



PFMA E6B

Pocket Flight Management Assistant

Version 1.5

PFMA E6B is a simple yet powerful E6B implementation for phones and tablet devices. Using a convenient and familiar user interface (intuitive for modern pilots), it delivers some of the most used formulas and conversions that flying airplanes involves.

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Introduction

Thank you for buying PFMA E6B, the Pocket Flight Management Assistant computer for modern pilots.

Since the introduction of electronic calculators back in the 70's, the concept of electronic E6B computers was materialized in multiple aviation calculators. In the advent of mobile computers, such as Apple's Newton in the early 90's and the Palm Pilot not much later, the idea of implementing mobile applications emulating the E6B calculators was straightforward. One of those aviation calculators was CaCalc, introduced in 1998 for the Palm Pilot and Visor mobile computers. Since then, after the fusion between the mobile computer and cellular devices, and later the creation of the Tablet concept, dozens of aviation applications have been developed. PFMA E6B, introduced in August 1999, was one of the first in its category, and still preferred all around in the professional cockpit.

PFMA is designed in a way that replicates the operation of modern aviation computers. This philosophy is intended, not only to maintain the look and feel of airplane avionics, but also to familiarize student pilots to systems operations, that will be present in all future interactions with the cockpit.

Main interface



Phone Interface



iPad / Tablet Interface

1- Page Title

2- Editable Field

- a) Blank field. (Light Blue)
- b) Field entered by user. 263 (Green)
- c) Calculated value. 438 (Light Blue)
- d) Default value or constant. 1.0 (Blue)

3- Non Editable Field

- a) Blank field. (White)
- b) Calculated value. 33629 (White)

4- Page/Option Selector

- a) Navigate to specific page. < MENU (White)
- b) Cycle through options in the Setup pages. : ▼ FEET (Blue)

5- Scratchpad

Where you enter data using the keypad

6- Annunciator

- b) TIMER At least one timer is running
- b) MESSAGE There is a System Message (showed in the Scratchpad) that needs user attention (i.e. INVALID ENTRY)

Main interface

**1- Line Selectors Keys (LSK)**

Pressing any of these keys has six possible effects.

- If data shown is a "Page selector" (i.e. "< WIND"), the corresponding page will be displayed.
- If any value is already present in the Scratchpad, and an editable field is selected, the Scratchpad value, if valid (view "Field validation" section in the "Basics" chapter), will be entered in that field.
- If "CLR" is displayed in the Scratchpad, and a value exist in an editable field, it will be erased.
- If "CNV" is displayed in the Scratchpad, a CONVERT Page will be displayed for the field selected.
- If data is already present in a field, and the Scratchpad is empty, field value will be copied to the Scratchpad.
- If data shown is followed by a "*" character (i.e. STOP BLOCK *), it will trigger the specified action.

2- Configurable Shortcut Keys

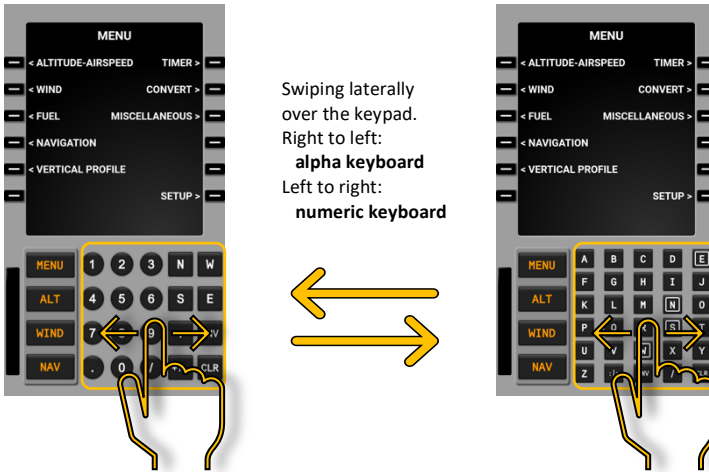
Use these keys to fast access any of the configurable (Setup → Operation) pages.

3- Numeric Keypad**4- North, South, West, East Keys (phone interface)****5- Miscellaneous Keys**

