

	<b>Test Case</b>	TC47 Test TW calc with STW	
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**Belongs to Plan(s):** TP5 dashboard\_tactics...

**Belongs to Suite(s):** TS18 NMEA simulator ...

**Case Type:** Functionality

**Label(s):** windows

**Test Quality:**  **EXCELLENT** Defects Closed Fixed

**Assign To:**  Petri Makijarvi

**Case Priority:** Medium

**Estimate:** 15

**Is Automated**



## Precondition

There shall be a NMEA simulator on which the sentences VHW for STW, MWV for AWS and AWA, HDG for HDT shall be fully controlled to be static and not moving in any way. (In this test case NMEA Simulator <http://www.kave.fi/Apps/> is used - there are few steps which are specific to its version, if new versions or other products exists, or other simulator is used, one can skip those steps without a record other than for instruction for the future tests).

At the end of test we make a conversion sanity check using true wind converter and vector visualization application <http://www.starpath.com/freeware/truewind-setup.exe> - on other platforms similar on-line services can be used.


## Steps

Click "Tab" or "Shift + Tab" to navigate grid 

-  Set up the com0com port for the simulator as follows 

```
command> install PortName=COM29 PortName=COM30
          CNCA1 PortName=COM29
          CNCB1 PortName=COM30
ComDB: COM29 - logged as "in use"
ComDB: COM30 - logged as "in use"
command>
```



2  Set the OpenCPN to receive data from COM30:



**Configure new connection**

☒ Serial ☐ Network

DataPort: COM30 Baudrate: 4800

Protocol: NMEA 0183 Priority: 1

User Comment: Testing with emulator




**3**  Set the NMEA Emulator to send to the port COM29:




Options

General	NMEA0183	NMEA2000	Track	Limits
NMEA0183 Port		COM29		<input checked="" type="checkbox"/> Use list
NMEA0183 baud rate		4800		
NMEA0183 HDx send delay (ms)		1000		



4  Prepare the NMEA debug window in OpenCPN and use filters for the aforementioned sentences - either disable or otherwise make sure that there are not other data coming in;




- 5  Select the sentences to be sent out in NMEA emulator:



Options

General	NMEA0183	NMEA2000	Track	Limits	
NMEA0183 Port		COM29		<input checked="" type="checkbox"/> Use list	
NMEA0183 baud rate		4800			
NMEA0183 HDX send delay (ms)		1000			
NMEA0183 sentences to be sent					
HDG	<input type="checkbox"/> Heading	RSA	<input type="checkbox"/> Rudder Sensor Angle	MWD	<input type="checkbox"/> (True wind info)
HDT	<input checked="" type="checkbox"/> True heading	MTW	<input type="checkbox"/> Mean Temperature of Water	MWV	<input checked="" type="checkbox"/> (Relative wind info)
GLL	<input checked="" type="checkbox"/> Geographic Position	DPT	<input type="checkbox"/> Depth of Water	MWV	<input type="checkbox"/> (True wind info)
MTC	<input type="checkbox"/> Recomm. Min. Nav. Info.	VHW	<input checked="" type="checkbox"/> Water speed and heading	VWR	<input type="checkbox"/> (Relative wind info)
GGA	<input checked="" type="checkbox"/> Global Pos. System Fix Data	RPM	<input type="checkbox"/> Engine RPM		
VTG	<input type="checkbox"/> Ground speed				
ZDA	<input checked="" type="checkbox"/> Time,date,UTC,dmy,time zone				



- 6  In Dashboard, select the speed value to m/s since it is used NMEA Simulator, this facilitates the test but is not mandatory.



