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Flight Computer



True Course

Distance

47.5390° N, 122.1557° W

Time = Distance / GroundSpeed

CG = 193,193 / 2,055

TAS = 146 kts

MC = TC +/- VAR

Fuel Flow = (11.5 + 10.9) / 2 = 11.2 gallons / hr

Weight x Arm / 100 = Moment / Index

Time

USER'S GUIDE

asa2fly.com/CX3

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USER'S GUIDE

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INTRODUCTION

ASA's CX-3 is the next generation aviation flight computer. Using the latest microchip and display technologies, the CX-3 features make it the most versatile and useful aviation calculator available.

May be used during FAA and Canadian Knowledge Exams. The CX-3 complies with FAA Order 8080.6 and Advisory Circular (AC) 60-11, "Test Aids and Materials That May be Used by Airman Knowledge Testing Applicants"; therefore, you may bring the CX-3 with you to the testing centers for all pilot, mechanic, and dispatcher FAA exams.

Numerous aviation functions. You can calculate everything from true airspeed, Mach number, fuel burn, and holding patterns to headwind/crosswind components, center of gravity (CG), and many more. The menu structure provides easy entry, review, and editing within each function. Multiple problems can be solved within one function.

User-friendly. The color LCD screen displays a menu of functions and the inputs and outputs of a selected function with easy-to-read menus and data displays. The inputs and outputs of each function are separated on the display screen to distinguish between entered numbers and calculated values, along with their corresponding units of measurement. The menu organization reflects the normal process for planning and executing a flight. The result is a natural flow from one function to the next with a minimum of keystrokes: to plan a flight, simply work from the menus in sequential order as you fill in your flight plan form.

Non-volatile memory. All settings, including aircraft profile, weight and balance data, trip plan data, values entered by the user, and calculations performed by the device, will be retained until the batteries are removed or the user performs a memory reset. Follow the procedure outlined in Appendix C on page 20 to back up and restore memory.

Ergonomic design. The CX-3 features a simple keyboard and slim design. The non-slip cover protects your computer inside a flight bag and fits on the back of the unit for easy storage while in use.

Unit conversions. The CX-3 has 12 unit conversions: Distance, Speed, Duration, Temperature, Pressure, Volume, Rate, Weight, Rate of Climb/Descent, Angle of Climb/Descent, Torque, and Angle. These 12 conversion categories contain 38 different conversion units for more than 100 functions.

Timers and clocks. The CX-3 has two timers: a stopwatch that counts up and a countdown timer. The stopwatch can be used to keep track of elapsed time or to determine the time required to fly a known distance. The countdown timer can be used as a reminder to switch fuel tanks, or to determine the missed approach point on a non-precision instrument approach. An internal clock continues running even when the flight computer is turned off. UTC and local time can be displayed, and the time can be set with UTC, destination, or local time.

Interactive functions. The CX-3 is designed so the functions can be used together. You can perform "chain" calculations where the answer to a preceding problem is automatically entered in subsequent problems. Standard mathematical calculations and conversions can be performed within each aviation function.

Up to date. Check often for new CX-3 updates online at www.asa2fly.com/CX3. The update procedure is outlined in Appendix B on page 19 of this guide.

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KEYPAD

The CX-3's simple keypad is possible because of the sophisticated display screen and menu structure. The advantages of such a keypad are twofold: A calculator with 35 keys is simpler to use than one with 50 or more, and it is small enough to fit in a shirt pocket. Both advantages make the CX-3 useful to pilots in day-to-day operations.

0 1 2 3 4 5 6 7 8 9 — Numeric keys for entering numbers.

÷ x − + — Standard arithmetic operators.

FLT PLAN TIMER CALC W/B — Selects each of the five main menus.

^ v — Used to navigate through the menu structure.

□ — Power to turn CX-3 ON/OFF. Select highlighted menu item, or enter current input line when function is requesting input.

★ — Favorites: sets a saved function for easy recall.

BACK — Changes display to the previous menu.

SET — Use to access the CX-3's preferences settings (Theme, Backlighting, Time Set, Units, Aircraft Profile, etc.)