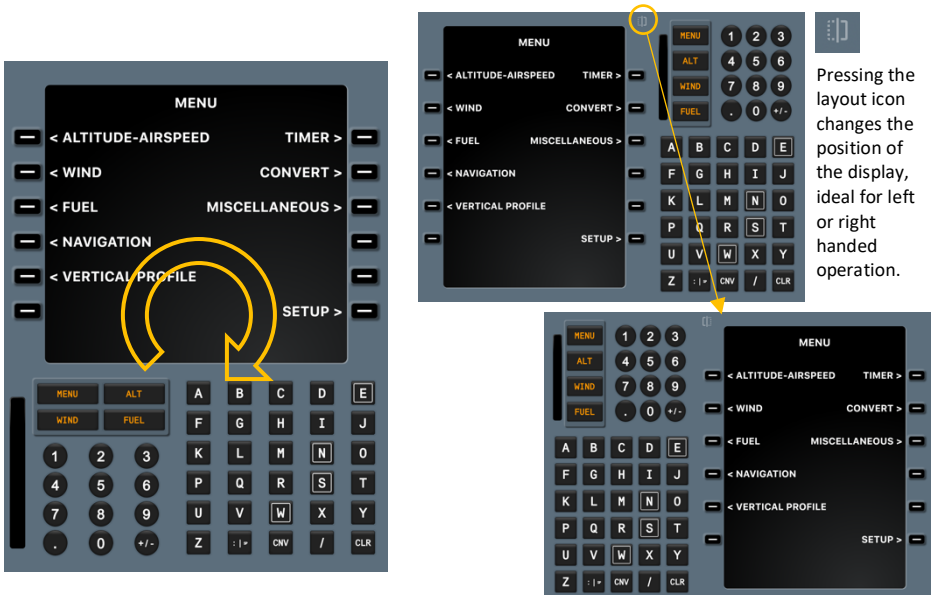
- CNV: Enter CNV in the Scratchpad and select any data field to access the corresponding CONVERT Page.
- CLR: Erases digit by digit the Scratchpad. Press and hold more than 2 seconds to erase the entire content. If the Scratchpad is blank, it inserts CLR to the Scratchpad.
- ":" | "sp" Time and coordinates Hours-Minutes separator. (sp: space key in tablet interface)
- "+/-" Sign symbol.

Phone and Tablets interface

Phone interface keyboard selection:



Tablet interface portrait and landscape modes:



Basics

Scratchpad

The way to enter data into PFMA E6B is thru the Scratchpad. Every keyboard push is displayed in the lower part of the screen, from where the selection of one of the line selectors keys, assigns the value into any of the fields.

In some situations, system messages may be displayed in the Scratchpad (i.e. Invalid Entry message: when an out of range value was entered). You may delete this message by selecting the “CLR” key.

Line Selector Keys (LSK)

On both sides of the display, there are six line selector keys. Each key corresponds to one field that may contain a variable, list of data (scrollable with each press) or a selectable function (i.e. Navigate to another screen, Start of a timer, etc.).

Data entered or calculated in one page, when applicable, will be carried on to any other page that uses the same data field. When needed, selecting a line selector key adjacent to any field with data on it, will copy that value to the scratchpad, making it available to be entered on another line or page.

CLR (Clear) key

Pressing the “CLR” key with text displayed on the scratchpad will clear one character at a time. Keeping the “CLR” key pressed for more than two seconds, will erase content from the scratchpad immediately.

If the scratchpad is empty, pressing the “CLR” key will write “CLR” to the scratchpad. If you keep pressing the “CLR” key for more than two seconds, “CLR ALL” will replace the bottom text.



Subsequentially, selecting any line selector key will erase the corresponding field data, and in case “CLR ALL” is displayed in the scratchpad, selecting any line selector key will erase all current page fields data.

CNV (Convert) key

The “CNV” key has multiple functions depending on the values present on the scratchpad.

- 1- Blank scratchpad: pressing “CNV” key will write “CNV” to the scratchpad. With “CNV” displayed in the scratchpad, selecting any line selector key pointing to a data field, will call the CONVERT page corresponding to the data field unit.
- 2- Numeric value: pressing “CNV” key with a numeric value displayed on the scratchpad, will cycle between the decimal value and its hour:minutes:seconds representation (i.e. 2.14 ↔ 02:08:24).
- 3- Mathematic expression: pressing “CNV” key with a mathematic expression displayed on the scratchpad will compute and show the result, replacing the original text.

Basics

Annunciator

To the left of the keyboard, a mini display will announce with the word “MESSAGE” when a system message is waiting user’s attention on the scratchpad.

This annunciator also displays a “TIMER” prompt, when a timer/chronograph is running in the “TIMER” page.

Quick navigation buttons

Below the main screen, there are four quick navigation buttons that let you access most used pages. You may configure these buttons in the “OPERATION” page, from the “SETUP” menu.

**Field validations**

When you enter data into an editable field, the value entered is validated for formatting and range consistency. If validation parameters are not fulfilled, an “INVALID ENTRY” message replaces the Scratchpad content.

Ranges

- a) Altitude: -2,000 – 70,000 feet
- b) Airspeed: 1 – 999 knots
- c) Mach: 0 – 0.999
- d) Temperature: -90 °C – 90 °C
- e) Heading/Course: 0 – 360
- f) Time: 0 – 99:59:59

Formatting

- a) Time
 - HH:MM:SS
 - HH:MM.S
 - HH.M
 - HH

Basics

b) Geographical Coordinates (LAT/LON)

N(S)DD:MM:SS/W(E)DDD:MM:SS → i.e. S33:23:24/W70:47:06

N(S)DD:MM.S/W(E)DDD:MM.S → i.e. S33:23.4/W70:47.1

N(S)DD.M/W(E)DDD.M → i.e. S33.4/W70.8

Interface color themes

You may select different color themes from the “OPERATION” setup page. This selection will change the overall look of the application.