Dashboard\_Tactics preferences

Dashboard\_Tactics Appearance Tactics Performance Parameters

Fonts

Title: Arial, 10

Data: Arial, 14

Label: Arial, 8

Small: Arial, 8

Units, Ranges, Formats

Speedometer max value: 12

Speed Over Ground Damping Factor: 0

COG Damping Factor: 0

Local Time Offset From UTC: 00:00

Boat speed units: Kts

Depth units: Meters

Depth Offset (Meters): 0


Distance units: Nautical miles

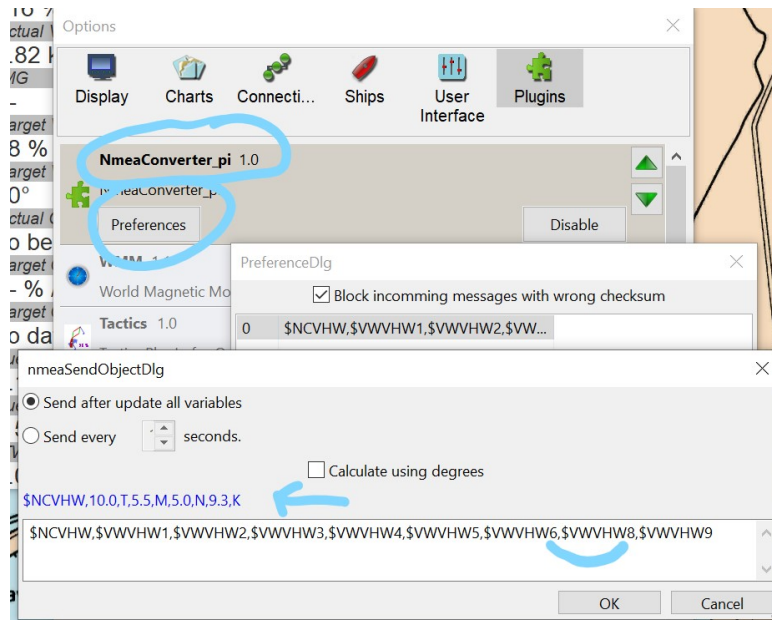
Wind speed units: m/s


Temperature units: Celsius

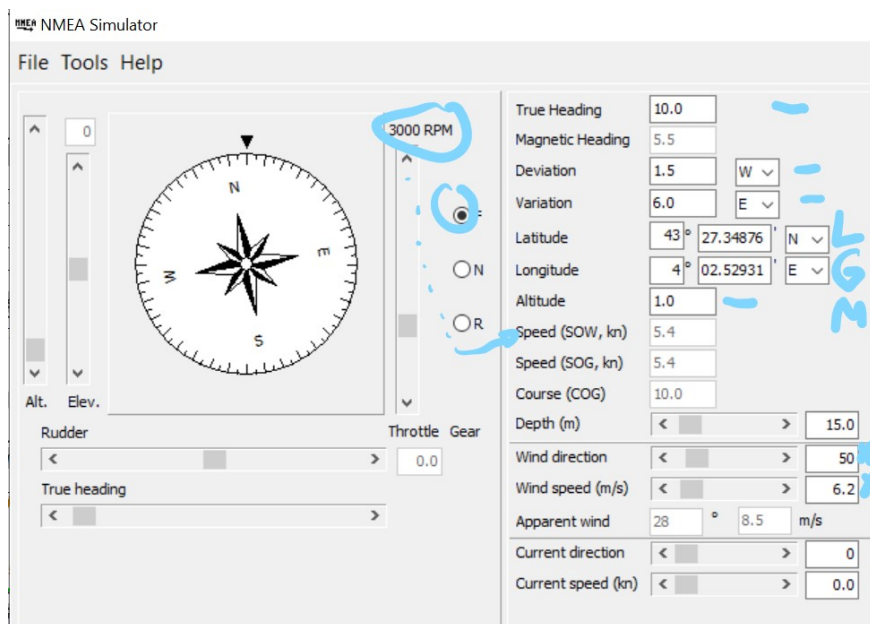
OK Cancel




- 7  This step is optional obsolete since July 2010: it was to compensate a bug in NMEA emulator's output of VHW sentence, extra comma makes checksum to fail (version March 2019 concerned). We use NMEAConverted plugin as follows to skip the extra comma:



- 8  Prepare the NMEA emulator to send the values which you can select freely but here's an example. Note that you need some throttle (despite the wind!) to make the boat to move. Do NOT start the "run" yet (no sentences out).




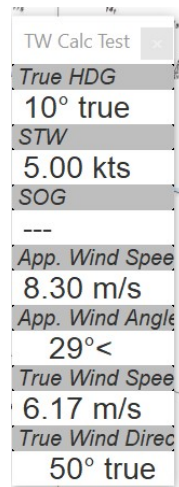
- 9  Prepare the Tactics module to calculate silently the true wind using AWS, AWA, HDT and STW. This means, no options selected here:



True Wind	
<input type="checkbox"/> Correct STW with Leeway	<input type="checkbox"/> Correct AWS/AWA with Heel
<input type="checkbox"/> Force True Wind Calculation	<input type="checkbox"/> Use SOG instead of STW for True Wind Calc
<input type="checkbox"/> Show Wind Barb on Chart (OpenGL)	