M — Memory function for saving numbers.

SET UNIT — Sets the current units for a given function.

CONV UNIT — Converts the current value into another unit.

C — Clears current input line. In calculator mode, clears the math completely.

BKSP — Deletes the last entered value.

: — Separates hours from minutes and minutes from seconds on time inputs. For example, 2 hours, 38 minutes and 45 seconds will display as 02:38:45.

± — Changes sign (positive or negative) of current input line.

. — Decimal point.

√ — Activates the square root function.

= — Completes the calculation.

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SCREEN OVERVIEW

The status bar at the top of the screen includes the name of the current menu function, display time, and battery indicator. Below the status bar is the submenu identifying the function name. The highlighted line item indicates the currently selected function. The bottom line will be cut in half to show that there are more fields below.

◗ LINE ICONS

Line icons indicate data that is missing, entered, solved for, or entered and saved elsewhere. Line icons will change as values are entered and calculations are solved.

- A green icon with a check mark indicates entered data.
- A green icon with an equals sign indicates calculated data.
- An amber icon indicates unsolved data; the unsolved field is shown on the right side of the screen with 2 dashes (where the value will appear when entered).
- A blue circle icon indicates repeated global values if more than one leg is added to the trip.

◗ BATTERY INDICATOR

The battery level is checked every 15 seconds and multiple readings are taken before the level is updated. The battery indicator will display four levels: 100%, 75%, 50%, and 25%. The icon will display as white unless the battery level is at or below 25%, at which point it will display as red.







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GETTING STARTED

PRESS THE ORANGE POWER button ⏻ located in the middle of the CX-3 to turn the flight computer on. Hold the orange power button for 3 seconds to turn the flight computer off. The CX-3 keypad backlighting will automatically turn off after 3 minutes of inactivity; backlighting can be turned back on by pressing any key. If left inactive for 10 minutes, the CX-3 will turn off; information will be saved and you can resume by pressing the power button. This feature prevents battery exhaustion if the computer is inadvertently left on. When first turned on, the CX-3 will return to the most recent menu used before the device was last turned off.

◗ SETTING PREFERENCES

Press the SET button, scroll to the item you want to set, and tap enter.

Theme

Choose from three options for maximum visibility while in use.

— **Standard:** Black background, white lettering
— **Night:** Black background, green and white lettering
— **Daylight:** White background, black lettering

Backlighting

Choose from four options to improve visibility given the ambient light conditions.

— **Normal:** Medium backlit screen; keypad not lit.
— **Daylight:** Maximum backlit screen; keypad not lit.
— **Dusk:** Medium-low backlit screen; keypad lit.
— **Night:** Low backlit screen; keypad lit.

*(Note: Normal backlighting will conserve battery power for the longest period.)

Time Set

The CX-3 uses a 24-hour clock and does not account for daylight saving time. The internal clock lets you set both local and UTC time and will continue running even with the calculator turned off. The CX-3 contains a single clock representing Coordinated Universal Time (UTC), also known as Greenwich Mean Time (GMT) or Zulu time. There are two steps to set the internal clock. First, set the UTC or Local time and Destination time. Next, set the Timezone for both local and destination.

If the time is after noon, you will need to enter the time based on a 24-hour clock; for example, 2 p.m. would be 14:00:00. To set the clock to 1:30 p.m. in the Pacific Time Zone:

1. Press SET button, scroll to Time Set and tap enter.
2. Scroll to Time Zone: Local and tap enter.
3. Scroll up to select the Pacific Time Zone and tap enter.
4. Scroll to Time Set: Local.
5. Input 1 3 : 3 0 : and tap enter.
6. You will now see UTC 21:30:00 and Local 13:30:00.
7. Scroll to Time Zone: Destination and tap enter to set a destination Time Zone

The display time on the top status bar will show the time as displayed under Time Set: Local. If you would like the status bar to display UTC time, select “GMT, Western European” under Set Time Zone: Local. Note that a Z now appears after the display time to signify that all times shown are UTC.