Units

PFMA E6B uses a comprehensive, flexible and full featured unit system. You can define your preferred unit system for every data field throughout the application, and may access alternative converted unit at any time from within a calculation page.

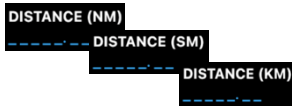
If you need to convert a specific value, you may do so, by selecting any of the multiple convert pages available from the Convert menu, few clicks away.

The following table shows different units available within PFMA E6B:

Measure	Units
Distance	Kilometers (KM) – Nautical Miles (NM) – Statute Miles (SM)
Altitude	Meters (MT) – Feet (FT) – Inches (IN)
Speed	Kilometers per hour (KMH) – Knots (KTS) – Miles per hour (MPH)
Rate	Meters per second (MT/S) – Feet per minute (FT/MIN)
Pressure	Inches Hg (inHg) – Hectopascals (hPa) – Millimeters Hg (mmHg)
Temperature	Celsius (°C) – Fahrenheit (°F)
Volume	Gallons (GAL) – Liters (LT) – Imperial Gallons (IMPG)
Weight	Pounds (LB) – Kilograms (KG)
Fuel Density *	Kilograms per liter (KG/LT) – Pound per liter (LB/LT) – Kilograms per gallon (KG/GAL) – Pound per gallon (LB/GAL)

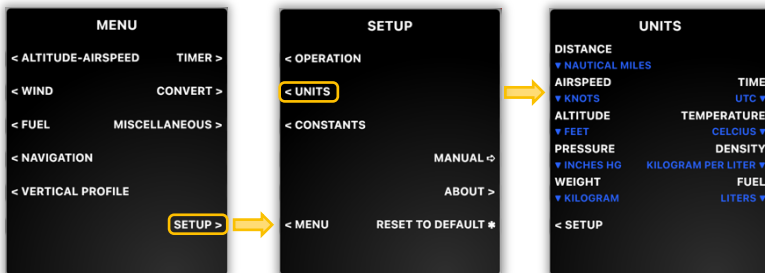
* For volume calculations in kilograms and pounds

Every data field where a measuring unit is applicable, will show the selected unit to the right of field title, between parenthesis.



Unit preferences

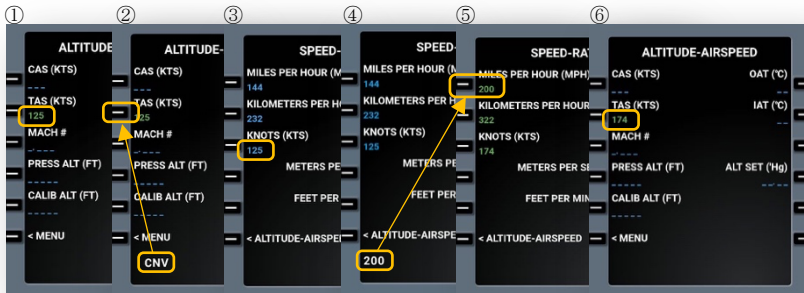
You can select preferred units, from the setup page.



Units

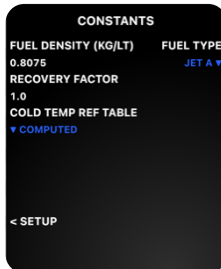
Converting units from within a calculation page:

- ① TAS field shows 125 KTS
- ② Select “CNV” key and push line selector key 2 left
- ③ Corresponding conversion page will show (in this case, the Speed-Rate convert page)
- ④ Enter the desired new value into the scratchpad (i.e. 200 MPH)
- ⑤ Select the line selector key adjacent to the desired unit (Miles per hour)
- ⑥ Select “Altitude-Airspeed” prompt (lsk 6 left) to return to calculation page.
- ⑦ TAS field is now refreshed to the converted value (MPH → KTS).



Constants

PFMA E6B uses some constants values and reference tables in some formulas. You may change these from the “SETUP” menu, selecting “CONSTANTS” page.



Note:

If you change any constant, you may return to the default values by pressing “RESET TO DEFAULT” prompt at the “SETUP” page (this will reset any changes made to the default settings).

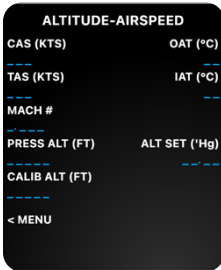
Calculations

PFMA E6B's main objective, is to put in the hand of pilots, formulas and functionality historically provided by Dalton computers, also known as E6Bs. Nevertheless, calculations from our application are not limited to what traditional E6Bs provide, but expands to a complete and evergrowing list of formulas, table lookups and operations, that most civil and commercial pilots use on everyday basis.

