

U.S. Department
of Transportation

United States
Coast Guard



Commanding Officer
USCGC RED CEDAR (WLM-688)

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RCEINST 3530.B
18 DEC 1997

USCGC RED CEDAR (WLM 688) INSTRUCTION 3530.B

Subj: NAVIGATION STANDARDS AND PROCEDURES

Ref: (a) Cutter Navigation Standards and Procedures, COMDTINST 3530.1
(b) Ship Control and Navigation Procedures for Atlantic Area Cutters not in the CART/TSTA Training Cycle, LANTAREAINST 3530.2
(b) Standing Orders to the Officer of the Deck, RCEINST 1601.1
(c) Dutton's Navigation and Piloting
(d) Bowditch

1. PURPOSE: To establish definitions and standards of navigational practices aboard RED CEDAR.

2. ACTION: All OOD's, conning officers and QMOW's will read, sign and comply with these standards and review them as often as necessary and at a minimum quarterly to remain thoroughly familiar with their contents. If a contradiction exists between these standards and an instruction from a higher authority notify me immediately. The Navigator shall ensure a copy of these instructions are kept in the Captain's Night Order Book.

3. DISCUSSION: On the following pages there are a set of guidelines for the safe navigation of RED CEDAR. These instructions are that, only a guideline. In addition, to these instructions seamanship, foresight, and common sense must guide you in the performance of your watchstation.

4. DIRECTIVES AFFECTED: RCEINST 3530.3a is cancelled.

5. CHANGES: Proposed changes are important for this document to remain useful and should be routed to me through the chain of command.


T. W. RINOSKI

Encl: (1) Trip Brief Checklist
(2) Risk Assessment Worksheet
(3) Navigation Brief

- (4) Navigation Plotting Symbols
- (5) Buoy Folder Checklist
- (6) Helm Commands
- (7) Engine Order Telegraph Commands
- (8) Standard Line Handling Commands
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A. DEFINITIONS:

1. ARTIFICIAL RANGE: A range formed by 2 objects such as towers, buildings, lights, trees, etc.
2. DANGER BEARING: The maximum or minimum bearing of a point for safe passage of an off-lying danger.
3. DANGER RANGE: The maximum or minimum range of a point for safe passage of an off-lying danger.
4. NATURAL RANGE: A range formed by natural objects such as rocks, peaks, trees, etc.
5. NAVIGATIONAL DRAFT: The draft of a vessel when figuring safe navigation. **Defined as 10 feet for Red Cedar.**
6. OPEN OCEAN: Intended track lies 4000 yards away from any shoal water or hazards to navigation.
7. RESTRICTED WATERS: Areas where shoal water or other hazards to navigation lie within 300 yards of the ship's intended track.
8. SHOAL WATER: Shallow water, **defined as less than 12 feet for Red Cedar.**
9. PILOTING WATERS: When Red Cedar is not in restricted waters or open ocean piloting practices will be used.

B. PRETRIP PLANNING:

Standard navigational planning and briefing are essential for Red Cedar to safely and effectively carry out its missions and will be followed as per references (a) and (b).

1. CHART AND PUB GUIDELINES:

Charts shall be reviewed by the Navigator and the QMIC before every trip and checked for the following items:

- Turn bearings or turn ranges, whichever is best, on EVERY turn.
- Shoal Water outlined to the 12 ft mark.
- All major objects on charts used for piloting practices will have a letter designation and be listed in the gazeteer.
- Tracklines should be verified. (Tracklines do not cross any danger areas that have been corrected on the chart. They should also be verified for the shortest and safest routes.)
- Charts should be checked to see if they are in good condition: ie. crease, large folds, tears, coffee stains, and free of over abundant pencil marks.
- All publications corrected and up to date.

- All charts used in the transit shall be corrected and up to date, chart card charged, and initials written on the side of the chart.

2. NOTICE TO MAINERS GUIDANCE:

Broadcast Notice to Mariners shall be kept in the BNM folder by the senior QM3 until cancelled.

C. NAVIGATIONAL BRIEFING:

- Follow outlines in Commandants Cutter Navigation Standards and Procedures, COMDINST 3530.2 for Standard Navigational Briefings and LANTAREAINST 3530.2 enclosure (2).