Default Units

Set the device to default to U.S. or Metric units.

Unit Changes

This allows for units to be changed for a given calculation per screen or per line item. For example, “Individually” will modify the unit for a single line in a given calculation while “Per Screen” will change all instances of that unit for a given calculation.

Favorite

This allows for creating a shortcut to a specific function. This shortcut will be saved and accessed by pressing the ★ button.

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Aircraft Profile

This feature allows for entering specific data for the airplane most frequently used for quick reference and input when calculating weight and balance.

— K: The instrument calibration factor of the airplane. This is used to calculate OAT from TAT (and vice-versa) and is dependent on airspeed. It is set to a default value of 1.0. This value is dependent on the aircraft.

— Profile Valid: This allows you to set your profile On or Off once all data is entered. If On, the aircraft profile data will be used for all weight and balance calculations.

— Empty Aircraft: Enter a reduction factor (RF). An RF of 1 means all entries are taken at face value. An RF of 100 means each moment is divided by 100 before the calculator displays it or the operator enters it; this will be taken into account when the total and CG are computed. Enter 2 out of 3 of the values for Wt, Arm, and Mom; the CX-3 will calculate the third automatically.

— Fuel (FuelAux): Type can be selected by pressing enter (Av Gas: 6 lbs., Jet Fuel: 6.84 lbs., Oil: 7.50 lbs.).

— Individual Item Arms: Enter up to three arms for pilot/passenger locations (each can be considered a row). Enter up to two cargo station locations and three custom fields available for various other required stations.

* Note that all unsolved data fields ? must contain a value for the profile to be valid. If a field is not required, simply enter a value of 0.00 (i.e., Custom 1 = 0.00 IN).

User Data

This allows you to **Cancel, Save,** and **Recall** user data.

Version

This displays the firmware version installed on the CX-3.

◗ RESETTING

To wipe the memory and reset the CX-3, remove all of the batteries. The FAA requires that all the memory in an electronic flight computer be cleared prior to use during FAA Knowledge Exams. You may want to back up your data before resetting the CX-3; see Appendix C on page 20 for instructions.

◗ USB

The CX-3 accepts a micro-type B-USB plug (not included) to connect to the computer. This feature allows users to save their settings and data. Once connected to a computer, the CX-3 will be displayed as a mass storage device when the unit is turned on. The file “data.cx3” can then be saved and reloaded back onto the CX-3 after factory defaults have been restored. Instructions for updating the CX-3’s firmware can be found in Appendix B on page 19, and the procedure for backing up and restoring data is detailed in Appendix C on page 20.



MENU SYSTEM

The CX-3 menu system is organized to reflect the natural order of flight. Simply work through the menus in sequential order as you complete your flight plan.

When a menu is displayed, the menu items can be selected by highlighting a particular choice by scrolling ^ or v followed by tapping the enter key. To return to the previous menu, press the BACK key.

You can go directly to the Flight, Plan, Timer, Calculator, and Weight & Balance menus by pressing the FLT, PLAN, TIMER, CALC, and W/B keys. Any CX-3 function can be reached with a maximum of 2 keystrokes. See Appendix D on page 21 for a quick guide to names and abbreviations of the various functions.

The computer will prompt you for the inputs with an amber question mark, and the answers will display with a green equals sign. The formulas used for these functions handle multiple units of measure. The CX-3 will convert any headings exceeding 360 to remain within 360°. For example, if you enter 390 for any heading, the CX-3 will change this to 30 once you tap enter. All math and conversion functions can be carried out on any input line.

The CX-3 remembers the most recent display of variables, whether it was an input or an answer. The CX-3 will offer these again for any subsequent function requiring the same variables for a solution. This allows for “chains” of problems, where a value that is an answer in one function will be automatically entered as input in a succeeding function. If a function is repeated, any and all input lines will be re-entered automatically by tapping enter. This allows you to repeat a calculation where only one or two inputs are changed, with minimum effort. You may delete the inputs to be changed by pressing C or simply typing in replacement numbers. Resetting the computer will delete everything in memory. This will reset all variables to zero.

