

Appendix B

Procedural Guide

For Checking *Navigation 09* Sight Folders

This Procedural Guide for *Navigation 09* Sight Folders contains the information required to check sight folders prior to submitting them to USPS Headquarters for grading. It should be given to the person designated by the squadron to check *Navigation 09* sights.

Additional copies of this guide should be copied and distributed as needed by the squadron. This procedural guide, including forms used in the *Nav 09* Sight Folder, may be downloaded from the Navigation page of the USPS Educational Department website.

Squadron Sight Checker

Your assignment is extremely important. How well you accomplish it may well determine the success or failure of your squadron's candidates. The Sight Folder requirements are part of the learning process; therefore, you are a vital complement to the course instructor. Be prepared to instruct, because in most cases this is necessary. Your interest in the candidate's submission of a successful sight folder should be every bit as keen as is the course instructor's concern that each candidate passes the open-book examination. A candidate cannot complete the Navigation course until a successful sight folder has been submitted. It is an equal partner in fulfilling the course requirements.

If you diligently strive to ensure that each candidate's sight folder is error free, both you and the candidate will be successful. If you make only a half-hearted attempt at checking the folder or simply "sign it off," you are not fulfilling your responsibility to the candidate and are missing an important opportunity to instruct. Check the folder as described below and note all errors. Return the folder to the candidate and point out the errors without explaining how to correct them. Let the candidate figure out the correct answers on his own and return the sight folder to you for a second review after he/she makes the corrections. If errors remain that the candidate still does not understand how to correct, go over them carefully and provide any explanation necessary. The student should then resubmit the folder to you for a final review before it is sent to Headquarters for grading by the Offshore Navigation Committee.

When the sight folder is returned from the national reviewing committee, go over it with the candidate. This procedure will prove helpful to both of you.

Getting Started

Do not write or make any marks on the sheets that will be submitted to Headquarters. It will save you a great deal of time and effort in note-taking and sheet-sorting if you require that each candidate furnish you with duplicate copies of each page in the folder. Mark these copies in any way that seems meaningful to you.

It is suggested that you advise the candidate to duplicate his/her entire sight folder after you pronounce it error-free. In the unlikely event that a sight folder is lost in the mail, the duplicate may be submitted to fulfill the sight folder requirements, with the National Committee Chairman's permission.

To aid in your work, samples of the most recent sight folder forms are included at the end of this guide. These include:

- Form NSK 09: Key to Sights Submitted
- Form NSV 08: Sight Verification (original)
- Form RSV 08: Sight Verification (re-submittal)
- Form ED-SL(08): Sight Log
- Form MT 07: Meridian Transit

Begin the checking process by ensuring that the sights are arranged in the order prescribed in the Key to Sights. This will also make it easier for you to follow the checklist provided on the reverse side of the Key to Sights.

There is no time limit as to when sights must be taken, providing a readable copy of the pertinent pages of the printed, hard-copy commercial or government edition of the *Nautical Almanac* is submitted with the Sight Folder for sights taken more than two years before the Sight Folder is received at Headquarters for grading.

There is no required time relationship between the submittal of the *Navigation 09* Sight Folder and the course examination date; these test elements may be completed in any order. There is no time limit to complete the *Navigation 09* Sight Folder, including re-submittals, as long as the test elements of this course are still available; this is normally until 18 months after a new *Navigation* course is released.

Sextant Observations and Sight Reductions

All sights must be reduced by the methods designated in the following paragraphs. A USPS Sight Reduction Form, *SR 96*, is required for all sights except the meridian transit sight; for the latter, the Meridian Transit Form, *MT-07*, must be used. Each sight reduction (except the meridian transit) must include a fully completed Time Diagram.

Sights Required

One (1) 2-body fix on any two bodies. Each body must be more than 10° from the observer's meridian. **Both** bodies must be reduced by **BOTH** the *Law of Cosines (LOC)* method and the *Nautical Almanac Sight Reduction (NASR)* method, and plotted by **both methods** on two separate *CLS* sheets. Each of the resultant LOPs must be within 3 nm from the observer's known or DR position.

