



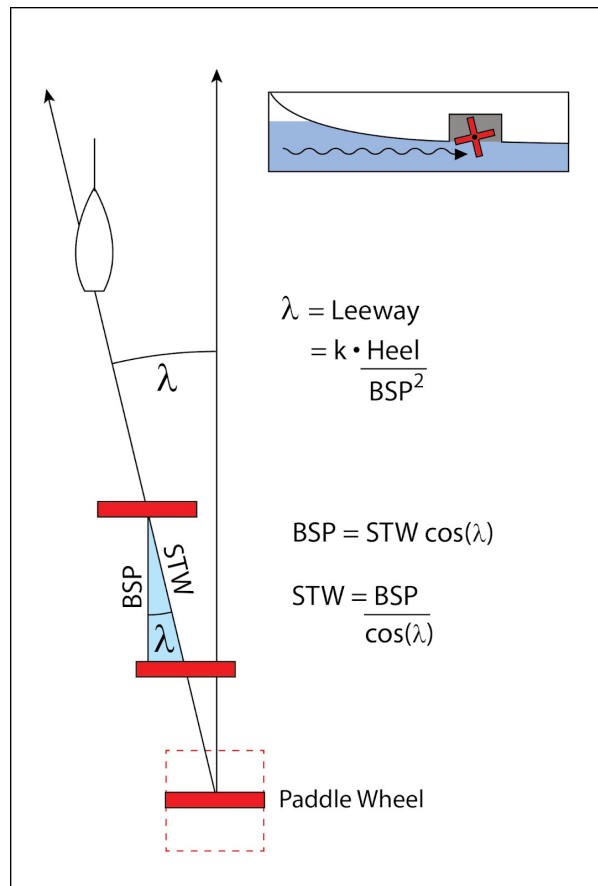




☰ Test Case	TC51 Test STW correction w/ Leeway	⋮
<div><div>Belongs to Plan(s):</div><div>TP5 dashboard_tactics...</div></div> <div><div>Belongs to Suite(s):</div><div>TS18 NMEA simulator ...</div></div> <div><div>Case Type:</div><div>Functionality</div></div> <div><div>Label(s):</div><div><div>windows</div><div>linux</div></div></div> <div><div>Test Quality:</div><div><div>👍 EXCELLENT</div> Defects Closed Fixed</div></div> <div><div>Assign To:</div><div><div> Petri Makijarvi</div></div></div> <div><div>Case Priority:</div><div>Medium</div></div> <div><div>Estimate:</div><div>180</div></div> <div><div>Is Automated</div></div>		
<div>Precondition</div> <div><p>Pre-requisite for this test is successful execution of TC50. In this test we use NMEA simulator http://www.kave.fi/Apps/ to create and control speed on water, it is also to make the apparent wind consistent with the heel. The NMEA Simulator not sending XDR-sentences for heel, they are generated with NMEA Converter plugin.</p></div>		
<div><div>Steps</div><div>Click "Tab" or "Shift + Tab" to navigate grid </div></div>		

- 1  Please study the below diagram to understand the correction we attempt to reach: 



cf. <http://davidburchnavigation.blogspot.com/2018/04/effect-of-leeway-on-knotmeter-speed.html>



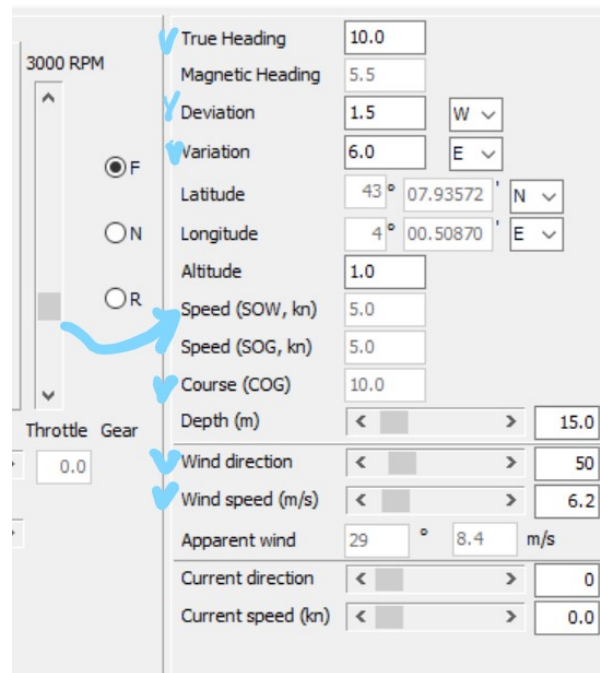
- 2  Continue with the same settings as in preceding Leeway testing what comes to the NMEA sentences from the NMEA simulator: 