The numbers displayed as inputs are the numbers used in the calculations. The CX-3 will round each input variable to two decimal places. Similarly, each function output variable is also rounded to two decimal places. This rounding procedure means the display will always be accurate for the numbers displayed and keep numbers manageable, yet will also allow for precise answers.

◗ FAVORITE

The ★ button is a shortcut to a specific function. This shortcut can be saved or changed in the settings menu and can then be quickly accessed by pressing the button.

FLT (E6-B FUNCTIONS)

◗ UNIT CONVERSIONS

Often it is necessary to convert from one unit of measurement to another. The CX-3 has 12 conversion functions that are activated by tapping the CONV UNIT key while a value has been selected. The unit labels appear to the right of the value.

— To convert 100 KM to nautical miles, press CONV UNIT until NM is displayed. The answer is 54 NM.

— To convert 200 knots to KPH (kilometers per hour), scroll down to Spd and press CONV UNIT until KPH is displayed. The answer is 370.4 KPH.

— To convert 75 minutes to hours, scroll down to Dur and press CONV UNIT until HR is displayed. The answer is 1.25 HR.

— To convert -20° Celsius to Fahrenheit, scroll down to Temp and press CONV UNIT until °F is displayed. The answer is -4°F.

— To convert 29.78 inches of mercury to mb, scroll down to Pres and press CONV UNIT until MB is displayed. The answer is 1008.47 MB.

— To convert 50 U.S. gallons to liters, scroll down to Vol and press CONV UNIT until L is displayed. The answer is 189.27 L.

— To convert 9.5 U.S. gallons per hour to liters per hour, scroll down to Rate and press CONV UNIT until LPH is displayed. The answer is 35.96 LPH.

— To convert 2,000 pounds to kilograms, scroll down to Wt and press CONV UNIT until KG is displayed. The answer is 907.18 KG.

— To convert 500 feet per minute to meters per second, scroll down to RoC and press CONV UNIT. The answer is 2.54 M/S.

— To convert 1,000 feet per nautical mile to feet per statute mile, scroll down to AoC and press CONV UNIT until FT/SM is displayed. The answer is 868.98 FT/SM.

— To convert 50 pounds per inch to kilograms per meter, scroll down to Torq and press CONV UNIT until KG M is displayed. The answer is .58 KG M.

— To convert 180.5 degrees to degrees, minutes, seconds, scroll down to Angle and press CONV UNIT. The answer is 180:30:00 DMS.



◗ ALTITUDE

Pressure Altitude

In aviation calculations, air pressure is normally specified by an altitude in a standard atmosphere, instead of pounds per square inch or inches of mercury. The altitude corresponding to a given pressure is called the pressure altitude (PAlt). An aviation altimeter displays PAlt when the altimeter setting window is adjusted to the standard atmospheric pressure at sea level, 29.92" Hg. PAlt is required to calculate true airspeed (TAS) and density altitude (DAlt).

The Altitude function calculates pressure altitude (PAlt), given the indicated altitude (IAlt) and altimeter setting (Baro) obtained from the automated flight service station (AFSS) or Air Traffic Control (ATC). An altimeter adjusted to this setting will indicate the altitude of the airfield when the aircraft is on the ground.

Problem: You are planning to fly at 4,500 feet IAlt and the current altimeter setting is 30.15" Hg. What PAlt should you use to calculate the TAS?

Solution: Press the FLT key. Highlight the Altitude line and tap enter. Enter IAlt by pressing 4 5 0 0 and tap enter. Enter the altimeter setting:

3 0 . 1 5 and tap enter.

The display will show PAlt equal to 4289 FT.



Problem: What is the PAlt at an airport with a field elevation of 5,900 feet and a 29.75" Hg altimeter setting?

Solution: Press the FLT key. Highlight the Altitude line and tap enter. Enter IAlt:

5 9 0 0 and tap enter.

Enter the altimeter setting:

2 9 . 7 5 and tap enter.

The display will show PAlt equal to 6059 FT.

