Wind Correction Worksheet

Clear	Set all variables to a invalid state keeping the current value. If it is touched again, clears all values to 0.
GSpd	**Ground Speed:** Stores or validate the **GSpd** value for the calculation of the other variables.
TAS	**True Air Speed:** Stores or validate the **TAS** value for the calculation of the other variables.
TCrs	**True Course:** Stores or validate the **TCrs** value for the calculation of the other variables.
THdg	**True Heading:** Stores or validate the **THdg** value for the calculation of the other variables.
WSpd	**Wind Speed:** Stores or validate the **WSpd** value for the calculation of the other variables.
WDir	**Wind Direction:** Stores or validate the **WDir** value for the calculation of the other variables.
WCA	**Wind Correction Angle:** Recalls the computed value of **WCA** to the display.

The Wind Correction worksheet solves the Wind Triangle problem of how the presence of wind affects an aircraft flight computing relevant values for navigation such as wind correction angle and ground speed.

The wind triangle is composed of the following segments:

- True course (TCrs) and ground speed (GSpd).
- Wind direction (WDir) and wind speed (WSpd).
- True heading (THdg) and true air speed (TAS).

Solving the wind triangle, the wind correction angle (WCA) is computed.

NOTE: Always verify the physical units
To change the units of a variable, tap over the unit symbol and select the right one from the pop-up menu. To change the whole units in the worksheet select "Set Metric Units" or "Set US Units" from the **[UNITS▶]** button in the Navigation Bar.

All the following examples use US units. So please select "Set US Units" from the **[UNITS▶]** menu in the Navigation Bar.

Example 1:
Find the wind direction, wind speed and wind correction angle given 350° THdg, 478 kts GSpd, 355° TCrs, and 500 kts TAS.

Solution:

Keystrokes	Description
[Clear] [Clear]	Clears all variables to start a new calculation.
type 350 **[THdg]**	Stores 350° in **THdg** (the button change to blue).
type 478 **[GSpd]**	Stores 478 KTS in **GSpd** (the button change to blue).
type 355 **[TCrs]**	Stores 355° in **TCrs** (the button change to blue).
type 500 **[TAS]**	Stores 500 KTS in **TAS** (the button change to blue) and automatically calculates the values of: **WSpd = 47.99 KTS** (the button change to red). **WDir = 290 °** (the button change to red). **WCA = -5 °** (the button change to red).

Appendix : Equations Used

The equations that this worksheet calculates are:

a) In Flight Cross Wind Component:

$$\textbf{WSpd} \cdot \text{COS}(\textbf{WDir}) = \textbf{TAS} \cdot \text{COS}(\textbf{THdg}) - \textbf{GSpd} \cdot \text{COS}(\textbf{TCrs})$$

b) In Flight Head Wind Component:

$$\textbf{WSpd} \cdot \text{SIN}(\textbf{WDir}) = \textbf{TAS} \cdot \text{SIN}(\textbf{THdg}) - \textbf{GSpd} \cdot \text{SIN}(\textbf{TCrs})$$