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					
HDT	<input type="checkbox"/> Heading	RSA	<input type="checkbox"/> Rudder Sensor Angle	MWD	<input type="checkbox"/> (True wind info)
GLL	<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)
KYC	<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				



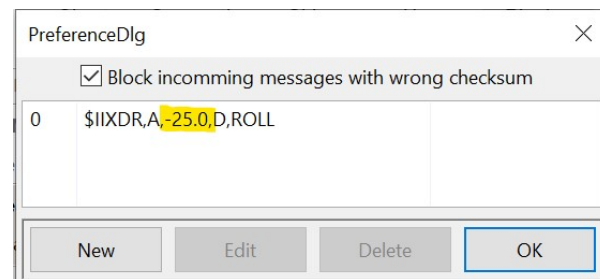
- 3  Use these values for making the boat move and for the wind:



The screenshot shows a control panel for a boat simulation. On the left, there is a vertical slider for '3000 RPM' and three radio buttons labeled 'F', 'N', and 'R'. Below these are 'Throttle' and 'Gear' controls, with 'Throttle' set to '0.0'. On the right, there is a list of settings with input fields and dropdown menus. Blue arrows point to the following values: True Heading (10.0), Magnetic Heading (5.5), Deviation (1.5), Variation (6.0), Latitude (43° 07.93572' N), Longitude (4° 00.50870' E), Altitude (1.0), Speed (SOW, kn) (5.0), Speed (SOG, kn) (5.0), Course (COG) (10.0), Depth (m) (15.0), Wind direction (50), Wind speed (m/s) (6.2), Apparent wind (29° 8.4 m/s), Current direction (0), and Current speed (kn) (0.0).




- 4  Provide XDR sentences with the NMEA converter to make the boat heel to port side by 25 degrees.



The screenshot shows a 'PreferenceDlg' window with a checkbox 'Block incoming messages with wrong checksum' checked. Below it, there is a list of NMEA sentences. The first sentence is '\$IIXDR,A,-25.0,D,ROLL', where '-25.0' is highlighted in yellow. At the bottom, there are buttons for 'New', 'Edit', 'Delete', and 'OK'.




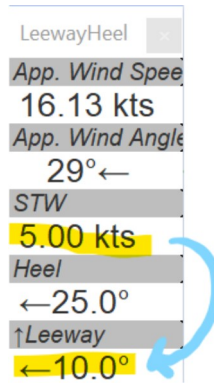
- 5  Make sure that the STW correction is not selected.



The screenshot shows a 'True Wind' settings panel. It has four checkboxes: 'Correct STW with Leeway' (checked and highlighted in yellow), 'Correct AWS/AWA with Heel', 'Force True Wind Calculation', and 'Show Wind Barb on Chart (OpenGL)' (checked). There is also an unchecked checkbox 'Use SOG instead of STW for True Wind Calc'.



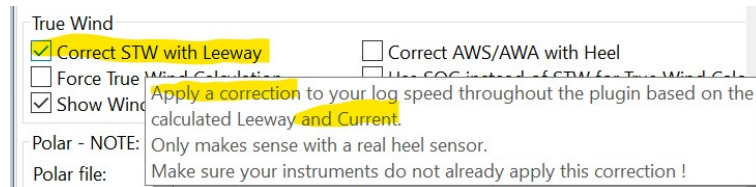
- 6  Observe the leeway with the non-corrected STW.



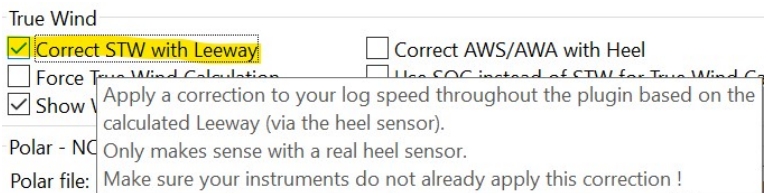
- 7  Select the correction of the STW with Leeway.