Density Altitude

In aviation calculations, air density is normally specified by an altitude in a standard atmosphere, instead of pounds per cubic foot. The altitude corresponding to a given density is called the density altitude (DAlt). The Altitude function computes density altitude (DAlt) based on pressure altitude (PAlt) and the outside air temperature (OAT).

Problem: What is the DAlt at an airport with a field elevation of 5,900, 29.75" Hg altimeter setting, and 75°F OAT?

Solution: Press the FLT key. Highlight the Altitude line and tap enter. Enter IAlt:

5 9 0 0 and tap enter.

Scroll the curser to Baro and enter the altimeter setting: 2 9 . 7 5 and tap enter.

Scroll down to OAT and input 7 5, tap enter.

The display will show PAlt equal to 6059 FT and DAlt equal to 8427 FT.

◗ CLOUD BASE

The Cloud Base function computes the altitude of the cloud base above ground level (AGL). The function prompts for the dew point (Dewp) and outside air temperature (OAT) at the airfield. If you want the elevation of the cloud base above mean sea level (MSL), you must add the elevation of the airfield to the result from the Cloud Base function.

Problem: At approximately what altitude above the surface can the pilot expect the base of cumuliform clouds to be if the surface air temperature is 82°F and the dew point is 38°F?

Solution: Press the FLT key. Scroll to Cloud Base and tap enter. You are prompted for the outside air temperature (OAT). Press:

8 2 and tap enter.

You are then prompted for dew point (Dewp). Press:

3 8 and tap enter.

The answer is 10,000 FT AGL.

◗ STANDARD ATMOSPHERE

Since air pressure and air density are specified by an altitude in a standard atmosphere, you may want to find the standard atmosphere for a given altitude. The International Civil Aviation Organization (ICAO) has established standard conditions for temperature and pressure. You can enter an altitude (Alt) in the StdAtmos function and obtain the outside air temperature (OAT); pressure in inches of mercury (IN Hg); and pressure in millibars (mb) for the standard atmosphere. The StdAtmos function is valid up to 278,385 feet.

Problem: What are the standard atmospheric conditions at sea level?

Solution: Press the FLT key. Scroll to Standard Atmosphere and tap enter. You are prompted for the altitude. Press:

0 and tap enter to enter 0 feet, or sea level.

The display will show 29.92 IN HG, 59°F OAT.

Problem: What are the standard atmospheric conditions at 20,000 feet?

Solution: Select the Standard Atmosphere function. You are prompted for the altitude. Press:

2 0 0 0 0 and tap enter to input 20,000 feet.

The display will show 13.75 IN HG, -12°F OAT.

◗ AIRSPEED

Planned and Actual True Airspeed (TAS) and Mach number can be calculated and are dependent on the temperature input. Planned airspeeds require the use of outside air temperature (OAT), obtainable from the preflight weather briefing or from what you read on a thermometer on the ground. Actual airspeeds require the use of total air temperature (TAT), which is obtained by a probe having velocity with respect to the air (essentially, the thermometer in your aircraft). TAT is warmer than OAT, because of kinetic heating due to compression on the upstream side of the probe.

Planned TAS

The Airspeed function can compute the true airspeed (TAS) for a planned calibrated airspeed (CAS) with the inputs Planned CAS, OAT, and PAlt. It is important to use the OAT and PAlt at the planned flight altitude. OAT may be obtained from winds aloft forecasts. OAT can also be determined from the TAT during flight. PAlt is normally obtained from the Altitude function. The Airspeed function calculates TAS, TAT (which can be used as a cross-check with the in-flight TAT), and Mach Number (MACH).

Problem: You plan to fly 125 knots CAS, 8,500 feet PAlt, and 23°F OAT. Compute TAS and TAT.

Solution: Press the FLT key. Select the Airspeed submenu and tap enter. Scroll to CAS, input and tap enter for the planned CAS. Scroll to enter the OAT:

2 3 and tap enter. Scroll to enter the PAlt:

8 5 0 0 and tap enter to enter 8,500 feet PAlt.