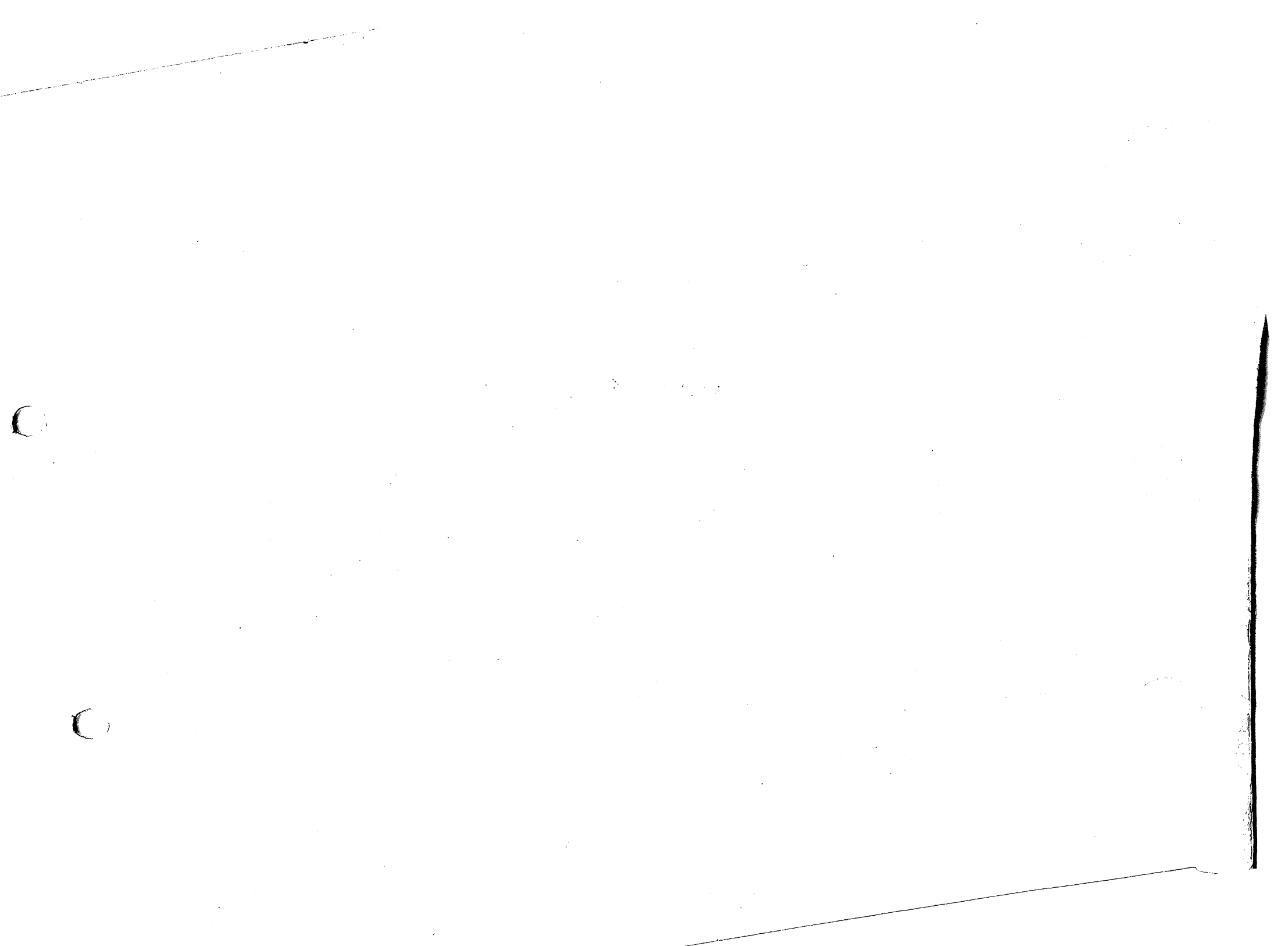
1. TRIP BRIEFS:

- Trip briefs shall be done in accordance with references (a) and (b). Enclosure (1) shall be followed and filled out at each trip brief. It shall be forwarded to the Navigator for filing.
- The following minimum information will be reviewed at the trip brief for trips inside our normal AOR.
- Review of tracklines and any BNM's, hazards, firing ranges, bridges, AtoN work, equipment status, personnel issues, other factors that may effect the day's work etc. as the trackline is reviewed. (ENSURE all previous pencil marks, fixes, etc. are erased prior to trip brief)
- Aton to be worked with tides and currents for that specific buoy and time.
- Review of weather for the areas and days that we are to be underway.

2. DAILY WORK BRIEFS:

- Each morning before the work starts a Daily Work Brief will be completed and led by the Operations Officer. This shall consist of the following:
 - Each aid to be worked and work to be done
 - Time we expect to reach each aid
 - Tides and Currents expected at each aid
 - Daily weather forecast
 - Special evolutions such as passing through bridges, QMOW Assist, Small boat ops, etc.
 - Risk assesment, enclosure (2), completed as per section (Q) by person directed by XO.

3. PRE UNDERWAY/MOORING NAV BRIEF



- (D) Potomac River - from Smith Point to the 301 Hwy bridge
10 min fixes
- from the 301 Hwy bridge to Washington
DC - 5 min fixes
- (E) Tangier Sound - from Tangier Island Lt.
to Tangier LB 16 - 10 min fixs
- (F) Pocomke Sound - 5 Min fixes
- (G) Hooper Straight\
Kedges Straight > 3 Min fixes
Pocomoke River /
- (H) Chesapeake Bay Steaming - 15 min fixes
- Fixes shall be labeled in accordance with Enclosure (4).

L. ANCHORING PROCEDURES

- All anchorages are to be clearly marked on the chart, with drop bearing and bearings 2 degrees on each side, courses, ranges every 200 yds out to 1000 yds, and head bearings with bearings 2 degrees on each side. The Anchor Detail is to be used and in place 2000 yds from the drop point. Two minute fixes up to the 1000 yd point and continuous EP's from the 1000 yd point. Standard reports are to be called out to the Conning Officer. Anchoring information and commands shall be passed in accordance with enclosure (9).
- LAAPs will be used to further assist the DWO in anchoring the ship. The position of the anchorage will be placed in LAAPs before setting the anchor.
- After anchoring, the position in LAAPs will be updated so that the ship is in the center of the screen. This will be used by the anchor QMOW to help determine if we are dragging anchor. In addition, visual bearings and radar ranges will be monitored as noted in the CO's Night Orders and the Anchor Log as noted by the Navigator.

M. AtoN PROCEDURES

- Prior to approach
 - (A) Plot buoy on the chart using radar ranges and bearings to determine whether on or off station.
 - (B) Set up LAAPS with proper aid data including position, name, LLNR, side, excursion, and accuracy

- Before mooring or entering restricted waters in anticipation of mooring or anchoring a Nav Brief will be completed using enclosure (3) by a person directed by the Navigator. This shall be done to communicate vital information and refocus each member of the bridge team before the evolution occurs.