PASS criteria: bug fixes for b3 have been applied and the pop-up warning message has been modified accordingly:



FAIL criteria: bug fixes for b3 have not been applied and the pop-up warning is that of tactics_pi v1.0.009.



PASS or FAIL

- 8  Observe and verify the result, $STW' = STW / \cos(\text{Leeway})$ 

PASS Criteria: Fixes for the Defect D3 have been applied and Leeway is not corrected with corrected STW.

App. Wind Speed
16.13 kts
App. Wind Angle
29°←
STW
5.08 kts
True HDG
10° true
Heel
←25.0°
↑Leeway
←10.0°

FAIL Criteria: Fixes for the Defect D3 have **not** been applied ore regression has occurred and Leeway corrected with corrected STW.

LeewayHeel
App. Wind Speed
16.13 kts
App. Wind Angle
29°←
STW
5.07 kts
Heel
←25.0°
↑Leeway
←9.7°

The failed result can be confirmed (not mandatory) with the tactics_pi v1.0.009 in the same installation:

Leeway_ST...
App. Wind Speed
16.13 kts
App. Wind Angle
29°<
STW
5.07 kts
Heel
25.0 ° to Port
Leeway
9.7°>

 PASS or FAIL

⊕ Add Step

Attachments

True Wind

☒ Correct STW with Leeway ☐ Correct AWS/AWA with Heel

☐ Force True ☐ Force AWS/AWA

☒ Show Wind

Apply a correction to your log speed throughout the plugin based on the calculated Leeway and Current.

Polar - NOTE: Only makes sense with a real heel sensor.

Polar file: Make sure your instruments do not already apply this correction! ✕

App. Wind Speed
16.13 kts

App. Wind Angle
29° ←

STW
5.08 kts

True Wind
10° true

Heel
25.0°

Leeway
10.0° ✕

Options

General NMEA0183 NMEA2000 Track Limits

NMEA0183 Port COM9 ☒ Use list

NMEA0183 baud rate 4800

NMEA0183 HDX send delay (ms) 1000

NMEA0183 sentences to be sent

HDG ☐ Heading SSA ☐ Rudder Sensor Angle MWD ☐ (True wind info)

HDT ☒ True heading NTW ☐ Mean Temperature of Water MWV ☒ (Relative wind info)

GLL ☒ Geographic Position DPT ☐ Depth of Water MWW ☐ (True wind info)

HLC ☐ Recomm. Min. Nav. Info. VMW ☒ Water speed and heading VWR ☐ (Relative wind info)

GGA ☒ Global Pos. System fix Data RPM ☐ Engine RPM

VIS ☐ Ground speed

ZDA ☒ Time, date, UTC, day, time zone ✕

3000 RPM

True Heading 10.0

Magnetic Heading 5.5

Deviation 1.5 W

Variation 6.0 E

Latitude 43° 07.93572' N

Longitude 4° 00.50820' E

Altitude 1.0

Speed (SOW, kn) 5.0

Speed (COG, kn) 5.0

Course (COG) 10.0

Depth (m) 15.0

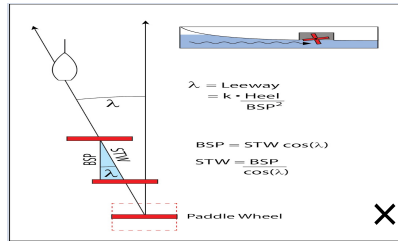
Wind direction 50

Wind speed (m/s) 6.2

Apparent wind 29 0.4 m/s

Current direction

Current speed (kn) ✕



PreferenceDlg

☒ Block incoming messages with wrong checksum

0 \$HXDRA-25.0D,ROLL

New Edit Delete OK ✕

« < 1 2 > »

📎 Add Attachments

RESULTS	DEFECTS	REQUIREMENTS
Status	Test Plan Run	Assigned To
⚠ Fail	TPR35 dashboard_tactics_pi_...	Petri Makijarvi
⏩ Skip	TPR36 dashboard_tactics_pi_...	Petri Makijarvi
✓ Pass	TPR37 dashboard_tactics_pi_...	Petri Makijarvi
⏩ Skip	TPR41 dashboard_tactics_pi_...	Petri Makijarvi
⏩ Skip	TPR42 dashboard_tactics_pi_...	Petri Makijarvi

« < 1 2 3 4 > »

ACTIVITY	HISTORY	COMMENTS
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