Four (4) Lines of Position, one for each of the following bodies: the sun; the moon; a planet; a star. Any one of these four sights must be reduced and plotted by the *NASR* method; the sights for the other three bodies must be reduced and plotted using the *LOC* method. Each LOP must be within three nautical miles of the observer's known or DR position.

One (1) Sun Meridian Transit, whose time of transit must be pre-calculated. A run of at least three sights, covering a time span of not more than 60 minutes, must be taken bracketing the pre-calculated time of transit. The sight that is within 10 seconds of transit is to be reduced, using the Meridian Transit Form, *MT-07*. The calculated latitude must be within three nautical miles of the observer's known or DR latitude.

Sights to be Logged.

A minimum of 21 sights must be logged for a complete sight folder. These are:

- a. For the 2-body fix: one run of three sights on each body.
- b. For the sun, moon, planet and star LOPs: one run of three sights each.
- c. For the Meridian Transit: one run of three sights.

Special Sights

Back sights are allowed. The IC and dip corrections are applied to the hs and the sum subtracted from 180° to calculate ha .

Artificial horizon sights are *not* permissible.

The Check List

Your working document is the check list located on the reverse side of the NSK 09 form. If you follow it meticulously, ensuring that the sight folder complies with its provisions, the sight folder you are checking will be successful. This guide will lead you through the checklist in sequential order.

Specific NSK Requirements

The following items are specified on the reverse side of the NSK09 form. Follow these requirements carefully.

Forms:

Item #1: All sights in the sight folder must be reduced using the appropriate USPS *Sight Reduction* (SR96) form, and all LOPs or fixes must be plotted on the USPS *CLS-SAPS* plotting sheets provided with the student materials, or available for download from the USPS Navigation webpage. Computer generated Sight Reduction forms or plots may **not** be submitted in lieu of the original USPS forms.

Sight Log:

The Sight Log is a record of sights. Carefully study the sample log shown on the back side of form ED-SL(08) with typical entries in columns #1 through #14. Column #14 should be used freely by the candidate to explain any situation that might not be clear to the examiner, such as use of daylight savings time, dip short, etc.

Item #2: Ensure that at least a minimum of 21 sights are logged, with a run of at least three sights for each body observed.

- The number of each sight that is reduced and used to fulfill requirements must be circled on the log.
- Sights must be listed in chronological order in the log.
- For the two body fix: In the event intermittent cloud cover interrupts the sight-taking sequence when observing a body, it is permissible to switch to another body and complete its run of sights. Then, if the original body is visible and time permits, the interrupted run of sights can be completed. The sights must be numbered and logged in the order taken. The line on the sight log between alternating sights must be left blank. The term, "alternating sights," should be noted in the remarks column.

- A sight folder will be rejected if a sight is disqualified. Unless additional, unused sights that satisfy the particular requirements are listed in the original log, the disqualified sight must be replaced by a sight taken after the last date of any sights in the submitted Sight Folder.
- Item #3: Data contained in the log take precedence over the data shown on sight reduction forms. Ensure the data on the SR forms agree with the data in the Sight Log. An error here may lead to erroneous data in the reduction of the sight.
- Item #4: The line on the log between each run of sights must be left blank.

Sight Requirements:

Items #5-13 on the check list should be carefully checked because a lack of conformance will result in disqualification of the sight folder.