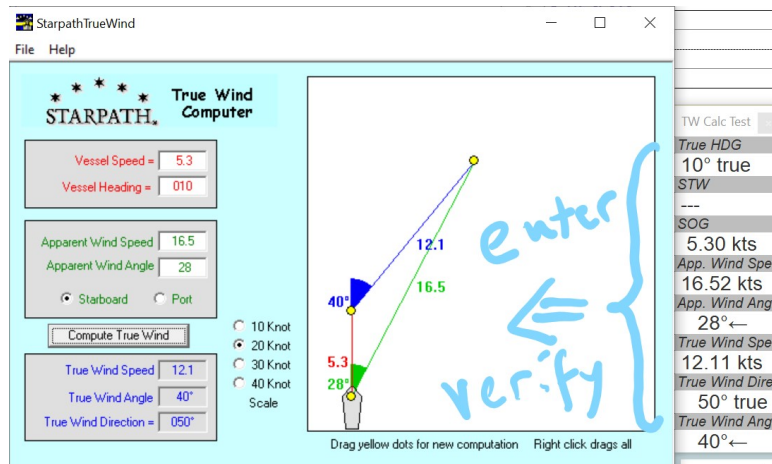
- 10  Prepare a dedicated dashboard like this (it will be used in the next test case also), start the "run" on NMEA emulator and observe that you get the same values as indicated by the NMEA emulator **and** the NMEA sentences :




True HDG	10° true
STW	5.00 kts
SOG	---
App. Wind Speed	8.30 m/s
App. Wind Angle	29°<
True Wind Speed	6.17 m/s
True Wind Direc	50° true

 PASS or FAIL

- 11  Convert the result to knots and make an inverse sanity check using an external tool (or your calculator - which will increase the test time).



 PASS or FAIL


- 12  Move the true wind direction with the simulator to the port side, to 340 degrees. Check now that you get the same true wind angle, but from the port side.



**NOTE:** unfortunately, the above "Starpath" application has not made the same sanity check because it fails for TWD. Do not pay attention to it here.



PASS or FAIL

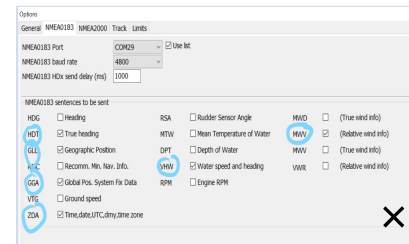
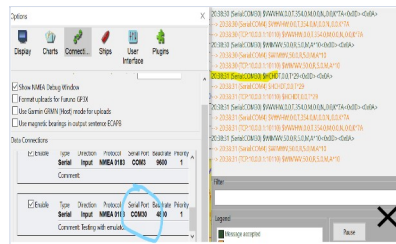
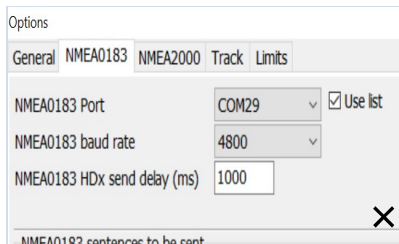
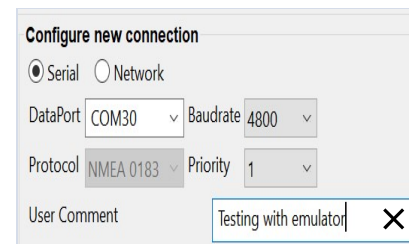
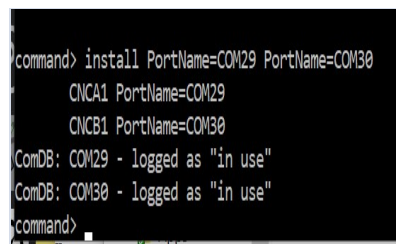
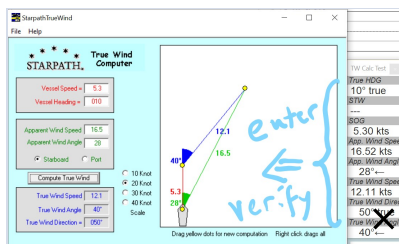
- 13  Remove VHW sentence from the NMEA Simulator sent sentences. Verify that after 10 seconds, the STW and the true wind values indicate that that the STW has disappeared.











PASS or FAIL

 Add Step

## Attachments



 Add Attachments

RESULTS	DEFECTS	REQUIREMENTS			
Status	Test Plan Run	Assigned To	Updated At↑	Actions	
✓ Pass	TPR32 dashboard_tactics_pi_...	 Petri Makijarvi	about a year ago		
► Skip	TPR34 dashboard_tactic_pi_st...	 Petri Makijarvi	about a year ago		
► Skip	TPR35 dashboard_tactics_pi_...	 Petri Makijarvi	about a year ago		
► Skip	TPR36 dashboard_tactics_pi_...	 Petri Makijarvi	about a year ago		

▶▶ Skip	TPR37 dashboard_tactics_pi...	 Petri Makijarvi	about a year ago	
<div>« &lt; 1 2 3 4 5 &gt; »</div>				
ACTIVITY	HISTORY	COMMENTS		