D. NAVIGATIONAL TEAM/ QMOW ASSIST STRUCTURE AND RESPONSIBILITIES

1. NAV TEAM:

The Nav Team is Red Cedar's primary navigation bill for restricted waters/high traffic volume areas. Specifically, for major ports including Hampton Roads, Baltimore, and Philadelphia the Nav Team will be set for the transit in and out of port. The Nav Team will be set and on the bridge 3 NM north or east ~~of~~ ^{at} Thimble Shoal, ^{3 NM west of} the Monitor/Merrimac bridge Tunnel and whenever ^{WT} the ship gets underway from Craney Island. In addition to the qualified DWO the Nav Team consists of the following members:

A. QMOW: Evaluates and plots fixes, both mechanically and visually. Passes navigation recommendations and reports to the conning officer in a clear positive manner. In instances where evaluator does not concur with actions taken by the conning officer, or his intended actions, he must make those actions and his disagreement to the Conning officer, qualified DWO, XO, and CO. In addition, coordinates Nav team, establishes visual and radar points to be used in each fix. Orchestrates turn bearing and range information.

B. RECORDER: Maintain all ship's logs including ship's bearing log, Ship's Log, Nav Data Sheet and Radio Log. Record objects used in each fix, fix data, and water depth. Establishes Comms with Nav team members. Announce "Standby" and "Mark" at times prescribed by the QMOW. Ensure fix data is also passed promptly to the QMOW.

C. BEARING TAKER: Observe the bearing or range to charted points prescribed by the QMOW at the instance of the recorder's mark. All bearings are to be observed as quickly and as accurately as possible observing the points abeam the ship first and points ahead or astern last. When turn bearings are assigned, the bearing to the assigned object shall be called out every degree starting 10 degrees before the turn bearing. Turn Ranges should be set as near abeam or abaft the beam as possible and the distance to the turn range called out every 100 yards from 2000 - 200 yds, every 50 yards from 200 - 50 yds and every 10 yards from 50 to 0 yds.

D. SHIPPING OFFICER: Observes contacts on radar and prosecutes them to determine CPA and risk of collision. Passes this information on to the OOD.

2. QMOW ASSIST:

The QMOW assist is a tertiary means of providing assistance to the QMOW on watch and the DWO; it consists of another QMOW on the bridge to help the QMOW on watch during complicated transits or evolutions. In different situations the QMOW Assist will be used to help keep the ship's logs, monitor ATONIS, or monitor danger information. Specifically, it shall be established 15 min before the ship passes within 300 yards of shoal water (including approaches to AtoN), whenever the fix interval is five minutes or less and at any time the CO, Navigator, or OOD directs.

3. ATON TEAM STRUCTURE:

While working AtoN the QMOW Assist will be established for all aids which lie within 300 yds of shoal water. When the aid lies within 75 yds of shoal water the QMOW Assist will be used to monitor danger ranges or bearings at a minimum of three minute intervals. During ALL AtoN evolutions the Operations Officer or QMIC will be on the bridge to monitor the evolution.

E. QMOW RESPONSIBILITIES

- Establish ship's position at assigned intervals.
- Make reports/recommendations to the OOD after each fix. receive acknowledgement from OOD.
- Maintain plot using symbology as in enclosure (4).
- Maintain a minimum of two DR's after each fix.
- Ensure that the turn range or bearing is plotted on the chart in addition to the DGPS fix as soon as possible on each leg.
- Maintain ship's log timely and completely using standard entries where applicable.
- Maintain ship's weather log and Nav Data form, all course changes greater than five degrees and all changes to the trackline.
- Plot a fix after every course change of five degrees.
- Comply with and carry out ship's daily routine ie standard pipes for standard evolutions and general announcements.
- Maintain ship's comms log, schedule, sign on, sign off, as per instructions in inside cover, log all comms, freqs, and times in Zulu.
- Ensure OOD is equipped as needed, same corrected chart as used on the plot, flash light, binoculars, etc.
- Send and receive all message traffic.
- Ensure all visual signals are displayed/received at prescribed times.
- Review Buoy Folder Checklist, Enclosure (5), and inform OOD of depth of water, chain length, sinker size, and nearest shoal water in degrees true and range.

- QMOW is the MMA of the bridge.
- As MMA ensure the bridge is in a tidy condition at ALL times and ensure a thorough cleanup is done after the ship moors up.

F. QUALIFICATIONS OF QMOW

- The QMOW shall be qualified in the following positions using Red Cedar JQR and PQS as given by the Training Officer and the Operations Officer.
 - A. Bearing Taker/ Bearing Recorder
 - B. Radio Talker
 - C. QMOW at anchor
 - D. Helm/Lookout
 - E. Sound Powered Phone Talker

G. MAINTENANCE OF THE STANDARD BEARING BOOK

1. Depths are recorded in feet, but if taken by fathoms or lead-line they shall be noted as such in the block with the sounding written. Other than lead-line, all depths are measured in feet under the keel. DO NOT add the ship's draft to this measurement.

2. The Gyro Error shall be obtained daily and recorded at the top of each page and annotated as to how and when obtained. It shall be confirmed with visual ranges whenever possible.

3. Record variation and any changes in gyro error.

4. The chart number in use shall be recorded at the top of the initial page each day. Each shift of charts shall be noted in the first available blank line of the log.

5. The time zone and date will be indicated.

6. All bearings are true (T) unless indicated as relative (R) or magnetic (M).

7. All abbreviations made in accordance with Chart No. 1.

8. The bearing book shall be signed by the QMOW or bearing taker at the end of the Nav Detail or QMOW assist in the next available line.

9. The Standard Bearing Book shall be kept for three years after the date of the last entry as part of the ship's official records.

H. OOD/QMOW COORDINATION

The QMOW/Evaluator shall record and plot all fixes as per the standing orders and this instruction; He will make reports and recommendations to the Conning Officer after every fix. The Conning Officer shall acknowledge these reports and keep the QMOW appraised of course/speed changes and intentions. If the QMOW/PLOT feels the actions/intentions of the Conning Officer will stand the vessel into danger, he shall notify the CO and Conning Officer of that fact immediately. The QMOW/PLOT shall provide as much detailed assistance to the Conning Officer as possible and is to include as a minimum the following information:

Based on fix/ep at time ____ holds you ____ yds left/right of track. Recommend cse ____ to regain track at minute _____. Next aid to navigation is _____. Nearest hazard to navigation is _____ at _____ yds. _____ Yds to next turn at minute _____. Fathometer reads _____ ft beneath the keel and agrees/disagrees with charted depth. Set and drift is _____.