- Item #5: Ensure that each run of sights for the four LOPs, the meridian transit, and each of the bodies used in the 2-body fix consists of *at least* three (3) sights.
- Item #6: If the body is east of the observer, each succeeding *hs* in the run must be increasing; if the body is west of the observer, each succeeding *hs* must be decreasing. If these criteria are not met the run is disqualified.
Exception: If the body is within 10° of the observer's meridian, the change in *hs* for each succeeding sight may be so small that relief from the east increasing and west decreasing rule is granted. The easiest way to determine when a body is within 10° of the observer's meridian is by LHA. If the LHA is 10° or less, or 350° or more, the body is within 10° of the observer's meridian.
- Item #7: Ensure the single-body sights are reduced by the prescribed method. Any one of these four sights must be reduced and plotted by the *NASR* method; the sights for the other three bodies must be reduced and plotted by the *LOC* method.
- Item #8: The total time between the two LOPs in the 2-body fix must not exceed 20 minutes.
- Item #9: The Zn difference for the 2-body fix must not be less than 45° or greater than 135° .
- Item #10: The same two sights that were chosen to be used for the 2-body fix must be reduced by both the *LOC* and *NASR* method. Each respective sight reduction must be plotted on a separate *CLS* sheet by the appropriate method.
- Item #11: The distance from any LOP to the observer's position must not exceed three nautical miles. The distance from the observer's position to the 2-body fix may exceed three miles; the critical element is that each individual LOP does not exceed the 3 nm limit.
- Item #12: Time Diagrams must be drawn for each sight reduction, except for the meridian transit sight.
- Item #13: The sight selected for MT reduction must be taken within 10 seconds of the predetermined transit time. The time calculations must be shown on the MT form.

Sight Computations

You are now ready for a step-by-step check of each sight reduction form. Each item is to be checked against the printed, hard-copy commercial or government edition of the *Nautical Almanac* of the year that the sights were taken; commercially programmed sight reduction calculators or computer programs, or on-line almanacs may not be used for the Sight Folder data or sight reduction calculations.

- Item #14: If dip short is used, corrections can be taken from the USPS Dip Short Table included in the *Navigation* course manual (Appendix A) or the calculations can be made by formula. In either case the computations must be shown on the SR form and checked. Check to see that the dip short distances, with units of measurement, are shown in the "Remarks" column of the Sight Log.
- Item #15: Ensure that the IC and height of eye have been transcribed correctly from the Log to the sight reduction form. Using the removable card or page A2 from the *Nautical Almanac*, check the dip correction for all bodies.
- After dip and IC have been checked, check the arithmetic involved in the conversion of **hs** to **ha**.
 - Check the main correction of each body at this time. If Venus or Mars has been used, be sure the proper additional corrections have been entered, if applicable. For the sun's main correction, make sure the proper column for month and for upper or lower limb has been used.
 - For moon sights, ensure that the proper column is used in determining the horizontal parallax correction. Also, if the sight on the moon is of the UL, 30' must be subtracted; otherwise, all moon corrections are positive (i.e., added).
 - If the **ha** is less than 15°, see that the proper temperature and barometric pressure (T&B) corrections have been inserted. The temperature and pressure must be noted on the sight log in the "Remarks" column. The corrections are to be taken from page A4 in the *Nautical Almanac*.
 - Ensure that each sight reduced by the *NASR* method does NOT have an altitude of greater than 75°.
- Item #16: Make certain that the correct sign is shown for "*d*" and the "*d* correction", and the "*v*" and "*v* correction", as applicable.
- Item #17: Check each item in the "Time" box and the "Almanac-LHA" box to ensure LHA is calculated correctly.
- If the WE and ZD are correct as transcribed from the Log, check for careless arithmetic in finding GHA, Dec, *d* and *v*. Before moving on, note if a change in date is necessary. If daylight savings time is in effect and has been used, make sure this is noted on the "Remarks" column of the Sight Log; the actual WT should be used in the SR form, and the ZD should be for the zone to the east of where the sight was taken.
 - If you are checking a star sight, verify the SHA in the *Nautical Almanac*. See that the proper whole hour appears in the hour blank and the correct GHA of Aries for that whole hour is shown in its blank. Likewise, check that the proper minutes and seconds are shown for this fractional hour in the adjacent blank

- Go over the arithmetic involved in the computation of GHA because errors are common. Make sure that W Lo is subtracted from, and E Lo is added to, the GHA to determine LHA, and that the **W** or **E** is circled for the DR Lo entry. Recheck the arithmetic to ensure that the LHA is correct.

Item #18: Check if any other errors were made from *Nautical Almanac* data, including extracting the correct value of Dec, the *d* value, and the corresponding *d* correction.

