serve them. You should become familiar with the following information:
 - (1) vessel types and their dimensions (largest vessel, tug/barges, military, fishing, recreational)
 - (2) transit frequencies by type of vessel
 - (3) commodities carried
 - (4) pilot groups
 - (5) port authorities or local government agencies responsible for port control and facilities
 - (6) other marine interests (boating associations, harbor masters, yacht clubs)

An excellent source for much of this information is an annual publication from the U.S. Army Corps of Engineers, titled "Waterborne Commerce of the United States." It may be obtained free of charge from:

Department of the Army
Waterborne Commerce Statistics Center
PO Box 61280
New Orleans, LA 70161 (WRSC CC)
Phone: (504) 885-6800

5. c. Public Comment: Solicit input from the public. The very best way to do this is to meet them, preferably on their vessels, and under as many different conditions as time permits. By viewing the aid system through their eyes and listening to them as they transit the waterway, you go a long way toward understanding their needs and gaining their confidence. Besides user rides, you should solicit verbal and written comments. Always use the Local Notice to Mariners to advertise the fact that you're currently studying Waterway "X," and that comments are welcome. You should make an exclusive notification to the important marine interests like pilots, port authorities, military commands and other Federal agencies, and of course local Coast Guard units.
 - d. Casualty History: Gather vessel casualty information for the waterway. Try to identify the location and cause of each accident. This may highlight deficiencies in the aid system that otherwise might go unnoticed. Local data sources include SAR files, the MSIS database, the MSO/COTP, and Port Authorities. The Casualty Maintenance database (CASMAIN) is maintained by Commandant (G-MMI). It is computerized, and can produce the casualty history, from 1972, for a geographic area based on a user specified set of conditions.
 - e. Traffic Patterns: This section should document the transit conventions. Examples deserving your understanding include the presence of a VTS or TSS, pilot pick-up procedures, or any MSO restrictions of certain vessel types (SIV's) or weather conditions.
 - f. Charts/Surveys: Review the latest charts and bottom surveys. Document if they are out of date.
 - g. Aid Assignment List: Include a list of all aids to navigation serving the waterway. This should be an ATONIS printout showing the aid name, aid number, aid type, authorized hull, daymark, light and sound signal information, and the primary servicing unit.
6. Public Comment Summary:
 - a. Summarize meetings or correspondence with commercial interests, pilots, port authorities, Federal agencies, recreational boating organizations, and other interested groups. Local Coast Guard units - cutters, Groups, COTP, or MSO - should also be contacted. Letters, questionnaires, or other written material should be enclosed.
 - b. Document comments from non-user sources, such as complaints about sound signals or locations of fixed aids. Our aids systems serve, or protect from the

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6. b. (cont.) consequences of waterway accidents, this segment of the public too.
- c. Note any special political interest in the waterway or its facilities. This can (and often does) prove to be an overriding factor in waterway management.
7. Criticality Determination: The District's previous criticality classification should be confirmed or revised. Following the guidelines from paragraph 3.C. of this manual and from the applicable Commandant Instruction 16500 series, justify your determination. If a waterway is found to be critical, explain which categories (militarily, environmentally, or navigationally) cause the critical label.
8. Analysis (Evaluation/Recommendations): This is the section where you put all the good information you gathered to work. Now that you're educated about the waterway, you are prepared to make some judgements about the aids to navigation needs.
 - a. Minor Aid System:
 1. Evaluate the existing aid system using the procedures outlined in Chapter 4 of this manual and the Short Range Aids to Navigation Systems Design Manual for Restricted Waterways. These results should be considered along with the public comments received.
 2. Requirements that need Headquarters funding should be added to your Waterway AtoN Project Schedule, CG-3739. This will ensure they are considered in the budgetary process.
 3. Perhaps the key product of transits on users' vessels is a determination of how the aids to navigation system is actually used. By riding a representative sample of the various classes of vessels using the waterway, the analyst can observe how the mariner actually practices navigation within the system. This information can provide insights into the system adequacy not readily apparent from our analytical tools and our own aids to navigation experience. Obviously, any recommendations concerning changes to the waterway system must be tempered by the realities of everyday practice.
 - b. Major Aids: Describe each light in terms of its characteristics, function, physical condition, and LAMP status. Evaluate the operational requirements for all signals on the major aids in the waterway. Conduct a material inspection of each major light. Evaluate the need for and the condition of monitoring equipment. As part of the final review, District Aids to Navigation Offices should initiate whatever action is necessary to