The display will show 141.03 KTS TAS, 28°F TAT, and 0.221 MACH.

Actual TAS

The Airspeed function can compute true airspeed using information from instruments during an actual flight. The inputs to this function are CAS, TAT, and PAlt. The Airspeed function calculates TAS, OAT (which can be used as an input to Plan TAS and Req CAS functions), and Mach Number (MACH).

Problem: Compute the TAS at 6,500 feet PAlt, +10°C TAT, at a CAS of 150 MPH.

Solution: Press the FLT key. Select the Airspeed submenu. Convert from knots to miles per hour by scrolling down to CAS and by pressing CONV UNIT, (you will also need to convert TAT from °F to °C) then press:

1 5 0 and tap enter to input 150 MPH, then

1 0 and tap enter to input 10°C TAT, then

6 5 0 0 and tap enter again to enter 6,500 feet PAlt.

The display will show 166.64 MPH TAS, 7°C OAT, and 0.222 MACH.

Required CAS

The Airspeed function can compute the calibrated airspeed required to achieve a given true airspeed with the inputs TAS, OAT, and PAlt. The Airspeed function calculates CAS, TAT, and MACH.

Problem: What is the required CAS or MACH to obtain 150 knots TAS with 41°F OAT and 6,500 feet PAlt?

Solution: Press the FLT key. Select the Airspeed submenu. Press:

1 5 0 and tap enter to input 150 knots TAS, then

4 1 and tap enter to input 41°F OAT, and then

6 5 0 0 and tap enter to input 6,500 feet PAlt.

The display will show 135.58 KTS CAS, 46°F TAT, and 0.231 MACH.

Planned MACH#

The Airspeed function can compute true airspeed for a planned MACH with the inputs Planned MACH and OAT. It is important to use the OAT at the planned flight altitude. The Airspeed function computes TAS, and TAT (to be used as a cross-check against the in-flight TAT).

Problem: Compute TAS for 0.72 MACH and -31°F OAT.

Solution: Press the FLT key. Select the Airspeed submenu. Press:

. 7 2 and tap enter to input 0.72 MACH, and then

3 1 ± and tap enter to input -31°F OAT.

The display will now show 432.98 KTS TAS and 13°F TAT.

Actual MACH#

The Airspeed function can compute true airspeed using information from instruments during an actual flight. The inputs to this function are Actual MACH, and TAT. The Act MACH# function calculates TAS, and OAT.

Problem: Compute the TAS given 0.82 MACH with -4°F TAT.

Solution: Press the FLT key. Select the Airspeed submenu by scrolling to the Airspeed line. Tap enter. Press:

. 8 2 and tap enter to input 0.82 MACH, and then

4 ± and tap enter to input -4°F TAT.

The display will show 477.32 KTS TAS and -58°F OAT.

◗ FUEL

Fuel Burn

The Fuel function calculates the amount of fuel (Vol) consumed over a specified time Duration (Dur) at a specified rate (Rate).

Problem: How much fuel will burn in 1 hour, 14 minutes, and 38 seconds at a rate of 9.5 gallons per hour?

Solution: Press the FLT key. Select the Fuel submenu. Scroll to Dur and press CONV UNIT, to get HMS. Next press:

1 : 1 4 : 3 8 and tap enter to input 1:14:38 HMS Dur, and then:

9 . 5 and tap enter to input 9.5 U.S. GPH Rate.

The display will show 11.82 U.S. GAL VOL.

Fuel Rate

The Fuel function calculates the fuel rate (Rate) from the amount of fuel (Wt) consumed over a given time duration (Dur).

Problem: What is rate of fuel consumption if 9,500 pounds of fuel were burned in the last 2 hours, 30 minutes?

Solution: Press the FLT key. Select the Fuel submenu. Scroll to Dur and press:

2 : 3 0 : 0 0 and tap enter to input 2:30 HMS Dur, and then scroll to Wt and press:

9 5 0 0 and tap enter to input 9,500 LBS of Fuel.

The display will show a Rate of 3,800 LBS/HR.

