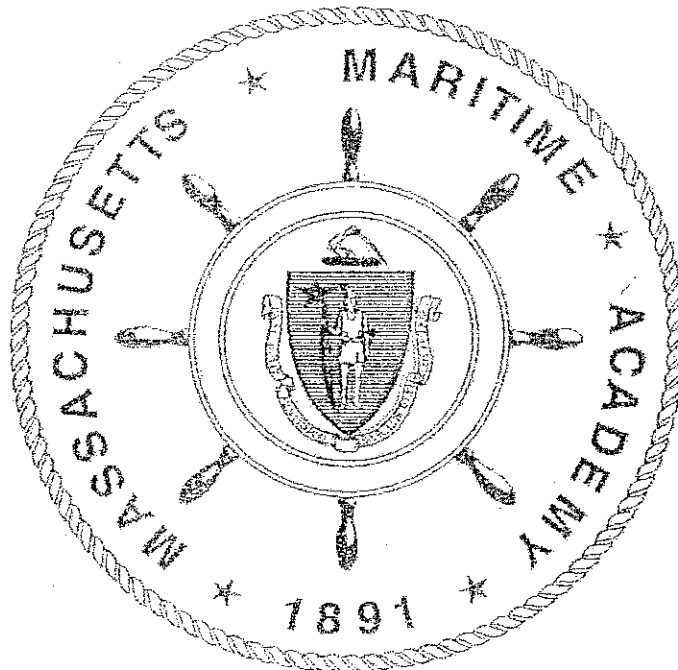


2012 CRUISE TRAINING PROGRAM

Department of Marine Transportation

FIRST CLASS *Celestial Navigation* *STCW Assessments*



A Second 100 Years of Maritime Excellence
2012 Training Voyage of U.S.T.S. Kennedy

Prepared By:

Captain James Fitzpatrick

Deck Training Coordinator

Department of Marine Transportation

Cadet

Division

Berthing Location

MT Celestial Navigation Project --- Sea Term 2012

The 2012 Celestial portion of your Sea Term Grade will be composed as follows:

Celestial Mid-Term	10% of final grade
Celestial Final Exam	15% of final grade
Cel-Nav Project & Assessments	25% of final grade

In order to ensure that you are ready for your assessments and to assess other skills you must correctly complete, in the appropriate order, all the practice items that are on the project sign-off sheet. If the work is incorrect or improperly done it will not constitute a sign off for that practice item. (Practice items are the ones with an PRAC in the grade column).

The original completion sheet will be kept by the Training Officers in a binder in the navigation lab. One copy will be given to you at the start of the Sea Term for your own record keeping.

All practice (Non-STCW) sights must be witnessed and initialed by either a Watch Officer or an Assessment Officer when taken. This merely indicates that the student took his/her own sight.

All work must be entered properly into the Navigation Journal and then submitted to the Cel-Nav Training Officer(s) for review before proceeding further. You must follow the instructions and formats given to you with this manual. These officers will be available in the Fwd / Aft Nav Labs according to posted schedules.

Every cadet in the training division is required to be present for morning and evening stars every training day unless cancelled by Capt. Mackey, Capt. Mayhofer or Capt. DeCastro. No exceptions!

All STCW sights must be witnessed by an Assessment Officer ONLY and worked out immediately under their observation. Watch officers cannot witness STCW assessments.

Sign-off reviews by the Cel-Nav Officers will give priority to the current Training Division cadets, followed by order of sign-up. **You must get work signed off within 24 hours of your sight.**

All cadets in the Training Division doing celestial navigation shall remain out of the bridge, utilizing the bridge decks to port/starboard from the bridge wings aft and including the flying bridge deck.