8. b. (cont.) restore the light to a suitable operational condition including, but not limited to: submitting an SSMR or establishing a project to modernize the equipment.
 - c. Radio Aids to Navigation: Radiobeacons and RACONs are, in effect, short range aids and should be discussed in terms of their contribution to the waterway. LORAN-C should also be included, with a discussion of local stability and accuracy. You should query local mariners for information on radio aid use. Address the waterway's electronic aid accuracy requirements if possible. The use of radionavigation aids for restricted water navigation is increasing.
 - d. Servicing Units: Evaluate those units with primary and secondary servicing responsibility for the waterway's aids in terms of capability, adequacy, and condition. Where this evaluation highlights a material deficiency, you should conduct a separate formal technical inspection. Verify that the existing assignment of aids to servicing units makes good sense, that is the aids are being serviced by the most economical unit. Check manning levels at these units, especially ANTs. The WAMS analysis can be a forum to document shortages.
 - e. Horizontal Control: Compare the desired positioning tolerances with the achievable positioning tolerances. If horizontal control should be improved, try to take care of it locally. If the District lacks the money, send documented requests to G-NSR.
 - f. Chart and Pub Alterations/Corrections: You are likely to uncover long-standing errors in the local charts, in our Light List, in the Coast Pilot and other maritime publications. The publishers of these documents rely heavily on user input to keep them honest and up-to-date. If you find mistakes, notify the appropriate agency.
9. General Comments: Any relevant information which didn't fit conveniently elsewhere should go here.
 10. Enclosures: Include material summarized or referenced in the main body of the report, but not otherwise available in the aids to navigation office. Examples include user ride trip reports, questionnaires, surveys, casualty data, traffic data, and points-of-contact lists. Always make the first enclosure the appropriate chart or charts of the waterway.

MINIMUM WAMS DOCUMENTATION FOR NON-CRITICAL WATERWAYS

All waterways must be analyzed and periodically reviewed. However, the level of detail and extent of analysis for non-critical waterways is left to each district's discretion. Formal documentation, beyond the justification for the non-critical designation, is not required.

Encl. (5) to COMDTINST M16500.7

WAMS FORMAT

- I. Title Page
 - A. Waterway name and number
 - B. Criticality
 - C. Name of person(s) preparing report
 - D. Date analysis accomplished
 - E. Date analysis scheduled for review
- II. Table of Contents
- III. Chart Section (include additional charts in enclosure (1))
- IV. Action Summary (results/bottom line)
 - A. Aid changes?
 - B. Resource changes?
 - C. Assignment changes?
 - D. Other action items!
- V. Information Collection
 - A. Narrative description (e.g. Coast Pilot)
 - 1. Geographic features
 - 2. Facilities
 - 3. Bridges
 - 4. Anchorages
 - 5. Environmental factors
 - B. Users
 - 1. Vessels
 - 2. Transit frequencies
 - 3. Commodities
 - C. Public comments
 - D. Casualty history (10 year?, 5?, 2?)
 - E. Traffic patterns - VTS/TSS
 - F. Charts/surveys
 - G. Aid assignment list
- VI. Public Comment Summary
 - A. User ride comments
 - B. Written comments received
 - C. Verbal comments received

VII. Criticality Determination

VIII. Analysis (Evaluation/Recommendations)

- A. Minor aids (Design Manual/Chap 4)
- B. Major aids (Chap 4)
- C. Electronic aids
- D. Servicing units
- E. Horizontal control
- F. Chart alterations/corrections

IX. General Comments

X. Enclosures

- (1) Charts

Other Examples:

- (2) Questionnaires
- (3) Public comments

IMPLEMENTATION OF NORTH AMERICAN DATUM OF 1983 (NAD 85)