To use any of the provided utilities, you have to navigate to the applicable page, where entering known data will automatically execute calculations, and display new values as computations are made.

As you enter values to the fields, results appear as soon as minimum data is available to fulfill formulas. Some fields, previously hidden, are revealed when formulas generate a displayable result. Hidden fields are not editable after they are shown.

Altitude and Airspeed



Calibrated airspeed (CAS): is indicated airspeed corrected for instrument and position error.

True airspeed (TAS): is the speed of the aircraft relative to the air mass through which it is flying.

MACH #: the ratio of the speed of the aircraft to the speed of sound in the surrounding air.

Pressure altitude (PRESS ALT): the altitude of the aircraft corresponding to a given pressure.

Calibrated altitude (CALIB ALT): the altitude of the aircraft corrected for nonstandard atmospheric conditions. It is the actual height above mean sea level.

Outside air temperature (OAT): refers to the temperature of the air around an aircraft, but unaffected by the passage of the aircraft through it (also known as static air temperature SAT).

Altimeter setting (ALT SET): is the value of the atmospheric pressure used to adjust a pressure altimeter so that it indicates the height of an aircraft above a known reference surface.

Worked example:

You plan to fly 125 knots CAS, 8,500 feet, and -5°C OAT.

Procedure:

- Enter "125" and select line selector key 1 left.
- Enter "8500" and select line selector key 4 left
- Enter "-5" and select line selector key 1 right

Results:

- Tas: 141 KTS
- Mach #: 0.221
- IAT: -2 °C
- ISA Dev: -3 °C
- Density altitude: 8,123 ft

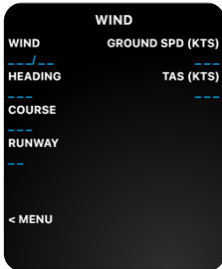


Additional fields:

Isa deviation (ISA DEV): is the difference between the actual temperature and the ISA temperature for certain altitude.

Density altitude (DENSITY ALT): is the altitude relative to standard atmospheric conditions at which the air density would be equal to the indicated air density at the place of observation.

Wind



Wind direction and speed (WIND): reported or calculated wind direction and speed.

Heading: is the direction that airplane’s nose is pointed.

Course: is aircraft's track over the ground.

Runway: two digit designator of a runway main orientation.

Ground speed (GROUND SPD): is the horizontal speed of an aircraft relative to the Earth's surface.

True airspeed (TAS): is the speed of the aircraft relative to the air mass through which it is flying.

Worked example:

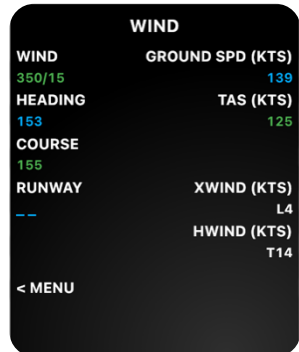
What is the heading given a 155° course, 125 kts TAS, with winds of 350° wind direction and 15 kts wind speed?

Procedure:

- Enter “155” and select line selector key 3 left
- Enter “350/15” and select line selector key 1 left.
- Enter “125” and select line selector key 2 right

Results:

- Heading: 155
- Ground Spd: 139 KTS
- XWind: Left 4 KTS
- HWind: Tail 14 KTS

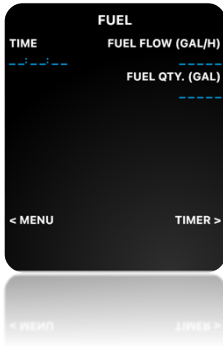


Additional fields:

Cross wind (XWIND): is wind’s perpendicular component to the line or direction of travel. Left and right components are represented by a “L” or “R” letter to the left of the calculated cross wind.

Head wind (HWIND): is wind’s longitudinal component to the line or direction of travel. Head or tail wind components are represented by a “H” or “T” letter to the left of the calculated “H”ead or “T”ail wind.

Fuel



Time: endurance with format HH:MM:SS.

Fuel flow: quantity of fuel burned per hour.

Fuel quantity (FUEL QTY.): quantity of fuel burned or required.

Worked example:

How much fuel will burn if you fly 02:45:00, at a fuel rate of 17.8 gal/hr?

Procedure:

- Enter “2:45:00” and select line selector key 1 left
- Enter “18” and select line selector key 1 right.

Results:

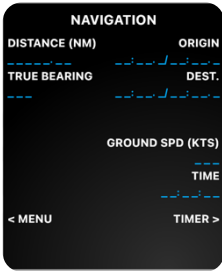
- Fuel quantity: 49 GAL.