I. FIX HIERARCHY

- All possible means of navigation shall be used to obtain reliable positions utilizing the following methods in order of precedence:

- (a) DGPS: as per ref (b), DGPS is our primary means of fixing the ship's position: however, a true bearing or radar range shall be used and plotted on each fix to verify DGPS information. Furthermore, the turn information for the specific trackline of the ship shall be monitored and plotted for this purpose as the bearing or range.
- (b) Piloting:
 - Three bearing LOP's and a radar range.
NOTE: bearing spreads of 60 degrees are ideal.
 - If unable to obtain three visual bearing LOP's, a combination of visual and radar LOP's may be used. In areas where there are no charted objects available, minimum of three radar ranges are acceptable. All LOP's must be clearly identified in the bearing log.
 - When only two LOP's are achieved, the resultant position is to be deemed and reported as an "estimated position" and a fix is to be established ASAP.
 - Standard symbology is to be used for all

classification.

- While working the buoy:
 - (A) Fixes taken in 10 min intervals
 - (B) If the buoy is within 75 yards of shoal water, or anytime the CO, OOD or Navigator directs, a danger bearing or range set up and monitored.
 - (C) Depth taken from the focsle passed up to the bridge before the buoy is set if depth is less than 40 feet. If greater than 40 feet use the depth off of the fathometer and pass down that depth to the focsle.

N. STANDARD COMMANDS

- Standard helm commands are to be used in accordance with Enclosure (6).
- Standard Engine Order and line commands are shown in enclosure (7) and (8) respectively.

O. RISK ANALYSIS

- A risk analysis shall be done using Enclosure (2) at each daily work brief and each evolution out of our normal operations. Copies of these shall be forwarded to the Navigator for proper record keeping.
- The risk analysis will be performed by all personnel involved.

P. OPERATIONAL CHECKLISTS

- Prior to the getting underway the underway checklist shall be completed. Examples of this checklists is in Enclosures (10). Completed checklists will be forwarded to the Navigator for proper filling.

Q. NAVIGATIONAL BILLS

- The following bills are required to be used on Red Cedar:
 - (A) Special Sea Detail
 - (B) Anchoring
 - (C) Mooring
 - (D) QMOW Assist
 - (E) Navigation Team
- The duties and responsibilities of each member is annotated on the WQSB.

R. ELECTRONIC CHARTING PROGRAMS

- There are two electronic charting programs onboard Red Cedar. These are the Captain and GDOC. Both of these programs

use DGPS for input and can be relied upon as a secondary means of fixing the ship's position. OOD's and QMOW's should practice transits without electronic charting systems running to continue to hone skills and not become too dependent on any one means of navigation.

TRIP BRIEF CHECKLIST

- _____ 1. Assignment of navigation team stations including review of duties.
- _____ 2. Review of charts and intended track.
- _____ 3. Chart shifts.
- _____ 4. Planned fix interval, *max 30 min, min 15 min*
- _____ 5. Maximum allowable deviation from track.
- _____ 6. Speed of advance and maximum safe speed.
- _____ 7. Buoyage system.
- _____ 8. Navigation equipment status.
- _____ 9. Hazards to navigation.
 - (A) Danger bearing/ranges.
 - (B) Danger sounding.
 - (C) Navigation warnings.
 - (D) Bridge vertical clearance.
 - (E) Bridge signals and radio capability.
- _____ 10. Areas where cutter can divert to anchor in emergencies.
- _____ 11. Anticipated traffic.
- _____ 12. Traffic separation schemes.
- _____ 13. Port or Vessel Traffic System (VTS) requirements.
- _____ 14. Environmental considerations.
 - (A) Tides
 - (B) Currents
 - (C) Winds
 - (D) Precipitation
 - (E) Visibility
- _____ 15. Demarcation lines (Inland/Int. Rules of the Road).
- _____ 16. Communication requirements.
- _____ 17. Mooring or anchoring arrangements.

NAVIGATOR: _____

ENCLOSURE (1)

RISK WORKSHEET

EVENT/EVOLUTION

SUPERVISION

PLANNING

CREW SELECTION

CREW FITNESS

ENVIRONMENT

EVOLUTION COMPLEXITY

TOTAL

— — — —

0	23	44	60
10	20	30	40
50	60		
GREEN (low risk)		AMBER (caution)	
		RED (high risk)	

ENCLOSURE (2)

RED CEDAR NAVIGATION BRIEF

Date: _____

Intentions: _____

Using Chart(s): _____

POSTIONS: Conn: _____ ERRORS: Gyro: _____

Deck: _____ Radar: _____

Nav Plot/Eval: _____

Logs: _____

Radar: _____

Bearing Tkr: _____

Shipping: _____

WEATHER: Temp: _____ Vis: _____

Winds: _____ Bar: _____ (r/f/s)

TIDES

_____ | _____ | _____ | _____ | _____

CURRENTS

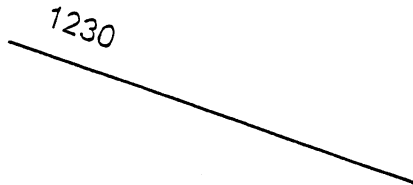
_____ | _____ | _____ | _____ | _____

COMMENTS: _____

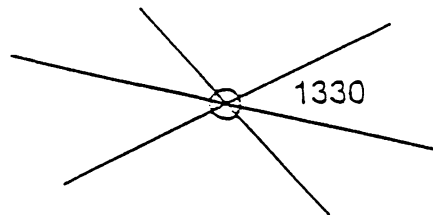
Navigator: _____ Captain: _____

ENCLOSURE (3)