Nautical charts presently are constructed based on one of a number of horizontal datums which are adopted to best represent individual regions around the world. The exact placement of lines of latitude and longitude on a nautical chart is dependent on the referenced datum. Charts of the United States are currently referenced to datums such as the North American Datum of 1927 (HAD 27), Puerto Rican (PR) Datum, Old Hawaiian Datum, and others. Through the use of satellites and other modern surveying techniques, it is now possible to establish global reference systems. As a result, the North American Datum of 1985 (NAD 83) has been identified to replace the various datums used in the past on National Ocean Service (NOS) charts, except charts of the Pacific Territorial Islands which will be compiled on World Geodetic System 1984 (WGS 84). This datum is equivalent to the NAD 85 for charting purposes. The conversion to NAD 83 has begun on NOS charts, with full implementation expected to be accomplished over a ten year period.

What does this change in datum mean to the mariner? It means that during the period of conversion, some charts will be referenced to the new NAD 85 datum, while others will still be referenced to the old former datum. Charted features will remain unaffected in their relationship with the surrounding area. Therefore, when comparing charts of the same area, referenced to different datums, no changes to charted features will be noticed since all features shift by approximately the same amount. The apparent difference will be the shift of the latitude and longitude grid in relation to the charted features. As a result, the geographic positions (latitude and longitude) of all charted features will change. Each chart that is published carries a standard datum note identifying the datum used on that chart. (See example below). In addition to the standard datum note, all charts that have been converted to NAD 85 will carry an additional Horizontal Datum Note, similar to the one below, that will inform the mariner if any correction must be made to the latitude and longitude when transferring geographic positions from the previous charted datum to NAD 83. Mariners are cautioned that direct readout navigation systems provide latitude and longitude referenced to a specific datum. A navigation receiver referencing NAD 27 and used in conjunction with a NAP 85 chart, will produce an error in position of approximately the average shift value published on the chart. For maximum accuracy in navigation, mariners using LORAN should plot positions using time delays to avoid reference to specific datums.

ENSENADA HONDA
Mercator Projection
Scale 1:6.500
North American Datum of 1983
(World Geodetic System 1984)
HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), and for charting purpuss is considered equivalent to the World Geodetic System 1984 (WAS 84). Geographic positions referred to the Puerto Rico datum must be corrected on average of 7.110" southward and 1.148" eastward to agree with this chart. The correction values are based on preminary NAD 83 data.

Enclosure (6) to COMDTINST M16500.7

In future Local Notices to Mariners, geographic positions will be listed in the datum of the current edition of the nautical chart, on which the particular correction appears. This means that a chart correction for an aid to navigation which appears on more than one chart, will list a different geographic position, for charts of differing datums. The datum for each chart will be identified in all chart corrections published. In Broadcast Notices to Mariners, a bearing and range from a fixed object will be given. Instead of two different geographic positions. This will reduce possible confusion, since the bearing and range will be the same for both datums.

Below is an example of how chart corrections will appear in the Local Notices to Mariners, and now the position of the same aid to navigation Shown on charts of the same area but with differing datums can vary. Mariners are reminded that no corrections to the geographic positions listed in the Local Notices to Mariners will be required. If you are using a chart with the same datum as that referenced in the chart correction. However, the correction listed in the Horizontal Datum Note must be applied. If you are transferring a position from the previous referenced datum to a chart referencing NAD 83. Below is an example of the correction required if you were to transfer a geographic position from Chart 25655 (PR Datum) to Chart 25654 (NAP 85).

	Latitude	Longitude
(PR OATUIM)	1816'47.9"N	65'17'14.9"W
Correction	- 7.1"	- 1.1"
(NAP 85)	18'16'40.8"N	65'17'15.8"W

Upon completion of the conversion, all mariners will be using a single chart datum which will conform with the increased accuracy available from satellite navigation systems.

Questions on the implementation of NAD 83 can be answered by contacting:

Chief, Marine Chart Branch (N/CG22)
National Ocean Service/NOAA
6001 Executive Boulevard
Rockville, MD 20852