Notes:

For convenience, in some pages you will find a “TIMER >” prompt on the bottom right field. This way is easier to access time data generated on the Timer’s page, or to use an endurance value to start a convenient countdown.



Navigation



Distance: ground distance between two points.

True bearing: angle between the true north and the airplane.

Origin: geographic position represented by latitude and longitude values. In case you enter a position using four letter ICAO airport identification, the field title will change to reflect the airport id.

Destination (DEST.): geographic position represented by latitude and longitude values. In case you enter a position using four letter ICAO airport identification, the field title will change to reflect the airport id.

Ground speed (GROUND SPD): is the horizontal speed of an aircraft relative to the Earth's surface.

Time: duration calculated or measured to travel a distance at the given ground speed.



Worked example:

What is the distance, initial bearing and time required to fly between KJFK and KLAX (33°57' North, 118°24' West) at 430 KTS?

Procedure:

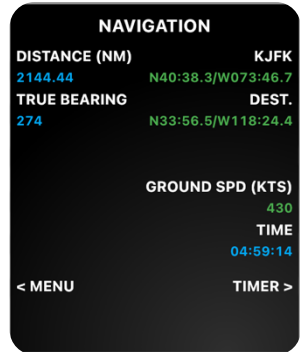
- Enter "KJFK" and select line selector key 1 right.
- Enter "N33:56.5/W118:24.4" and select line selector key 2 right.
- Enter "430" and select line selector key 4 right

Results:

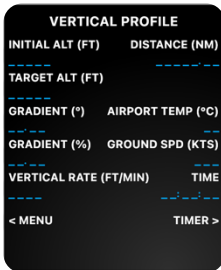
- Distance: 2144.44 NM
- True bearing: 274
- Time: 04:59:14

Notes:

When using a phone device, where screen real state is limited, you can scroll between numeric and alpha keypad, by swiping left or right over any portion of the keyboard (refer to "Phone and Tablet interface specifics" chapter).



Vertical Profile



Initial altitude (INITIAL ALT): starting altitude at which the airplane will begin a descent/climb.

Target altitude (TARGET ALT): target altitude to compute a vertical descent/climb profile.

Gradient: degrees or percentage angle of climb/descent.

Vertical Rate: amount of altitude variation in a given time.

Airport temperature (AIRPORT TEMP): reference airport temperature.

Distance: ground distance required to complete the climb/descent at the defined gradient.

Ground speed (GROUND SPD): is the horizontal speed of an aircraft relative to the Earth's surface.

Time: duration calculated or measured to travel a distance at the given ground speed.

Worked example:

An RNAV approach has a crossing altitude at IAF of 5,000 ft, with an altitude over threshold of 1,600 ft. With a descent profile of 3 degrees, where do I have to start final descent?

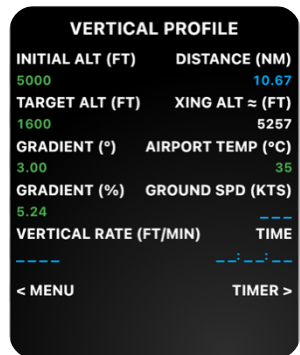
Bonus information: Today is a hot summer day, and the reported airport temperature is 35° Celsius.

Procedure:

- Enter “5000” and select line selector key 1 left.
- Enter “1600” and select line selector key 2 left.
- Enter “3” and select line selector key 3 left.
- Enter “35” and select line selector key 3 right.

Results:

- Distance: 10.67 NM
- Approximate crossing altitude at IAF: 5,257 FT (this is a nice to know information to consider: you will be flying almost 300 ft above profile on uncompensated Baro-Vnav systems!)



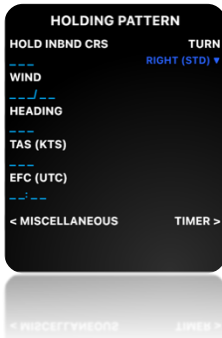
Notes:

The data inserted in the degrees gradient field, will automatically calculate the percentage gradient field (and vice versa). This is because, both values are different representations of an angle.

Additional fields:

Crossing altitude (XING ALT ≈): estimated altitude at which the airplane will be crossing initial fix. This value is not precise, since it is calculated with airport’s temperature and a standard temperature lapse rate.

Holding Pattern



Hold inbound course (HOLD INBND CRS): holding pattern main course, or the course the airplane must be flying after second turn or once established on the holding pattern.

Wind direction and speed (WIND): reported or calculated wind direction and speed. **Heading:** is the direction that airplane’s nose is pointed.

True airspeed (TAS): is the speed of the aircraft relative to the air mass through which it is flying.

Expect further clearance (EFC): time at which a pilot can expect to receive clearance beyond a clearance limit, in this case, the time expected to leave the holding pattern.

Holding direction of turn (TURN): the direction of subsequent turns once established on the holding pattern and overflying the holding reference fix/navaid. Possible values: Right (standard) – Left.