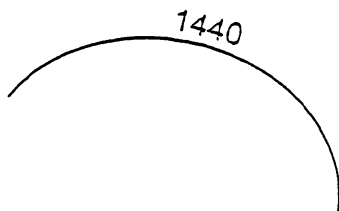
NAVIGATION PLOTTING SYMBOLS



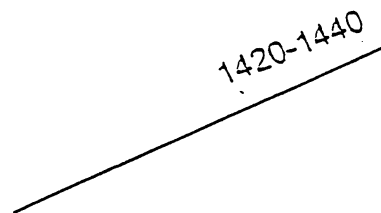
Single Line of Position
(Same for visual and electronic LOP)



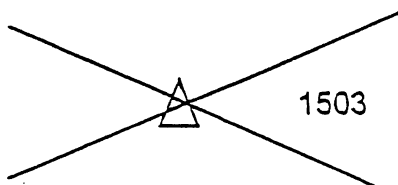
Visual Fix (See Note 1)



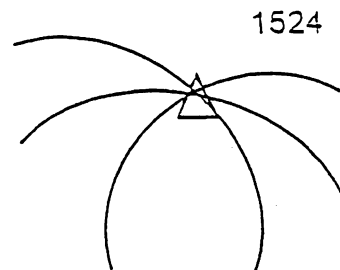
Distance Arc or Range



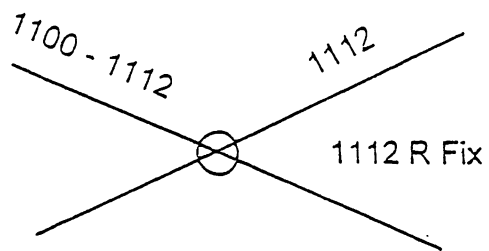
Advanced LOP
Original Time and Time LOP Advance To



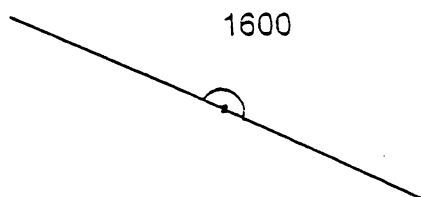
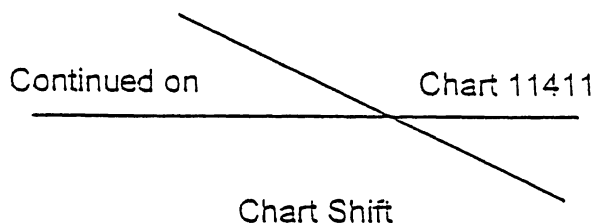
Electronic Fix



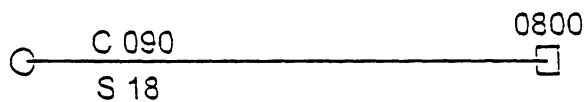
Electronic Fix
Using Radar Ranges



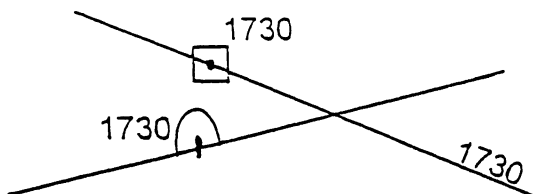
Running Fix



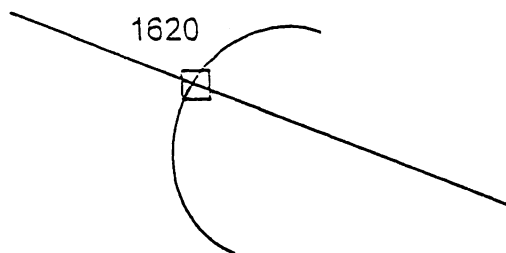
DR Position. Semicircle with time



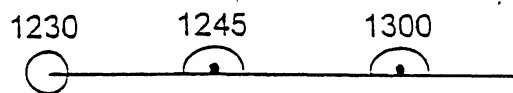
Intended Trackline
Only between a Fix and an EP



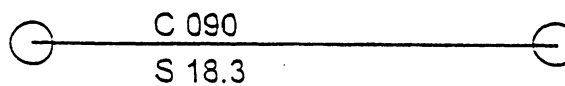
Estimated Position (EP) Based
on DR Position and Single LOP



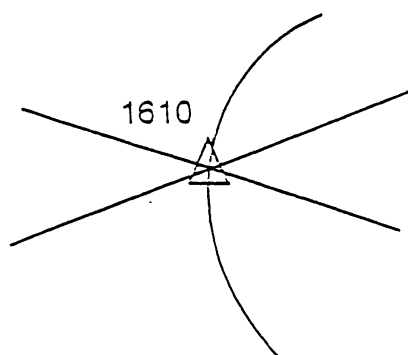
EP Based on Two LOPs. Three LOPs
are required to establish a fix (other than LORAN).



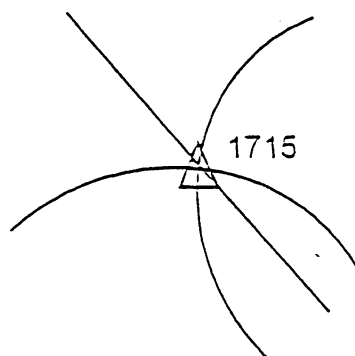
DR Trackline



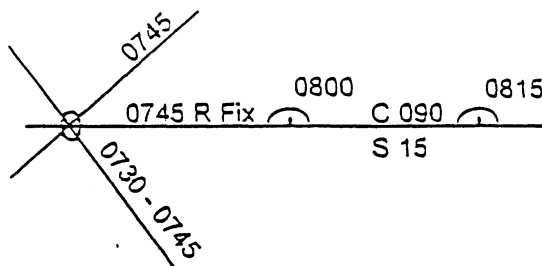
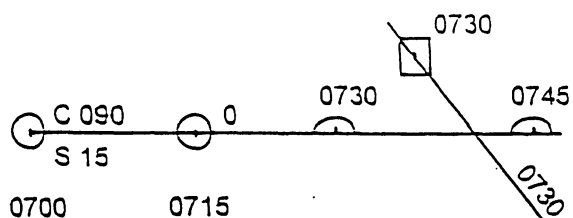
Actual Trackline.
Use Only Between Two Fixes