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GENERAL:

- Course, Speed and DR Position of the vessel MUST be included with EVERY ENTRY in the Navigational Journal.
- One DR on the top of a page for observations at three different times is not acceptable.
- Work must be correct for credit. If work is poor it will be rejected and cannot be used later after it is corrected.
- Work must be complete for credit. It is at the instructor's discretion to allow you to take back some work to finish, if it was submitted prematurely. However, it could be rejected and not allowed to be used again.
- AM and PM star observations are not optional for the training division. When the candidate's division is assigned to Training, the candidate shall be in the Navigation Lab ready to observe morning/evening stars not later than 30 minutes before star time. Should a candidate be late or absent for any reason, the candidate will be placed on report and/or restricted in port. Proper uniform must be worn at star time (both morning/evening).
- Any azimuths or amplitudes must have the compass record (back of the book) section (in the Navigational Journal) completed in order to be accepted.
- Cadets not in sight of Captains Mackey, DeCastro or Mayhofer when taking a sight must have the sight signed off by one of the watch officers. This only signifies that the cadet took a sight and recorded that data. This can only be done for the "Practice" categories (the white lines on the matrix).
- All STCW Assessments must be completed entirely before Captain's , Mackey, DeCastro or Mayhofer or their assistants in the Fwd Nav Lab, as these must be done under controlled conditions.

PLOTTING SHEETS IN GENERAL:

- ALL WORK must be neat and legible! Anything else will NOT be signed off.
- LABEL all plotting sheets with name and date in upper right hand corner.
- All plots must include course line (Labeled with course and speed) and DRs for the times in the area of the sights.
- All plots must be accompanied by GPS position and DRs at time of LOP or celestial fix.
- If a running fix is done, or if a star fix is obtained, write the fix's Time and Latitude and Longitude on the sheet, along with the latitude and longitude of the GPS for the same time.
- For star time, advance or retard all lines of position to one time. This STAR TIME will usually be assigned by the First Class Training Officer each day and posted on the Dry Erase Board in the Cadet Chart Room. DO NOT compute a star fix for any other time without special permission to do so by Captain's , Mackey, DeCastro or Mayhofer.

1. Practice: Computation of Sunrise:

Make sure proper DR was used for time of event.
Use second estimate if necessary

2. Practice: Computation of Sunset:

Make sure proper DR was used for time of event.
Use second estimate if necessary

3. Practice: Computation of Civil Twilight:

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Make sure proper DR was used for time of event.
Use second estimate if necessary

4. Practice: Computation of GHA and LHA of Aries

Make sure proper DR was used for time of event.
Use second estimate if necessary.
Time Diagram required to show GHA Aries and LHA Aries.
Azimuths and altitudes of at least five stars must be listed.
Sketch showing relative location of each to vessel must be included.

5. STCW ASSESSMENT OICNW 1-1A Adjust a sextant - as per your Control Sheet, student must demonstrate the proper adjustment of the sextant to a designated officer. This assessment must be done before shooting any sunlines or star LOPS.

6. Practice: AM or PM azimuths

Two practice azimuths any combination of morning and afternoon.
Must be completed prior to attempting the next practical assessment.
Azimuths must have at least a two hour period between successive azimuths.

7. STCW ASSESSEMENT OICNW 1-5F Azimuth of Sun -- As per your Control Sheet, student must demonstrate the proper taking of an azimuth, AM or PM, and demonstrate the ability to record the time of the observation accurately. There are no calculations involved in this assessment.

8. Practice: AM or PM Amplitudes

- Record which repeater used.
- Record which bearing circle used.
- Record that the repeater was checked against master gyro (there is no such thing as "repeater error").
- Work determining gyro error shall be shown on the page with azimuth or amplitude calculations.
- One amplitude must be taken with lower limb 2/3 diameter above the horizon, and one amplitude with center of sun on visible horizon. Due to lack of gyro repeaters and azimuth circles, students can "share" the observations of AMPLITUDES ONLY provided that, all available repeaters are being used and the students are physically present when the observations occurred. Otherwise, observations by someone else cannot be used.
- The compass comparison section in the back of the navigation journal must be complete for credit.

9. Practice: AM or PM Sunlines

- For each "sunline" requirement, take two sights in quick succession, within a minute or two of each other.
- Compute and plot both sunlines for their respective times.
- If there are large differences between the two investigate why. Correct any mistakes if possible and re-plot if necessary. DO NOT SUBMIT THEM FOR CREDIT IF THEY DO NOT WORKOUT WELL.
- Sunlines submitted for credit must be plotted on a plotting sheet with the following:

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- DR track started from a previous fix properly labeled;
DR position for the time of the sunlines;
GPS position for time of sunlines for assessment purposes.
- Label all sunlines properly.
- Draw appropriate time diagram.
- Date all plotting sheets in upper right hand corner with date of observation.
- Must be completed before attempting to complete OICNW 1-1B that follows.