Worked example:

You are flying toward a holding fix. Published inbound course is 176 standard turns. Your airplane heading is 320° and true airspeed is 210 knots. The reported aloft wind is 230°/25 knots.

Bonus information: along with ATC clearance to join the holding pattern, you are informed of an “expected further clearance” in the next 25 minutes (03:25 UTC).

Procedure:

- Enter “176” and select line selector key 1 left.
- Enter “230/25” and select line selector key 2 left.
- Enter “320” and select line selector key 3 left.
- Enter “210” and select line selector key 4 left.
- Enter “03:25” and select line selector key 5 left. (To get same display as in this example, set an UTC time 25 minutes in the future)
- Select or confirm selection of “RIGHT (STD)” at field 1 right.

Results:

- Procedure (PROC): Teardrop
- Inbound Heading: 182°
- Outbound Heading: 341°
- Outbound Correction: -5 SEC/MIN

Additional fields:

Hold Procedure (PROC): predetermined maneuver which keeps aircraft within a specified airspace while entering the holding pattern.

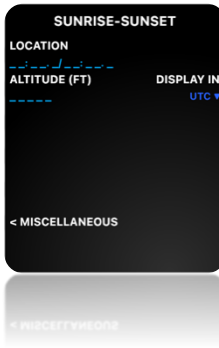
Inbound heading (INBOUND HDG): heading to fly toward holding fix to correct for wind effect.

Outbound heading (OUTBOUND HDG): heading to fly away from holding fix once established in the holding pattern, to correct for wind effect.

Outbound correction (OUTBD CORR): seconds per minute to add/subtract to the outbound leg to correct for wind effect.



Sunrise - Sunset



Location: geographic position represented by latitude and longitude values. In case you enter a position using four letter ICAO airport identification, the field title will change to reflect the airport id.

Altitude: altitude or elevation of airplane/location. (**Note:** most official calculations of civil twilights at any station, are made without taking in consideration aerodrome elevation, please cross check published tables before using this information).

Time correction (DISPLAY IN): this field will define the reference time used for the sunrise – sunset calculations. The two options are UTC and SYSTEM TIME.

Worked example:

Your current airplane position is over Santiago de Chile (33°20.5' South, 070°40.5' West), flying at an altitude of 33.000 feet. Current time is 17:38 UTC.

Procedure:

- Enter "S33:20.5/W070:40.5" and select line selector key 1 left.
- Enter "33000" and select line selector key 2 left.
- Select or confirm selection of "UTC" at field 2 right.

Results:

- Civil twilight start: 09:40 UTC
- Sunrise: 10:05 UTC
- Sunset: 23:01 UTC
- Civil twilight end: 23:26 UTC
- Time to next twilight: 05:47:54

Additional fields:

Civil twilight start: instant in the morning when the centre of the Sun is at a depression angle of six degrees (6°) below an ideal horizon.

Sunrise: instant in the morning under ideal meteorological conditions, with standard refraction of the Sun's rays, when the upper edge of the sun's disk is coincident with an ideal horizon.

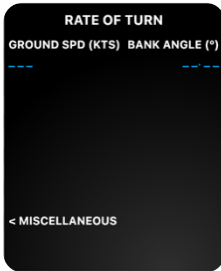
Sunset: instant in the evening under ideal meteorological conditions, with standard refraction of the Sun's rays, when the upper edge of the sun's disk is coincident with an ideal horizon.

Civil twilight end: instant in the evening when the centre of the Sun is at a depression angle of six degrees (6°) below an ideal horizon.

Time to next twilight: timer indicating remaining time to next twilight (at night, before sunrise, and evening after sunset).



Rate of Turn



Ground speed (GROUND SPD): is the horizontal speed of an aircraft relative to the Earth's surface.

Bank angle: The angle between the wings and the horizon, as viewed from the rear of the airplane.

Worked example:

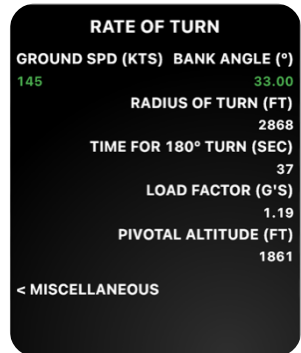
Flying at a ground speed of 145 Knots, we start a coordinated turn with a bank angle of 33°.

Procedure:

- Enter "145" and select line selector key 1 left
- Enter "33" and select line selector key 1 right.

Results:

- Radius of turn: 2,868 FT
- Time for 180° turn: 37 SEC
- Load factor: 1.19 G'S
- Pivotal Altitude: 1,861 FT



Additional fields:

Radius of turn: is the horizontal distance that an aircraft uses to turn.

Time for 180° turn: time that takes to complete a 180° turn.

Load Factor: is the ratio of the instantaneous load over the normal load associated with the Earth's gravity.