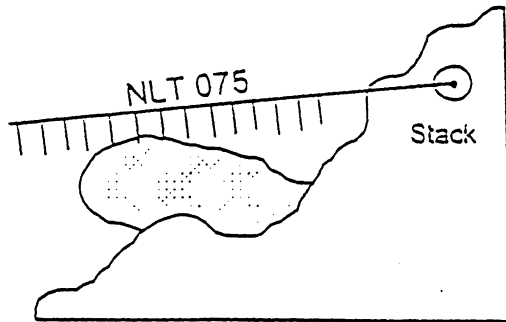
Two Visual Bearings
and One Radar Range



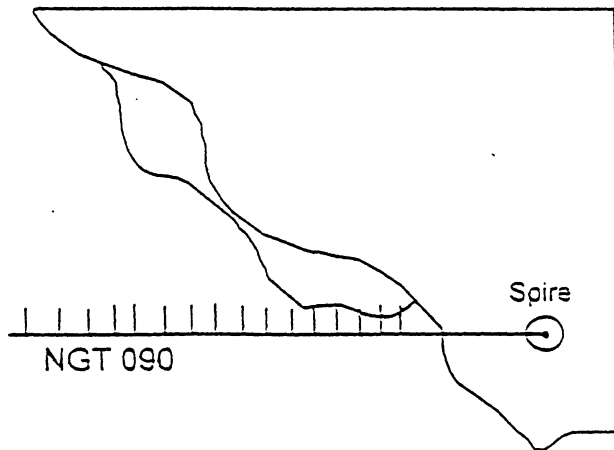
Two Radar Ranges
and One LOP (Visual)



Examples of a DR Trackline with an EP and a DR Trackline with a Running Fix



Danger Bearing No Less Than 075 Deg T



Danger Bearing No Greater Than 090 Deg T

BUOY FOLDER CHECKLIST

Aid Name _____

Pre-underway AtoN folder review

A. Compare work schedule with dates on AWR.			
B. Compare Light List, ATONIS and chart. Note discrepancies.			
1. Light Characteristic, color and Nominal Range. 2. Aid name and Light List Number. 3. Position			
C. Verify Aid Data in AAPS for the following.			
1. Position. 2. Chain length. 3. Accuracy classification. 4. Aid Number/LLNR.			
D. Review remarks section of APR/AWR. Note any unusual information.			
E. Insure the following is in the folder.			
1. Any msg traffic concerning the aid. 2. OPORDERS. 3. DREF. 4. Mooring Selection Guide 5. Accuracy Classification Worksheet. 6. SIF	Name and Date		
Notes:			

NEAREST SHOAL (12 FT) _____ YDS AT _____ T

NEAREST SHOAL (08 FT) _____ YDS AT _____ T

DANGER BEARING NLT NGT _____ T TO _____

DANGER RANGE NLT NGT _____ YDS TO _____

ENCLOSURE (5)

HELM COMMANDS

Standard phraseology governing orders to the helmsman is required to ensure orders are understood and promptly executed. The helmsman shall repeat each command word-for-word and shall report when the ordered action is complete. The conning officer shall acknowledge the helmsman's responses with "VERY WELL". The following commands shall be employed.

COMMAND	ACTION
RIGHT(LEFT) STANDARD (FULL) RUDDER	Apply the ordered rudder. Standard rudder is the amount required to turn the ship on its tactical diameter. The rudder angle varies with different speeds and from ship to ship. Full rudder is normally the amount required for reduced tactical diameter.
RIGHT (LEFT) ### DEGREES RUDDER	Apply the ordered rudder. This order should be followed by a new course for the helmsman to steer, such as "STEADY ON COURSE 256" or another rudder command. If no course is specified the helmsman shall call out the heading at 10 degree increments, such as "PASSING 150, PASSING 160", until a course is ordered by the conning officer.
INCREASE YOUR RUDDER TO ### DEGREES	Increase the rudder angle the amount specified to cause the ship to turn more rapidly. This command should also be followed by a course to steady on or another rudder command. This order should be followed by a new course for the helmsman to steer or another rudder command. If no course is specified the helmsman shall call out the heading at 10 degree increments until a course is ordered by the conning officer.
EASE YOUR RUDDER/EASE YOUR RUDDER TO ### DEGREES	Decrease the rudder angle by half the amount currently applied or by the amount ordered. This command should also be followed by a course to steady on or another rudder command. This order should be followed by a new course for the helmsman to steer or another rudder command. If no course is specified the helmsman shall call out the heading at 10 degree increments until a course is ordered by the conning officer.
RUDDER AMIDSHIPS	Place the rudder at zero degrees.
MEET HER	Use the rudder as necessary to check, but not stop, the ship's turn.

ENCLOSURE

COMMAND

ACTION

**STEADY, STEADY AS
SHE GOES, STEADY
ON COURSE ####**

Steer the course on which the ship is currently headed or the ordered course. If the ship is turning and the command STEADY or STEADY AS SHE GOES is given, the helmsman notes the heading and brings the ship back to the heading. The helmsman should then reply "STEADY; COURSE ####".

MIND YOUR HELM

Pay attention. This order is given to call the helmsman's attention to the ordered command.

SHIFT YOUR RUDDER

Move the rudder to the same angle in the opposite direction from where it is currently ordered. This order may be given only when a specific rudder angle is in effect.

**NOTHING TO THE
RIGHT (LEFT) OF
COURSE ####**

Steer nothing to the right (left) of the course specified.

**HOW'S YOUR
RUDDER**

This is a query from the conning officer to ascertain the current rudder placement. The helmsman replies, "MY RUDDER IS RIGHT(LEFT) ## DEGREES".