Item #19: Be sure that the entries for LHA, L, and Dec are correctly converted to decimal degrees and have been rounded to 5 decimal places.

Item #20: Repeat the arithmetic to calculate Hc. Errors here can be costly. Check for the inclusion of a negative (—) sign when required. Check carefully the conversion from sin Hc to Hc; leave the full precision of sin Hc in the calculator before converting it to Hc, then round the value of Hc to five digits and enter on the SR form.

- Look for arithmetic errors in finding the difference between Hc and Ho. Check the intercept “toward” or “away”.

Item #21: Be sure that Z has been correctly converted to Zn.

Items #19 – 21 for the *NASR* Sight Reductions:

- Ensure that one single-body sight and the two sights of the 2-body fix are properly reduced using the *NASR* method.

Item #22: Check the Time Diagram for correctness and accuracy. The sun must be located on each diagram. Aries, stars, planets, the moon and the sun (when the sun is observed) are plotted by GHA. For other sights, the sun is plotted by UT. After locating Aries, a star is plotted by SHA. The LHA on the Time Diagram should agree with the computed value. Use a protractor to measure all angles.

Item #23: Ensure that the calculation of the time of meridian transit was correct and that the sight was taken within 10 seconds of the computed time. Carefully check the computation of latitude. If the moon or a planet is used, be sure that the accurate “*v*” correction is included. The entire calculation of latitude must be shown on the meridian transit form. Corrections to **hs** to get Ho, and the determination of declination at the time of the sight must be included.

Item #24: List any errors not covered elsewhere, including that **N** or **S**, **E** or **W**, **f-** or **s+**, etc, is circled, as applicable, in the TIME, SIGHT DATA, ALMANAC – LHA and ALMANAC – Dec boxes on the sight reduction form.

Plotting and Labeling

The next several items on the checklist address the correct plotting and labeling recorded on the *CLS* sheets.

Item #25 & #26: Check to see that the latitude diagonals match the selected mid-lat. Inspect the parallels and meridians for correct labeling at 10’ intervals. Ensure the *CLS* is set up to cover 1° of latitude and 1° of longitude, with the vertical lines marking the 1° of longitude drawn the length of the plotting sheet. **Exception:** If the intercept is very small,

the scale on the *CLS* sheet may be doubled. Ensure the *CLS* sheet is set up properly and all plotting is correct for the doubled scale.

Item #27: Check the plotted positions of the KP, EP, Fix and APs for accuracy.

- Ensure the Sight Error (SErr), or the EP or Fix coordinates are properly recorded at the bottom of the *CLS* sheet, as appropriate.

Item #28: Check the labeling again.

- The KP is a triangle symbol with no label.
- The EP symbol is a square with no label.
- An AP is a circle symbol labeled 'AP' at an angle. For the 2-body fix reduced by the *NASR* method, there are two APs; label the first AP₁ and the second AP₂.
- Single LOPs are labeled with the zone time of the sight to the nearest minute above the LOP and the name of the body below.
- For sun and moon sights, the limb is NOT labeled on the chart or *CLS* form.
- For the 2-body fix, the first fix LOP is labeled with the zone time of the sight to the nearest minute followed by a dash, then the zone time of the fix to the nearest minute. This is above the LOP, and the name of the body appears below the LOP. The second fix LOP is labeled with the zone time of the fix above the LOP and the name of the body below. The fix symbol is a circle and is labeled with the zone time of the fix placed horizontally.

Item #29: Ensure the LOPs are accurate within ½ nm and 1°.

- Measure the intercept distance and the azimuth direction.
- Make certain that the LOP is 90° to the azimuth and that the dashed azimuth line terminates at the LOP.
- The observer's position to the LOP distance must not exceed 3nm; however, the distance from the observer's position to the fix can exceed 3nm.
- For the fix, the smaller angle between the LOPs must be 45° or more.

Item #30: This is for errors not specifically addressed under other items; for example, a fix or EP position incorrectly recorded on the *CLS* form.

Resubmittals

The next two items on the check list are only applicable for Sight Folders that are being prepared for resubmittal.