Pivotal altitude: is the specific altitude at which, when an airplane turns at a given groundspeed, from the pilot's point of view, the plane's wingtip seems to pivot around a single fixed reference point on the ground.

Cold Temperature Correction

Calculated minimum safe altitudes/heights must be adjusted when the ambient temperature on the surface is much lower than that predicted by the standard atmosphere. PFMA E6B let you accomplish this by using the “Cold Temp Correction” page. You may select “Computed” values, or specific lookup tables.

REPORTED TEMP °C	Height above the elevation of the altimeter setting sources (feet)															
	Aerodrome Temperature °C		200	300	400	500	600	700	800	900	1 000	1 500	2 000	3 000	4 000	5 000
+10	0															
0	+10															
-10	+0															
-20	-10															
-30	-20															
-40	-30															
-50	-40															



Airport temperature (AIRPORT TEMP): reference airport temperature.

Airport elevation (AIRPORT ELEV): reference airport elevations.

Initial approach fix minimum altitude (IAF): minimum crossing altitude or height at fix.

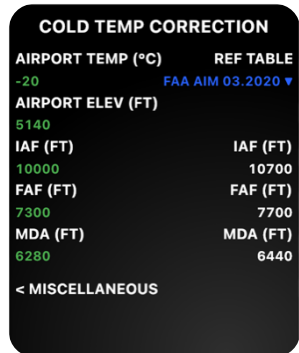
Final approach fix minimum altitude (FAF): minimum crossing altitude or height at fix.

Minimum descent altitude (MDA): is a specified altitude or height in an approach below which descent must not be made without the required visual reference.



Worked example:

You are planning to fly an RNAV (GPS) approach to runway 06 at Elko Regional Airport. Current airport temperature is -20° Celsius, this requires you to make altitude corrections to approach minimums.



Procedure:

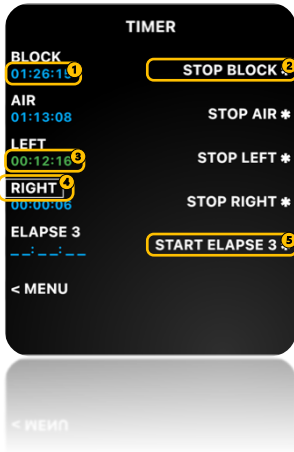
- Enter “-20” and select line selector key 1 left
- Enter “5140” and select line selector key 2 left.
- Enter “10000” and select line selector key 3 left.
- Enter “7300” and select line selector key 4 left.
- Enter “6280” and select line selector key 5 left.
- Select or confirm selection of “FAA AIM 03.2020” at field 1 right.

Results:

- IAF correction: 10,700 FT
- FAF correction: 7,700 FT
- MDA correction: 6,440 FT

Timers

PFMA E6B has a versatile and powerful timer function. You may define as many as three timers and five chronographs, to keep track of every event in your flight (i.e. block and air time, fuel tank usage, etc.)



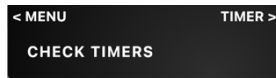
- 1 **Chronograph/Elapsed time (blue):** elapsed time from zero or an entered value.
- 2 **Stop prompt:** you stop a chronograph or a countdown timer by pressing this line selector key.
- 3 **Timer (green):** active or entered timer value.
- 4 **Elapsed/Timer name:** you can define a name for a chronograph or timer for the current line. Default names are “Block”, “Air”, “Elapse 1”, “Elapse 2” and “Elapse 3”. Entered names will reset to defaults once you clear the corresponding field value. When a countdown timer is near its completion, a box will blink around the field name to alert of the impending event.
- 5 **Start prompt:** you start a chronograph or a countdown timer by pressing this line selector key.

Operation

To start or stop a running chronograph, you must select the right line selector key adjacent to the field you want to start/stop. In case the field is empty, an elapsed chronograph will start from zero. On the first two fields (Block and Air fields), you may insert a starting value (this is useful in case you forgot to start a chronograph at the beginning of the flight and want to keep track of elapsed time from a later point in time).

For the last three fields, if you enter a time value, this will arm a countdown timer and will change the field color to green. You may start this timer at any time using the right selector key adjacent to the field.

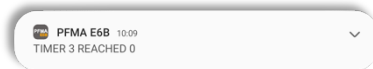
When a running countdown timer reaches 0, and you are navigating any application page other than “Timer” page, a prompt will appear in the Scratchpad alerting you of the timer reaching zero. In case the current page does not have a navigation field pointing to the “Timer” page, one will be presented on the lower right field.