Endurance

The Fuel function can calculate the duration of time (Dur) a specified amount of fuel (Vol) will be consumed at a specified rate (Rate).

Problem: How much flight time do you have with 38 gallons of fuel on board, and a power setting that gives a fuel burn rate of 9.5 gallons per hour?

Solution: Press the FLT key. Select the Fuel submenu. Press:

3 8 and tap enter to input 38 U.S. GAL Vol, and then:

9 . 5 and tap enter to input 9.5 U.S. GPH Rate.

The display will show 3:59:59 HMS Dur (3 hours, 59 minutes, 59 seconds).

◗ GROUND SPEED

The Ground Speed function computes ground speed given a distance (Dist) and flight duration (Dur).

Problem: What is the ground speed if 5 nautical miles are flown in 2 minutes, 32 seconds?

Solution: Press the FLT key. Select the Ground Speed submenu. Press:

5 and tap enter to input 5 NM Dist. Press to get HMS, then

0 0 : 0 2 : 3 2 and tap enter to input 00:02:32 HMS Dur.

The display will show 118.42 KTS GS.

◗ GLIDE

Glide can compute the horizontal distance (Dist) in nautical miles, given the glide ratio (Rat) and descent (Desc) in feet.

Problem: An aircraft has a best glide ratio of 30:1. What is the maximum number of nautical miles traveled while losing 2,000 feet?

Solution: Press the FLT key. Select the Glide submenu. Press:

3 0 and tap enter for 30:1 Rat, then

2 0 0 0 and tap enter for 2000 FT Desc.

The answer is a distance of 9.87 NM.

Glide can compute descent (Desc) in feet, given the glide ratio (Rat) and horizontal distance (Dist).

Problem: How many feet will an aircraft sink in 15 nautical miles if the lift/drag ratio is 22:1?

Solution: Press the FLT key. Select the Glide submenu. Press:

2 2 and tap enter for 22:1 Rat, then

1 5 and tap enter for 15 NM Dist.

The answer is 4,143 FT Desc.

Glide can compute the glide ratio (Rat) given the horizontal distance (Dist) and the descent (Desc).

Problem: An aircraft has lost 2,000 feet in 9 nautical miles. What is the glide ratio for the aircraft?

Solution: Press the FLT key. Select the Glide submenu. Press:

2 0 0 0 and tap enter for 2000 FT Desc, then 9 and tap enter for 9 NM Dist.

The answer is a glide ratio of 27.3:1.

◗ CLIMB & DESCENT

By entering distance (Dist) and descent (Desc) you can acquire angle of climb or descent (AoC/D) and glide ratio (Rat). You can also enter in ground speed (GS) and get your rate of climb or descent (RoC/D). Note that Desc will work for both altitudes either climbing or descending.

Problem: An aircraft has lost 5,000 feet in 30 nautical miles. What is the angle of descent and glide ratio for this aircraft?

Solution: Press the FLT key. Select the Climb & Descent submenu. Press:

3 0 and tap enter for 30 NM Dist, then

5 0 0 0 and tap enter for 5000 FT Desc.

The answers are 166.67 FT/NM AoC/D and 36.5:1 Rat.

Problem: The same aircraft from the previous problem has a ground speed of 90 knots. What is the rate of descent?

Solution: Press:

9 0 and tap enter for 90 KTS GS.

The answer is 250 FPM RoC/D

◗ WIND COMPONENT

The Wind Component function computes the headwind or tailwind component and the left or right crosswind component for a given wind and runway. The wind speed can be in knots, miles per hour or kilometers per hour.

Since runways are numbered by their magnetic course, the wind direction must be magnetic as well (predicted winds aloft are given in true, rather than magnetic orientation, while airport wind advisories and runway headings are both magnetic). The runway number must be entered—not the course. The inputs are WSpd, WDir, and Runway. Remember: it must be the runway number, not the heading. For example, runway 27 (not 270), and runway 9 (not 90). The outputs are crosswind (X Wnd)—negative is a left crosswind, positive is a right crosswind; headwind (H Wnd)—positive is a headwind, negative is a tailwind.