Item #31: ALL errors and omissions noted in the original Sight Folder submission must be corrected when preparing a Sight Folder for resubmittal, not just the item that might have caused the folder to be rejected (i.e., any error in Items #5 through #13). However, the original error is NOT to be erased. If the correction can 'neatly' be made by lining through the original error and writing in the correction, this is acceptable; if the errors are extensive or cannot be made neatly, a new *SR* form and/or *CLS* form must be completed and attached to the original. This is detailed in the *Navigation 09* manual, Appendix D.

Item #32: For rejected sights, NEW *SR* forms and *CLS* forms MUST be attached to the originals; corrections are not allowed for rejected sights.

The Completed Sight Folder

- Leave the *Sight Verification* form (NSV 08 or RSV 08) unsigned until all corrections are made by the student to your satisfaction. With uncorrected errors, the sight folder is not ready for submittal.
- Ensure that two copies of the Key to Sights Form (NSK 09) are included and properly filled out.
- When you are satisfied that the Sight Folder meets all of the course requirements, sign the *Sight Verification* form. Have the student make photocopies of his/her entire folder. In the unlikely event that the folder is lost in the mail, the photocopies will be accepted, with the Offshore Navigation Chair's approval.

Common Errors

The errors most commonly found in sight folders are listed below. Some of the errors listed will be immediately apparent; others will not. It cannot be stressed enough that the Sight Folder must be completely checked by the Sight Checker. If each entry and each arithmetic operation is not verified, errors can be overlooked.

To be of the greatest service to the student, the location of errors should be noted but the correct information or value should not be given. By requiring the student to rectify the error, he/she will learn and be better able to guard against a repetition of similar errors in the future.

- Sight Folder not properly reviewed nor checked by the squadron.
- Transcription errors from Sight Log to the SR form.
- Computations omitted.
- Arithmetic errors
- Azimuth spread for fix not within tolerance.
- Dip/dip short errors, Dip Short table not used (or not properly used), errors in dip short formula calculation and/or extracting data from the *Nautical Almanac*.
- GHA of body; incorrect data from *Almanac*, such as using the sun column for Aries or vice versa. Incorrect date.
- Reversal of minutes and seconds from yellow pages or wrong yellow page column used.
- Log errors.
- Improper signs for corrections.
- Incorrect entering arguments for data extractions.
- Improper column used for sun's "main" correction: Oct-Mar/Apr-Sept.
- Only one copy of Key to Sights (NSK-08) included in folder.
- Insufficient sights logged.
- Incorrect or missing labels on plot.
- Candidate's name and squadron not on each sheet in the Sight Folder.
- Runs of sights in which no sequence of three sights shows consistently increasing or decreasing values for h_s (except when body is within 10° of observer's meridian).
- Incorrect sign of " d ", especially for moon sights.
- LOP over three nautical miles from observer's position.
- Time diagram incomplete or not drawn. Sun often omitted.
- Observations for the 2-body fix more than 20 minutes apart.
- Conversion of degrees and minutes to decimal degrees incorrect (for *LOC* reductions).
- Conversion of $\sin H_c$ to H_c incorrect.
- One or more sights reduced by *NASR* have altitude greater than 75° .
- Meridian transit sight taken over 10 seconds from the computed time of transit.

End of Sight Checking Procedural Guide

UNITED STATES POWER SQUADRONS®
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USPS SIGHT VERIFICATION FORM

Navigation 2009



Candidate's Name _____ Squadron _____

Certificate Number _____

THE COURSE INSTRUCTOR OR DESIGNEE MUST SIGN BELOW, AFTER COMPLETELY CHECKING THE CANDIDATE'S SIGHT FOLDER AND ENSURING CORRECTIONS ARE MADE AS NEEDED.

1. I have carefully checked the sights in this folder and believe that they meet the requirements and rules stated in the *Navigation* course manual, that the work is accurate and neat, and that the data on the work sheets agree with the data in the log.

Signature and Grade* _____ Date _____

Squadron Position** _____

* The Grade of the individual attesting to the statement above must be N or SN.