If the application is running in the background, and notifications permissions were previously accepted, you will be notified of the timer countdown completion. Clicking on this notification will switch automatically to PFMA E6B’s “Timer” page.



iOS Notification



Android Notification

Abbreviations

A	
AIRPORT ELEV	Airport Elevation
AIRPORT TEMP	Airport Temperature
ALT SET	Altimeter Setting
C	
C	Celsius
CALIB ALT	Calibrated Altitude
CAS	Calibrated Airspeed
CNV	Convert
CLR	Clear
CLR ALL	Clear All
D	
DENSITY ALT	Density Altitude
DEST	Destination
E	
EFC	Expected Further ATC Clearance
F	
F	Fahrenheit
FAF	Final Approach Fix
FT	Feet
FT/MIN	Feet Per Minute
FUEL QTY	Fuel Quantity
G	
GAL	Gallon
GPS	Global Positioning System
GROUND SPD	Ground Speed
H	
HOLD INBND CRS	Holding Inbound Course
HWIND	Head Wind Component
I	
IAF	Initial Approach Fix
IAT	Indicated Temperature

IMPG	Imperial Gallon
IN	Inch
INBOUND HDG	Inbound Heading
inHg	Inch Of Mercury
INITIAL ALT	Initial Altitude
ISA	International Standard Atmosphere
ISA DEV	ISA Deviation
K	
KG	Kilogram
KG/GAL	Kilograms Per Gallon
KG/LT	Kilograms Per Liter
KJFK	John F. Kennedy Airport OACI Designator
KLAX	Los Angeles International Airport OACI Designator
KM	Kilometer
KTS	Knot
KPH	Kilometers Per Hour
L	
LB	Pound
LB/GAL	Pound Per Gallon
LB/LT	Pound Per Liter
LL	Low Lead
LSK	Line Selector Key
LT	Liter
M	
MDA	Minimum Descent Altitude
mmHg	Millimeter Of Mercury
MPH	Miles Per Hour
MT	Meters
MT/S	Meters Per Second
N	
NM	Nautical Mile

Abbreviations

O	
OAT	Outside Air Temperature
OUTBD CORR	Outbound Time Correction
OUTBOUND HDG	Outbound Heading
P	
PRESS ALT	Pressure Altitude
R	
REF TABLE	Cold Temperature Correction Reference Table
RNAV	Area Navigation
S	
SAT	Static Air Temperature
SM	Statute Mile
SP	Space
STD	Standard
SYS	System
T	
TAS	True Airspeed
TAT	Total Air Temperature
TEMP	Temperature
U	
UTC	Universal Coordinated Time
X	
XING ALT	Crossing Altitude
XWIND	Cross Wind Component

Version History

1.5

- * Reengineered interface to adapt to multiple screens resolutions
- + Added Android compatibility
- + Added iPad/Tablet interface
- + Added airport coordinates database
- + Added local product manual
- Fixed some bugs

1.2.6

- + Added 64 bit compatibility

1.2.5

- Timers upgraded
- + Added approximate crossing altitude calculation to the Vertical Profile page (when airport temperature is specified)
- Fixed some bugs

1.2.4

- Bug fix on IOS6

1.2.3

- + Added Cold Temperature Correction tables/formula under Miscellaneous menu.
- + Added conversion units:
 - * Meters per second
 - * Feet per minute
- Minor bug fixes

1.2.2

- + Added Time conversion page.
- + Added "Inch" field to the Distance-Altitude page.
- + Added Fuel Type field to simplify selection of fuel density constants.
- + Added option for clearing all values entered on a given page. Just press and keep pressed the CLR button for a couple of seconds. This will change the "scratchpad" to "CLR ALL". Select any editable field to clear all data.
- Divided Altitude conversion page into Airspeed and Distance-Altitude pages.
- Distance-Altitude convert page: linked values from Distance fields to Altitude fields.
- Updated icons for Retina display.

Fixes:

- * Fixed bug that prevented negative temperatures insertion in some localized iPhones.
- * Sunrise-Sunset: Fixed error in time to next twilight calculations

1.2.1

- + Added themes support (one new theme... more as per user request). Configure selecting SETUP->OPERATION->THEME.
- + Added load factor and pivotal altitude calculation in Radius Of Turn Page.
- Fixed "<" and ">" characters not showing properly in some devices.

Version History

1.2

- + Holding Patterns
- + Sunrise-Sunset
- + Rate of turn
- + Basic math expressions calculator. Implemented as a new scratchpad usage feature.

Improved functionality and fixes:

- Added extra capacity for fuel values greater than 300 k pounds. (Very big birds)
- Minor changes to the Vertical Profile page calculations for better functionality
- Some screens rearranged for more legibility
- Minor bugs and misspelling fixes

1.1

- + Added Vertical Profile formulas
- + Added Pressure Altitude calculation
- + Added configurable fuel density units
- + Added link to online user manual
- Constants moved to Setup page
- * Fixed bug in westbound nav calculations

1.0.1

- + Added Pound (LB) Unit to Fuel Calculations
- + Added Homepage Link in About Screen
- * Fixed bug that prevented entering fuel density
- * Minor bugs fixed

1.0

Initial release