



TAMAYA Navigation Calculator

NC-2200

Full Automatic Piloting, Dead Reckoning and Navigation

- Simple operation with built-in programs
- Course and Distance computation
- Dead Reckoning computation
- Great Circle computation
- ETA computation
- Current computation
- LOP computation
- Meridian Passage computation
- Convenient conversions for to HMS and to HHH
- Long term Nautical Almanac for the Sun, Moon, Venus, Mars, Jupiter, Saturn and 63 stars. The built-in Almanac is usable until 2100, it is good with accuracy better than 0'.2.
- Twilight Time mode computes time of rise or set, civil twilight and azimuth for the Sun and rise or set, age and azimuth for the Moon.
- Prediction/Identification mode computes azimuth and altitude for all celestial bodies and displays any usable bodies above the horizon.



Specifications of Hardware

Operation:	Touch panel with stylus
Power source:	3 pieces of size AAA battery (dry cell)
Operating time:	Standard approx. 8 hours for continuous operation (• Batteries for checking purposes included. • For normal use, please prepare rechargeable batteries.)
Operating temperature:	0°C – 45°C (32°F – 113°F)
Display:	LCD, colors, 240 × 320 dots
Dimensions:	72 mm (W) × 125 mm (D) × 14 mm (H), or 2.83 in.(W) × 4.42 in.(D) × 0.53 in.(H)
Weight:	165g (without battery), or 582 oz (without battery)
Standard accessories:	Stylus and neck strap

Programmed Navigation Functions

1. Navigation Computations for Dead Reckoning and Piloting PILOT 1

- 1) Course and Distance
- 2) Dead Reckoning
- 3) Great Circle
- 4) Composite Sailing
- 5) Estimated Time of Arrival

2. Navigation Computations for Current, True Wind, Tide and Stream PILOT 2

- 1) Current
- 1-1) Course and Speed Made Good
- 1-2) Course and Speed to Make Good
- 1-3) Course to Steer and Speed Made Good
- 1-4) Set and Drift
- 2) Direction and Speed of True Wind
- 3) Tide at Standard Port
- 4) Tidal Stream

3. ASTRO. NAV

- 1) Twilight
- 2) Prediction & Identification
- 3) Nautical Almanac
- 4) Line of Position
- 5) Position Fix
- 6) Meridian Passage

4. SEXTANT

- 1) Altitude Corrections
- 2) Distance to Object

5. TIME & ARC

- 1) Time Computation
- 2) Arc Computation

6. TIME Calculations

- 1) To HMS
- 2) To HHH
- 3) Normal Computations

Course and Distance

PILOT1 - CD	
LATd	38°04'.5 N
LONd	135°15'.6 E
LATa	39°02'.0 N
LONa	136°35'.2 E
CO	47°23'.3
DIST	84.7

M+

CHAIN

EXIT

BACK

CM

Departure Lat.
Departure Long.
Arrival Lat.
Arrival Long.
Course
Distance

Set and Drift

PILOT2 - SET&DRFT	
LATdr	35°11'.2 N
LONdr	140°25'.8 E
LATf	35°16'.5 N
LONf	140°32'.5 E
TIMEr	02:45:00
SET	46°02'.8
DIF	7.6
DRFT	2.8 kn

EXIT

BACK

DR Lat.
DR Long.
Fix Lat.
Fix Long.
Time
Set
Distance Drifted
Drift

Position Fix

ASTRO.NAV - FIX	
# AZ	INT
1 359°23'.8	+ 2'.9
2 83°08'.7	- 14'.9
3	
4 166°18'.8	- 0'.8
5	
6	
7	

7

8

9

BACK

4

5

6

BS

1

2

3

C

0

.

ENTER

OK

NO. Azimuth Intercept

Dead Reckoning

PILOT1 - DR	
LATd	29°57'.6 N
LONd	112°14'.2 W
CO	200°00'.0
DIST	60
LATa	29°01'.0 N
LONa	112°37'.8 W

CHAIN

EXIT

BACK

Departure Lat.
Departure Long.
Course
Distance
Arrival Lat.
Arrival Long.

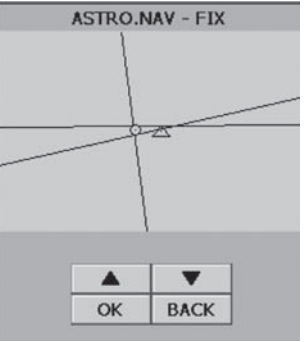
Direction and Speed of True Wind

PILOT2 - WIND DBS	
CO	115°00'.0
SPD	6.5 kn
WD	145°00'.0
WS	16.0 kn
WDt	162°24'.0
WSt	10.9 kn

EXIT

BACK

Ship Course
Ship Speed
Apparent Wind Direction
Apparent Wind Speed
True Wind Direction
True Wind Speed



Great Circle

PILOT1 - GC	
LATd	37°50'.8 N
LONd	122°25'.5 W
LATa	34°52'.0 N
LONa	139°42'.0 E
COi	302°37'.9
DIST	4488.8
LATv	48°19'.0 N
LONv	168°38'.8 W

dLON

EXIT

BACK

Departure Lat.
Departure Long.
Arrival Lat.
Arrival Long.
Initial Course
Great Circle Distance
Vertex Lat.
Vertex Long.

Nautical Almanac

ASTRO.NAV - ALMANAC	
GMT	10:12:39
DATE	07/31/1996
CB	Arcturus
DEC	19°12'.3 N
GHAa	102°28'.7
SHA	146°07'.4
GHA	248°36'.1

AC.Z

EXIT

BACK

Greenwich Mean Time
Date
Celestial Body
Declination
Greenwich Star Hour Angle
Star Hour Angle
Greenwich Hour Angle

ASTRO.NAV - FIX

LATdr	31°20'.3 N
LONdr	138°13'.8 W
LATf	31°20'.4 N
LONf	138°30'.7 W

DR

EXIT

BACK

DR Latitude
DR Longitude
Fix Lat.
Fix Long.

Current

1) Course and Speed Made Good

PILOT2 - C&S MG	
CO	80°00'.0
SPD	10.0 kn
SET	140°00'.0
DRFT	2.0 kn
COmg	88°56'.9
SPDmg	11.1 kn

EXIT

BACK

Course steered
Speed through water
Set
Drift
Course made good
Speed made good

Calculated Altitude and Azimuth

ASTRO.NAV - ALMANAC	
GMT	10:12:39
DATE	07/31/1996
CB	Arcturus
LATdr	35°34'.7 N
LONdr	141°16'.1 E
AZ	246°03'.0
ALT	59°01'.7

EXIT

BACK

Greenwich Mean Time
Date
Celestial Body
DR Latitude
DR Longitude
Azimuth
Calculated Altitude

2) Course to Steer and Speed Made Good

PILOT2 - CtoStr&S MG	
COmg	95°00'.0
SPD	12.0 kn
SET	170°00'.0
DRFT	2.5 kn
CO	83°23'.5
SPDmg	12.4 kn

EXIT

BACK

Course to make good
Speed through water
Set
Drift
Course to steer
Speed made good

Line of Position

ASTRO.NAV - LOP	
LATdr	31°20'.0 N
LONdr	138°14'.5 W
DEC	18°09'.5 S
GHA	83°33'.3
AZ	125°26'.3
ALTc	17°53'.1

EXIT

BACK

DR Latitude
DR Longitude
Declination
Greenwich Hour Angle
Azimuth
Calculated Altitude