10. STCW OICNW 1-1B Measure Altitude of Sun

There are no calculations in this assessment.

Student(s) must take altitude with instructor and get approximate values as instructors.

Student(s) must determine exact UTC of measurement.

11. Practice: PRE COMPUTE LAN -

- Estimate time of LAN using Meridian Transit method and estimate time of LAN using GHA method for a second estimate.
Pre-calculate Hs of LAN.
- Meridian Diagram **REQUIRED** for LAN computation NO EXCEPTIONS!
- OBSERVE LAN.
- Plot LAN observation on Plotting sheet with the following:
DR track started from a previous fix properly labeled;
DR position for the time of LAN;
GPS position for time of LAN for assessment purposes.
- Advance or Retard LAN to 1200 and label properly.

12. STCW OICNW 1-1D Measure Altitude of Sun at LAN

There are no calculations in this assessment.

Student(s) must take altitude with instructor and get approximate values as instructors.

13. Practice: RUNNING FIX AT Noon

You are allowed to utilize sun lines and LANs already done for that day.

Plotting sheet shall have DR track, with DRs for time of each LOP.

After LAN is plotted, advance or retard latitude at LAN to 1200 ZT.

Advance the best pair of previous LOPs to 1200.

14. Practice: Azimuth of Planet or Star

Record which repeater used.

Record which bearing circle used.

Record that the repeater was checked against master gyro (there is no such thing as "repeater error").

Work determining gyro error and deviation shall be shown on the page with azimuth or amplitude calculations.

The compass comparison section in the back of the navigation journal must be complete for credit.

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15. STCW OICNW 1-5G Azimuth of any body at night

There are no calculations in this assessment

Student(s) must take azimuth with instructor and get approximate values as instructors.

Student(s) must determine exact UTC of measurement.

16. STCW OICNW 1-1G Measure altitude of three stars

There are no calculations in this assessment.

Student(s) must take altitude with instructor and get approximate values as instructors.

Student(s) must determine exact UTC of measurement.

Student(s) must get at least three stars correct out of the number they took.

17. Practice: AM or PM Star Fixes

- Time Diagram required to show GHA and LHA Aries.
- If there are large differences between any LOPs, investigate why and correct.
- Replot if necessary. DO NOT SUBMIT THEM FOR CREDIT IF THEY DO NOT WORKOUT WELL.
- Plotting sheet shall have DR track, with a DR position and a GPS fix at the time of the star fix.
- Fix position to be within Five Miles of Instructor's solutions.
- Minimum of three stars (each shot twice in quick succession), or five individual stars to be calculated and plotted.
- Stars to be advanced to a common time as determined by instructor.
- Must be completed before attempting to complete OICNW 1-1C that follows.

18. STCW OICNW 1-1C Three Star Fix

- Time Diagram required to show GHA and LHA Aries.
- If there are large differences between any LOPs, investigate why and correct.
- Replot if necessary. DO NOT SUBMIT THEM FOR CREDIT IF THEY DO NOT WORKOUT WELL.
- Plotting sheet shall have DR track, with a DR position and a GPS fix at the time of the star fix.
- All work will be monitored.
- Student will have 1-1/2 hours to determine a fix at a time designated by the examiner, based upon his/her star LOPs.

19, 20 and 21 are Paper plots/problems that will be given during the mid term on Exam Day one and will comply with the appropriate Control Sheets.

22. Practice: Determine Latitude by Polaris

- Time Diagram required to show GHA and LHA Aries.
- No plot necessary only final latitude.

23. Is a paper star fix problem that will be given during the final exam on Exam Day two and will comply with the appropriate control sheet.