MARK YOUR HEAD

Respond "MY HEAD IS ####".

COMMAND

The helmsman's response to the conning officer if he/she did not hear a command, misunderstood a command or believes a command is improper.

STEER ON

The helmsman steers on a range or object identified by the conning officer.

ENGINE ORDER COMMANDS

1. When the engine order commands are utilized aboard RED CEDAR it will most likely be as a result of a casualty to the controlled air pressure system which operates the pilot house control system. There are two ways to communicate engine commands to the engine room, sound powered phone or emergency bell system.

2. Engine order commands via the sound powered phone are always given in the following order:

a. ENGINE: which engine is to be used. If both engines are to be used, the command is "All ahead, back, or stop".

b. DIRECTION: ahead, back, or stop.

c. AMOUNT: 1/3, 2/3, STANDARD, FULL.

3. RED CEDAR standard engine commands:

PITCH	SHAFT RPM	SPEED
1/3 = 30%	300	3 kts
2/3 = 50%	300	6 kts
STANDARD = 100%	300	9.9 kts
FULL = 100%	425	12.4 kts

4. Emergency Call Bell Code - In the event that pilot house control is lost, engine pitch/RPM may be controlled from the engine room via the emergency call bell system. Call bell commands are as follows:

- 1 BELL Ahead 1/3
- 2 BELLS 0% pitch (stop)
- 3 BELLS Back 1/3
- 4 BELLS Full speed (in present direction of rotation - 425 RPM)

ENCLOSURE (7)

LINEHANDLING COMMANDS

The following are the standard linehandling commands for mooring evolutions

COMMAND	ACTION
PUT OVER/PASS (line number)	Pass the specified line to the pier and provide enough slack to allow linehandlers to place the line over the bitt, cleat or bollard.
HOLD (line number)	Do not let anymore line out even though the risk of parting may exist.
CHECK (line number)	Hold heavy tension on the specified line but render it as necessary to prevent parting the line.
SURGE (line number)	Hold moderate tension on a line but render it enough to permit movement off the ship.
EASE (line number)	Let a line out until it is under less tension, but not slacked.
SLACK (line number)	Take all tension off a line and let it hang slack.
TAKE THE SLACK OUT OF (line number)	Take all the slack out of a line, but do not take a strain.
SHIFT (line number)	Shift a line to the specified location.
HEAVE AROUND ON (line number)	Take a strain on a line with the capstan.
TAKE (line number) TO POWER	Take the specified line to the capstan.
SINGLE UP (line number)	Take in all but one bight so there remains a single part to the specified line. May also be used to single up all normal mooring lines.

ENCLOSURE (8)

COMMAND

ACTION

DOUBLE UP (line number)

Pass an additional bight on the specified line so there are three parts to the line. This may also be used to double up all normal mooring lines. Cutters without sufficient mooring line for three parts should just pass the bitter end of the single up to the pier.
Stop taking a strain on a line with capstan.

**AVAST or AVAST
HEAVING
TAKE IN** (line number)

Allow the pier linchandler enough slack to take the line off the fitting and bring the line aboard. Used when secured with your own line.

CAST OFF (line number)

When secured with your cutter's own mooring lines, this is a command for the linchhandlers on the pier or other ship to throw off your lines. When you are secured with another ship's lines, it means to cast off the ends of their lines.

ENCLOSURE (8)

ANCHOR COMMANDS, TERMS, AND REPORTS

COMMANDS FROM BRIDGE

ANCHOR READY FOR LETTING GO - means test anchor windlass, ensure anchor is free in hawsepipe, set brake, disengage wildcat and remove all but one chain stopper. Usually done when sea detail is set.

WALK ANCHOR OUT TO - means lower the anchor with power from the anchor windlass. Used when anchoring in deep water when dropping the anchor would put extreme strain on chain and gear. Usually walk out the anchor to within 5 or 6 fathoms of the bottom or to the waters edge to be ready for use in an emergency.

STAND BY - release the brake on the anchor windlass, prepare to cast off chain stopper, and let go with the anchor ball.

LET GO - drop the anchor by casting off chain stopper.

MAKE THE ANCHOR READY FOR VEERING - set the brake, pass the stopper, and engage the pawl, engage the wildcat.

MAKE BOTH ANCHORS READY FOR SEA - hawse the anchors, set the brake, pass the stopper, engage the pawl then disengage the wildcat from the capstan.

VEER CHAIN - done by letting the weight of the chain pull out more chain. Can be given as "VEER CHAIN TO 3 SHOTS AT THE WATER'S EDGE," for example. A more common method may be to veer chain by powering down, windlass engaged, brake released.

SET THE STOPPER - put stopper in position to hold chain. Done when chain has veered to proper scope or when anchor is stowed in hawse pipe.

HEAVE AROUND - engage anchor windlass wildcat and commence recovering, for example. **HEAVE AROUND, HEAVE RIGHT IN (OR HEAVE RIGHT-UP)** - bring chain all the way in and hawse the anchor.

SHORT STAY - anchor is ready to break out of the bottom with all excess chain recovered. Order may be given to **HEAVE AROUND TO SHORT STAY**. Normally used in preparation for getting underway. When ready to get underway, the command is to **BREAK OUT THE ANCHOR**.

HOW DOES THE ANCHOR TEND - request for information on the direction tending and strain on the chain.

AVAST HEAVING - stop recovering anchor chain. Stop anchor windlass.

WEIGH ANCHOR - Break out the anchor.

Sample of information provided to fo'c'sle by bridge in preparation for anchoring:

SHIP WILL ANCHOR IN 9 FATHOMS OF WATER TO A MUD (CLAY, CORAL, SAND, ETC.)
BOTTOM. SET THE (PORT/STARBOARD) ANCHOR WITH 3 SHOTS TO THE WATERS EDGE.

