

**PUGSLEY'S DEAD RECKONING
INCLUDING THE VARIOUS
METHODS OF FINDING
COURSE AND DISTANCE**

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Pugsley's Dead Reckoning Including the Various Methods of Finding Course and Distance by R. M. Pugsley

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R. M. PUGSLEY

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PUGSLEY'S DEAD RECKONING

INCLUDING

THE VARIOUS METHODS
OF FINDING

COURSE AND DISTANCE

BY

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08 Nov 1898

PREFACE

Usually the separate subjects covered by the term "navigation and nautical astronomy" are too roughly generalized for one to readily understand, the result being a constantly increasing demand for a special work for the use of those wishing to study navigation with the intention of obtaining a U. S. Local Inspectors license.

Spec. 4-11-38 yim

The selection and arrangement of the various methods and explanations in detail of keeping track of a ship by "dead reckoning" or "account," including Mercator and middle latitude sailings, and use of logarithms are not written from theory alone, but from actual practice, and several years' experience as a nautical instructor, which makes possible the production of this volume for the beginner.

The matter in this volume is arranged in the proper order for study and should not be deviated from as the nature of the problems in the last part is such that they cannot be managed by those without that knowledge contained in the first part. For that reason it is suggested that the usual custom of beginning study in spots in the advanced portion of a book should not be followed.

Bowditch tables have been used throughout and those are referred to where table numbers are mentioned.

R. M. PUGSLEY.

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EXPLANATION

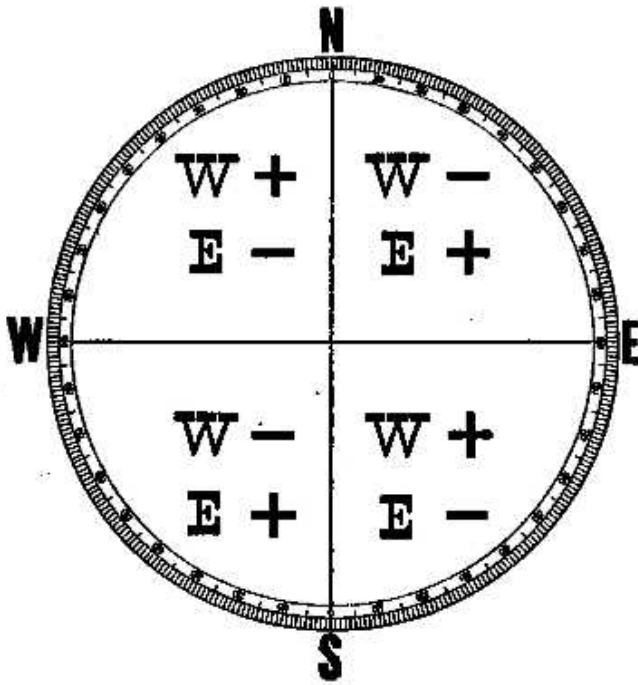
When the compass course is between north and west, it is in the north-west quadrant, the signs indicating that the variation, deviation or compass error, if west, are to be added to the compass course. If east, they are subtractive.

When the compass course is between south and west, it is in the south-west quadrant, the signs indicating that the variation, deviation or compass error, if west, are to be subtracted from the compass course. If east, they are additive.

When the compass course is between south and east, it is in the south-east quadrant, the signs indicating that the variation, deviation or compass error, if west, are to be added to the compass course. If east, they are subtractive.

When the compass course is between north and east, it is in the north-east quadrant, the signs indicating that the variation, deviation or compass error, if west, are to be subtracted from the compass course. If east, they are additive.

The result in any case will be the true course.



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MATHEMATICAL SIGNS

+ PLUS. The sign of addition: indicates that the quantity is to be added, as

| | | | |
|-----------|--------------------------|------------|--------------------------|
| Lat. left | $27^{\circ} 09' 25''$ N. | Long. left | $68^{\circ} 53' 45''$ W. |
| Dif. | $+ 2 53 45$ N. | Dif. | $+ 2 17 45$ W. |
| Lat. ship | $30 03 10$ N. | Long. ship | $71 11 30$ W. |

- MINUS. The sign of subtraction: indicates that the quantity is to be subtracted, as

| | | | |
|------------|--------------------------|------------|--------------------------|
| Lat. left. | $38^{\circ} 16' 15''$ S. | Long. left | $35^{\circ} 22' 15''$ E. |
| Lat. ship | $- 32 28 30$ S. | Long. ship | $- 33 46 45$ E. |
| Dif. | $5 47 45$ N. | Dif. | $1 35 30$ W. |

× MULTIPLY. The sign of multiplication: indicates that the quantities are to be multiplied, as

| | |
|-----------------------------------------------|----------------------------|
| Hourly drift of a current $1\frac{3}{4}$ mile | $= 1.75$ |
| Throughout the day | $= \underline{\times} 24h$ |
| | 700 |
| | $\frac{350}{}$ |
| Drift in one day | $= 42.00$ |

and

| | |
|----------------------|----------------------|
| $7^{\circ} 42' 45''$ | $8^{\circ} 22' 31''$ |
| $\times 2$ | $\times 3$ |
| Ans. $15 25 30$ | Ans. $25 07 33$ |

÷ DIVIDE. The sign of division: indicates that the quantity is to be divided, as $63^{\circ} 15' 30'' \div 2$, and is usually written thus:

$$\frac{63^{\circ} 15' 30''}{2} \quad 2 \overline{) 63^{\circ} 15' 30''}$$

Ans. $31 37 45$

= EQUALITY. The sign of equality: indicates that the quantities between which it is placed are equal, as in latitude 30° , departure $60' =$ difference of longitude $120'$.