MT Celestial Navigation Project -- Sea Term 2012

	Compltd First	Compltd Second	Attempt #1	Attempt #2	Attempt #3	Grade
	Initial & Date	Initial & Date	Pass/Fail Initial & Date	Pass/Fail Initial & Date	Pass/Fail Initial & Date	
1. Computation of Sunrise			N/A	N/A	N/A	PRAC
2. Computation of Sunset			N/A	N/A	N/A	PRAC
3. Computation of Civil Twilight			N/A	N/A	N/A	PRAC
4. Computation of LHA Aries			N/A	N/A	N/A	PRAC
5. Adjust a sextant OICNW 1-1A BEFORE ANY OTHER PRACTICAL ASSESSMENTS	N/A	N/A				
6. AM or PM azimuths BEFORE			N/A	N/A	N/A	PRAC
7. Azimuth of Sun OICNW 1-5F	N/A	N/A				
8. AM or PM Amplitudes			N/A	N/A	N/A	PRAC
9. AM or PM sunlines BEFORE			N/A	N/A	N/A	PRAC
10. Measure Altitude of Sun OICNW 1-1B	N/A	N/A				
11. Pre-computation of LAN BEFORE			N/A	N/A	N/A	PRAC
12. Measure altitude of Sun at LAN OICNW 1-1D	N/A	N/A				
13. Noon Running Fix: (Can utilize Sun lines and LANs already done)			N/A	N/A	N/A	PRAC
14. Azimuth of Planet or Star BEFORE			N/A	N/A	N/A	PRAC
15. Azimuth of any body at night OICNW 1-5G	N/A	N/A				

MT Celestial Navigation Project --- Sea Term 2012

	Compltd First	Compltd Second	Attempt #1	Attempt #2	Attempt #3	Grade
	Initial & Date	Initial & Date	Pass/Fail Initial & Date	Pass/Fail Initial & Date	Pass/Fail Initial & Date	
16. Measure altitude of at least 3 stars OINCW 1-1G BEFORE	N/A	N/A				
17. AM or PM Star Fix BEFORE			N/A	N/A	N/A	PRAC
18. Three Star Fix OICNW 1-1C	N/A	N/A				
19. MIDTERM - Advance 3 Sun Lines and Plot OINCW 1-1E	N/A	N/A				
20. MIDTERM - Azimuth of Sun OINCW 1-5FA	N/A	N/A				
21. MIDTERM - Azimuth of Night Body OINCW 1-5G(A)	N/A	N/A				
22. Determine Latitude by Polaris			N/A	N/A	N/A	PRAC
23. FINAL - Plot 3 LOPS for Star Fix OINCW 1-1 F	N/A	N/A				

MT Celestial Navigation Project --- Sea Term 2012

Assessment Scoring Methodology

	OICNW #	MMA #			
1	1-1A	21A101A	Adjust Sextant	Practical	Assessment
2	1-1B	21A101B	Measure Altitude of Sun	Practical	Assessment
3	1-1D	21A101D	Measure Altitude of Sun at LAN	Practical	Assessment
4	1-1G	21A101G	Measure altitude of at least 3 stars	Practical	Assessment
5	1-5F	21A110F	Azimuth of Sun	Practical	Assessment
6	1-5G	21A110H	Azimuth of any body at night	Practical	Assessment
7	1-1C	21A101C	Three Star Fix	Practical	Assessment
8	1-1E	21A101E	Advance three Sun Lines and plot	PAPER Exam	MID Term and Final
9	1-5F(A)	21A110G	Azimuth of sun	PAPER Exam	MID Term and Final
10	1-5g(A)	21A110I	Azimuth of night body	PAPER Exam	MID Term and Final
11	1-1F	21A101F	Plot 3 LOPS for Star Fix	PAPER Exam	Final Exam Only

Practical Assessments are either Pass / Fail. Pass would be needed to avoid an incomplete for the cruise.

In order to avoid being red-lined in ports of call you must complete the below numbers of the listed practical assessments:

- 5** - By the time we dock in Panama.
- 3** - Additional by the time we dock in Saint Thomas.

Your grade for the assessment part of this project will be based upon the following:

For each assessment you get a score based upon which attempt you pass it:

First attempt = 100

Second attempt = 85

Third attempt = 70

Fourth attempt = 0

You still have to complete the assessment before end of cruise, even if you take a 0 for a grade for one or more assessments.

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Failure to complete ANY of the 11 above assessments will result in an INCOMPLETE FOR THE SEA TERM

On the below pages you will find the STCW Control Sheets for each of the above assessments outlining the required performance standards.