**"Squadron Position" refers to educational duties, e.g., Ch/LB/AG, Instructor, Sight Checker, etc.

Submit one signed copy of this form with the Candidate's completed Sight Folder.



(Candidate)

(Squadron)

KEY TO SIGHTS SUBMITTED

Sight No.	Requirement	Body
	Two-Body Fix	
	Meridian Transit	

Sight No.	Requirement	Body
	Sun LOP	
	Moon LOP	
	Planet LOP	
	Star LOP	

SIGHT MARKING SYMBOLS

	Symbol	Original	Resubmittal
Deductible Error	X	Red	Blue
Non-deductible Error	⊗	Red	Blue
Dependent Error, no deduction	✓	Red	Blue
Correct or Corrected	✓	Green	Green

Sight Folders shall be submitted with an Examination Order form, ED33, by the SEO or other member of the Squadron Educational Department authorized to order exams.

RESUBMITTAL OF SIGHTS NOT ACCEPTED

- 1 ALL ERRORS MUST BE CORRECTED. This includes all errors marked in red in the Sight Folder, those marked on the check list (on the back of this form) and those noted under "Additional Comments". DO NOT erase the examiner's check marks or notations when correcting. Those sheets or plots which must be redone have a red line drawn diagonally across the page.
2. Sights marked "Not Accepted" may not be corrected nor resubmitted. They must be replaced by new sights, either from among those already included in the Sight Log as submitted or by entirely new sights taken after the last date of any sights in the submitted Sight Folder.
3. The entire contents of the original Sight Folder must be returned. In addition, one Resubmitted Sight Verification form (RSV 08) and two new Key to Sights forms (NSK 08) must be filled out and included.

THIS SIGHT FOLDER HAS BEEN ACCEPTED _____

(Chair, Offshore Navigation Committee)

NOT ACCEPTED _____

(DATE)

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(Submit 2 copies of this form with the Sight Folder.)

CHECK LIST

ITEM DESCRIPTION	2-BODY FIX		OTHER OBSERVATIONS				
	1	2	SUN	MOON	PLANET	STAR	TRANSIT
FORMS:							
1. Did not use USPS forms.							
LOG:							
2. Incomplete or contains errors.							
3. Sight data disagrees with Log.							
4. Blank line not left in Log between runs.							
SIGHT REQUIREMENTS: (Not accepted for any one error)							
5. Run does not consist of at least 3 sights on same body.							
6. Change of "hs" inconsistent with change of time.							
7. Sights not reduced and plotted by method prescribed.							
8. LOPs of two-body fix not within 20 minutes of time.							
9. The smaller angle between LOPs of the fix is $\leq 45^\circ$.							
10. Two-body fix not reduced by both <i>LOC</i> and <i>NASR</i> methods.							
11. LOPs are more than 3.0 miles from DR, KP or GPS position.							
12. Time diagrams not drawn.							
13. Meridian transit sight not taken within 10 sec. of precalculated time of transit.							
SIGHT COMPUTATIONS:							
14. Dip short computations are wrong or missing.							
15. Error(s) in computing Ho.							
16. Wrong sign for 'v' and/or 'd' correction.							
17. Errors in LHA and/or computations missing.							
18. Other <i>Nautical Almanac</i> errors.							
19. Error(s) in converting minutes to decimals.							
20. Error in calculation of Hc and/or intercept.							
21. Error in calculation of Z or Zn.							
22. Error in time diagrams.							
23. Error in meridian transit.							
24. Other.							
PLOTTING AND LABELING:							
25. Not in agreement with computations.							
26. Diagonals do not match Mid-Lat.							
27. EP, Fix, SErr, and/or DR, KP, or GPS omitted/incorrectly plotted.							
28. Improper or absent labels and/or symbols.							
29. Inaccurate or careless plotting.							
30. Other.							
RESUBMITTALS:							
31. Previous errors not corrected.							
32. New CLS and SR forms not completed.							