ENCLOSURE (9)

REPORTS FROM THE FO'C'SLE

ANCHOR TENDS 10 O'CLOCK WITH A HEAVY STRAIN - example of a report from foc'sle. Direction given in clock time with bow at 12 o'clock. Strain given as heavy, medium, light or chain is up and down.

ANCHOR IS UP AND DOWN - Anchor flukes have broken out of the bottom but the anchor crown is still resting on the bottom. Sometimes referred to as anchor underfoot or apeake.

ANCHORS AWEIGH - Anchor is free of bottom. If ship had been anchored with one anchor, at this point it is considered underway.

ANCHOR IN SIGHT - when anchor is in view.

ANCHOR IS CLEAR - after anchor is in sight given to indicate anchor is free of wire, cable line, chain, etc.

ANCHOR IS FOULED - anchor is hooked in something such as line or chain and not ready for stowing.

ANCHOR IS HAWSED - anchor shank is in hawsepipe with flukes in position against ships side.

ANCHOR IS READY FOR SEA - anchor is properly secured with chain stopper and windlass brake holding it tightly in hawse. Buckler plates are in place over hawse pipes.

ANCHOR BUOY IS WATCHING - buoy which is secured to anchor crown is floating on surface of water to mark the location of the anchor.

Sample of periodic report from foc'sle:

TWO SHOTS AT WATERS EDGE, TWO O'CLOCK HEAVY STRAIN. (Could be two shots in hawsepipe, on deck, or in wildcat according to where marking is at time of report).

ENCLOSURE (9)

BRIDGE UNDERWAY CHECK OFF LIST

1 HOUR PRIOR

DATE _____

- ____ 1. "COMMENCED PREPARATIONS FOR GETTING UNDERWAY: DRAFTS
FWD: _____, AFT: _____.
- ____ . ARRANGE FOR LINE HANDLERS THROUGH SOPA.
- ____ 3. LAYOUT CORRECTED CONNING, NAVPLOT CHARTS.
- ____ 4. LAYOUT PLOTTING INSTRUMENTS.
- ____ 5. SHINE BRASS CLEAN WINDOWS.
- ____ 6. BUOY FOLDERS READY FOR BOUY OPS.
- ____ . CLEAR STANDING WATER FROM AWNINGS, WIPE DOWN HANDRAILS.
- ____ 8. TEST NAVIGATION LIGHTS, SEARCHLIGHTS AND MAG COMPASS LIGHTS.
- ____ 9. ENERGIZE RADARS AND ELECTRONICS, TEST FOR PROPER OPERATION,
DTERMINE RADAR ERROR.
- ____ 10. DETERMINE GYRO ERROR, _____ POST IT, ZERO OUT THE REPEATERS,
CORRECT HEADING ON AFTER STEERING REPEATER.
- ____ 11. LAYOUT BRIDGE OPTICS.

45 MINUTES PRIOR

- ____ 1. TURN ON GPS, ALLOW TO STABALIZE.
- ____ 2. INIATILIZE BEARING BOOK AND RADIO LOG, MAKE APP ENTRIES.
- ____ 3. TIME CHECK ON GPS, SET BRIDGE CLOCKS, TIME TICK.
- ____ 4. IF DARK TEST FLASHLIGHTS.
- ____ 5. COMMS CHECK WITH ENGINE ROOM.

30 MINUTES PRIOR

- ____ 1. TEST SHIPS ALARMS AND WHISTLE.
- ____ 2. UPDATE BRIDGE STATUS BOARD.
- ____ 3. OOD TEST OF PILOTHOUSE CONTROL, W/CO'S PERMISSION. MAKE PIPE.
- ____ 4. TEST BOW THRUSTER, INFORM EOW OF RESULTS.
- ____ 5. TURN ON STEERING AMPLIFIER, RUDDER ANGLE INDICATOR, CONDUCT

ENCLOSURE (10)

STEERING TEST. ENSURE STEERING CONTROL IS SET TO PIERSIDE
BRIDGEWING.

___ 6. MAKE YOKE PIPE. OPS ___ ENG ___ DECK ___.

20 MINUTES PRIOR

- ___ 1. DIM ALL BRIDGE LIGHTS AT NIGHT.
- ___ 2. CALL OPS IF NO PILOTHOUSE CONTROL CHECKS ARE DONE.
- ___ 3. INITIALIZE NAV DATA SHEET.

15 MINUTES PRIOR

- ___ 1. RIG SHIP'S CALL SIGN, OSCAR FLAGS AND DAYSHAPES.
- ___ 2. PLACE ELECTRONIC CHART SYSTEM ON LINE, READY FOR TRANSIT.
- ___ 3. SHIFT THE WATCH WITH THE OOD'S PERMISSION.
- ___ 4. ENSURE ALL SHIP'S LOGS, DC CLOSURE LOGS AND WATCHSTANDERS
REFERENCE BOOK, NAME BOARD AND SUPERSET PHONE ARE BROUGHT
TO THE BRIDGE.
- ___ 5. PIPE QUARTERS.
- ___ 6 PIPE SPECIAL SEA DETAIL OR ANCHOR DETAIL - AFTER QUARTERS.

10 MINUTES PRIOR

- ___ 1. DRAFT UNDERWAY MESSAGE INCLUDING ESTIMATED TIME OF RETURN. IF
SCHEDULED TO BE U/W FOR MORE THAN 1 DAY , REQ HARD COPY TRAFFIC.
INFORM GROUP OF ETR.
- ___ 2. LOG" COMPLETED PREPARATIONS FOR GETTING UNDERWAY."
- ___ 3. REQUEST CO'S PERMISSION TO GET THE SHIP UNDERWAY.

5 MINUTES PRIOR

- ___ 1. MAKE SECURITE CALL, LOG IT, INFORM OOD OF TRAFFIC STATUS.
- ___ 2. LOG SECURED THE SPECIAL SEA DETAIL, IF LIGHTS ARE ENERGIZED,
LOG LIGHTING CHANGE.

ENCLOSURE