For any questions about these assessments contact Capt. Mackey or Capt. Mayhofer.

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1A, MMA # 21A101A

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position.

TASK: Adjust a sextant

PERFORMANCE CONDITION: On a ship underway or in a laboratory with a clear horizon, given a standard marine sextant with a total index error of no more than 2'.

PERFORMANCE BEHAVIOR: Remove the adjustable sextant errors

PERFORMANCE STANDARD:

1. The errors are removed in the following order:
 - a. Perpendicularity;
 - b. Side error;
 - c. Parallelism

2. The index error is less than 1.0 minutes of arc.

COURSE: MT 4371 Sea Term IV - Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1B, MMA # 21A101B

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Measure the altitude of the sun

PERFORMANCE CONDITION: Aboard a ship at sea, given a standard marine sextant, a clear horizon, a visible sun, and an accurate time.

PERFORMANCE BEHAVIOR: Measure the altitude of the lower limb of the sun and accurately record the time of the observation.

PERFORMANCE STANDARD:

1. The altitude is within ± 1.0 minutes of arc, after correction for index error, as compared with the altitude measured by the assessor at the same time; and,
2. The time is within ± 1 second of UTC at the time of observation as determined by the assessor.

COURSE: MT 4371 Sea Term IV - Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1C, MMA # 21A101C

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Measure the altitude of at least 3 stars

PERFORMANCE CONDITION: Aboard a ship at sea, given a standard marine sextant, a clear horizon, a clear or partly cloudy sky, and an accurate time, during a single twilight.

PERFORMANCE BEHAVIOR: Measure the altitude of three stars and accurately record the times of the observation of each star. The candidate will then plot the three lines of positions and advance them to a common time.

PERFORMANCE STANDARD:

The resultant position of the star fix is within 1.5 nm of the ship's GPS position at the corresponding time, or within 3 nm of the assessor's solution taken during the same time.

COURSE: MT 4371 Sea Term IV – Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy TABLE A-II/1 Specification of Minimum Standard of Competence OFFICER IN CHARGE OF A NAVIGATIONAL WATCH Control Sheet

ASSESSMENT NO. OICNW-1-1D, MMA # 21A101D

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Measure the altitude of the sun at meridian passage (local apparent noon)

PERFORMANCE CONDITION: Aboard a ship at sea, given a standard marine sextant, a clear horizon, a clear or partly cloudy sky.

PERFORMANCE BEHAVIOR: Measure the altitude of the sun as it transits the meridian on which the vessel is located.

PERFORMANCE STANDARD:

The altitude is within ± 0.5 minutes of arc, after correction for index error, as compared with the altitude computed by the assessor, or within ± 1.0 minutes of arc, after correction for index error, as measured by the assessor at meridian passage.

COURSE: MT 4371 Sea Term IV – Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1E, MMA # 21A101E

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Celestial running fix

PERFORMANCE CONDITION: Aboard a ship at sea, or in a navigation laboratory, when given the assumed positions, the intercepts, azimuths, and times of three observations of the sun, and on a standard plotting sheet appropriate for the dead reckoning position.

PERFORMANCE BEHAVIOR: Advance all three lines of position to a common time.

PERFORMANCE STANDARD: The position of the running fix is within 1 nm of the assessor's solution.

COURSE: MT 4371 Sea Term IV -- Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-III/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1F, MMA # 21A101F

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Star Fix

PERFORMANCE CONDITION: Aboard a ship at sea, or in a navigation laboratory, when given the assumed positions, the intercepts, azimuths, and times of three star observations, and on a standard plotting sheet appropriate for the dead reckoning position.

PERFORMANCE BEHAVIOR: Plot the three lines of position and advance them to a common time.

PERFORMANCE STANDARD: The position of the star fix is within 1.0 nm of the assessor's solution.

COURSE: MT 4371 Sea Term IV - Deck

_____ Candidate	_____ SSN	
_____ Assessor	_____ Position	
_____ Vessel or Course	_____ License No.	_____ Date

MT Celestial Navigation Project -- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-1G, MMA # 21A101G

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Celestial Navigation* -- Ability to use celestial bodies to determine the ship's position

TASK: Measure the altitude of at least 3 stars

PERFORMANCE CONDITION: Aboard a ship at sea, given a standard marine sextant, a clear horizon, a clear or partly cloudy sky, and an accurate time, during a single twilight.