ADDITIONAL COMMENTS _____

INSTRUCTIONS FOR THE USE OF THE SIGHT LOG AND A SAMPLE SIGHT LOG

USPS Sight Log			Candidates Name				Squadron					Page No.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
No.	Date	Body	WE m-s	ZD	Watch Time h-m-s	hs	Approx. Brg	Hor	HE ft	IC	DR Lat	DR Long	Remarks
	2008												
1	2 Aug	Jupiter	f 0-09	+5	20-17-26	28° 09.0'	SW	NH	6.0	-0.5	41° 43.1' N	92° 40.0' W	3 body fix
2	"	"	"	"	20-17-51	28° 07.8'	"	"	"	"	"	"	"
3	"	"	"	"	20-18-20	28° 05.2'	"	"	"	"	"	"	"
4	3 Aug	Sun LL	f 0-10	+5	12-34-47	66° 59.8'	S	NH	5.5	+0.2	41° 43.1' N	82° 40.0' W	Transit

The Sight Log is to be used as the "Log of Record". Once this log is submitted, it is the official Log and cannot be modified or added to except with NEW sights taken after the return of the Log upon rejection of the Sight Folder. As the Log is considered primary data, it will be considered correct if there is a disagreement between the Sight Reduction sheets and the Log.

Fill in the forms as described below and as illustrated in the sample log above. If there is no applicable data, leave the space blank or use a dash, not a zero. Ditto marks are acceptable for the **second and subsequent** entries within a run of sights.

1. Number all sights chronologically and consecutively. Use this number in all forms, plotting sheets, and additional work sheets. Circle the number of the sight reduced and submitted. Leave a blank line between each run of sights. Draw a double red line in the space immediately following your last log entry to signify completion of your current log date.

2. Show the year on an otherwise blank line, if more than one page is used, show the year at the top of this column on each page. Give the day and the month in that order and identify the month by its first three letters, not its number.

3. The name, not the symbol, of the body shall be used, if the sun or moon, indicate UL or LL.

4. Watch error, either fast or slow, if no error, show 0-00.

5. This is the ZD of the reference meridian.

6. Watch time is to be entered as 24 hour time only.

7. The altitude read from the sextant before corrections are applied..

8. Approximate bearing, accurate only to cardinal or inter-cardinal point, e.g., S, SW, NE etc. Approximate degrees are acceptable.

9. State whether the horizon is natural (NH) or dip short (DS). If dip short, see instructions that accompany the Dip Short formulas in the SM Appendix.

10. Indicate height in feet and tenths of feet, not inches, e.g., 6.5 not 6 ft 6 in or other descriptions.

11. The sextant index correction and whether (+) or (-). If none, show 0.0.'

12. The latitude coordinates of your position or DR.

13. The longitude coordinates of your known position or DR.

14. Any information which will help in understanding the circumstances under which sights were taken should be noted here. If the ZD used for timing sights was different from the standard ZD for the DR or KP Lo, note this here (e.g. Daylight Time UT) For dip short sights, note distance to far shore. Note sextant instrument error, if any. For sights taken at sea, note means used to fix vessel's position.

UNITED STATES POWER SQUADRONS®
SAIL & POWER BOATING

**USPS RESUBMITTED
SIGHT VERIFICATION FORM**

Navigation 2009



Candidate's Name _____ Squadron _____

Certificate Number _____

THE COURSE INSTRUCTOR OR DESIGNEE MUST SIGN BELOW, AFTER COMPLETELY CHECKING THE CANDIDATE'S SIGHT FOLDER AND ENSURING CORRECTIONS ARE MADE AS NEEDED.

1. I have carefully checked the sights in this folder and believe that they meet the requirements and rules stated in the *Navigation* course manual including those for resubmitting sights, that the work is accurate and neat, and that the data on the work sheets agree with the data in the log.

Signature and Grade* _____ Date _____

Squadron Position** _____

* The Grade of the individual attesting to the statement above must be N or SN.

**"Squadron Position" refers to educational duties, e.g., Ch/LB/AG, Instructor, Sight Checker, etc.

Submit one signed copy of this form with the Candidate's completed Sight Folder.