PERFORMANCE BEHAVIOR: Measure the altitude of three stars and accurately record the times of the observation of each star.

PERFORMANCE STANDARD:

1. The altitude is within ± 0.5 minutes of arc, after correction for index error, as compared with the altitude measured by the assessor at the same time; and,
2. The time is within ± 2 seconds of UTC at the time of observation as determined by the assessor.

COURSE: MT 4371 Sea Term IV -- Deck

_____ Candidate	_____ SSN	
_____ Assessor	_____ Position	
_____ Vessel or Course	_____ License No.	_____ Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-5F, MMA # 21A110F

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Magnetic & Gyro Compass* -- Ability to determine errors of the magnetic and gyro-compasses, using terrestrial means, and to allow for such errors

TASK: Azimuth of the sun

PERFORMANCE CONDITION: On a vessel, using a standard azimuth circle.

PERFORMANCE BEHAVIOR: Read the gyrocompass bearing of the sun and determine correct time of observation.

PERFORMANCE STANDARD:

1. The azimuth of the sun is read when the repeater is level.
2. The time of the reading noted and is within 1 second of UCT.
3. Reading obtained is within 0.5 of the assessor's observation.

COURSE: MT 4371 Sea Term IV – Deck

_____ Candidate	_____ SSN	
_____ Assessor	_____ Position	
_____ Vessel or Course	_____ License No.	_____ Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-5F (A), MMA # 21A110G

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Magnetic & Gyro Compass* -- Ability to determine errors of the magnetic and gyro-compasses, using terrestrial means, and to allow for such errors

TASK: Azimuth of the sun

PERFORMANCE CONDITION: On a vessel or in a laboratory, given the UTC, azimuth bearing of sun, assumed position, appropriate tables and almanac.

PERFORMANCE BEHAVIOR: Determine gyro compass error.

1. The true azimuth of the sun for the time of the reading is determined.
2. The gyrocompass azimuth is compared to the true azimuth and the gyro error is determined.
3. The solution is $\pm 0.5^\circ$ of the assessor's solution.

COURSE: MT 4371 Sea Term IV – Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project -- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-5G, MMA # 21A110H

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Magnetic & Gyro Compass* -- Ability to determine errors of the magnetic and gyro-compasses, using terrestrial means, and to allow for such errors

TASK: Azimuth of any body at night

PERFORMANCE CONDITION: On vessel at night, and using a standard azimuth circle.

PERFORMANCE BEHAVIOR: Read the gyro-compass bearing of any body.

PERFORMANCE STANDARD:

1. The azimuth of the body is read when the repeater is level.
2. The time of the reading noted and is within 1 second of UCT.
3. Reading obtained is within 0.5 of the assessor's observation.

COURSE: MT 4371 Sea Term IV -- Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date

MT Celestial Navigation Project --- Sea Term 2012

Massachusetts Maritime Academy
TABLE A-II/1 Specification of Minimum Standard of Competence
OFFICER IN CHARGE OF A NAVIGATIONAL WATCH
Control Sheet

ASSESSMENT NO. OICNW-1-5G (A), MMA # 21A110I

FUNCTION: Navigation at the Operational Level

COMPETENCE: Plan and conduct a passage and determine position

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: *Magnetic & Gyro Compass* -- Ability to determine errors of the magnetic and gyro-compasses, using terrestrial means, and to allow for such errors

TASK: Azimuth of any body at night

PERFORMANCE CONDITION: On a vessel or in a laboratory, given the UTC, azimuth bearing of body, assumed position, appropriate tables and almanac.

PERFORMANCE BEHAVIOR: Determine gyro compass error from celestial body.

1. The true azimuth of the body for the time of the reading is determined.
2. The gyrocompass azimuth is compared to the true azimuth and the gyro error is determined.
3. The solution is $\pm 0.5^\circ$ of the assessor's solution.

COURSE: MT 4371 Sea Term IV – Deck

_____	_____
Candidate	SSN
_____	_____
Assessor	Position
_____	_____
Vessel or Course	License No. Date