Problem: Assume a wind of 350° at 10 knots. What are the head/tailwind and crosswind components for a landing on runway 03?

Solution: Press the FLT key. Select the Wind Component submenu. Press:

1 0 and tap enter for 10 KTS WSpd, then

3 5 0 and tap enter for 350° WDir, then

3 and tap enter for Runway 3.

The answer will be -6.43 KTS X Wnd (the negative sign indicates a left crosswind) and 7.66 KTS H Wnd (a positive number indicates a headwind).

◗ ESTIMATED TIME ARRIVAL

The Estimated Time Arrival function computes the estimated time of arrival (ETA), given the departure time (Dep) and flight duration (Dur).

Problem: What is your ETA if you plan to depart at 9:30 a.m. for a 2.5 hour flight?

Solution: Press the FLT key. Select the Estimated Time Arrival submenu. Press:

2 . 5 to enter 2.5 HR Dur, then

9 : 3 0 : 0 0 and tap enter to set 9:30:00 UTC Dep.

The display will show 12:00:00 UTC as the ETA.

◗ TO-FROM

The To-From function converts a course from (From) a location into the course to (To) the same location along the same radial, providing the reciprocal of any number.

Problem: What is the course TO the VORTAC if you are on the 150° radial?

Solution: Press the FLT key. Select the To-From submenu. Press:

1 5 0 and tap enter to input 150° From.

The display will show 330° as the course TO the station.

◗ COMPASS HEADING

This function is used to account for the inherent inaccuracies of the compass, caused by the difference between the direction indicated by the magnetic compass and the true North Pole (magnetic variation), as well as magnetic disturbances within the aircraft (deviation). The inputs to this function are THdg, magnetic variation (Var), and deviation (Dev). The output is the compass heading (CHdg) and magnetic heading (MHdg).

Problem: What is the compass heading for a flight on a true heading of 203°, where the compass deviation card indicates a 4° compass deviation and the sectional chart indicates the flight will have a 4° westerly variation?

Solution: Press the FLT key. Select the Compass Heading submenu. Press:

2 0 3 and tap enter to input the 203° THdg, then

4 and tap enter to input the 4° Var (east is least, west is best: enter a positive number for a westerly variation and a negative number for an easterly variation), then

4 and tap enter to input 4° Dev.

The display will show 211.0° for the CHdg and 207° for MHdg.

◗ WIND CORRECTION

The Wind Correction function allows you to compute the wind direction and speed during a flight. The inputs to this function are GS, TAS, TCrs, THdg and the outputs are WSpd, WDir and WCA.

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

Solution: Press the FLT key. Select the Wind Correction submenu. Press:

4 7 8 and tap enter to input 478 KTS GS, then

5 0 0 and tap enter to input 500 KTS TAS, then

3 5 5 and tap enter to input 355° TCrs, then

3 5 0 and tap enter to input 350° THdg.

The display will show 47.99 KTS WSpd, 290° WDir and -5° WCA.

◗ RHUMB LINE

The Rhumb Line function allows you to compute the true course (TCrs) and distance (Dist) between multiple points (Lat, Long).

Problem: What is the true course and distance between JFK (40.6°, 73.7°) and LAX (33.9°, 118.4°)?

Solution: Press the FLT key. Select the Rhumb Line submenu. Scroll to POINT: A Lat and press CONV UNIT, to set the units to degrees (°). Next, press:

4 0 . 6 and tap enter to input 40.6° Lat, then

7 3 . 7 and tap enter to input 73.7° Long for Point A. Then Scroll down to Point B and press:

3 3 . 9 and tap enter to input 33.9° Lat, then

1 1 8 . 4 and tap enter to input 118.4° Long.

The display will show 259° TCrs and 2,169.82 NM Dist.

◗ HOLDING PATTERN

Holding may be necessary when ATC is unable to clear a flight to its destination. The CX-3 will make easy work of determining what type of entry is necessary (Entry), as well as the inbound heading (Inbound).

Problem: What is the recommended procedure to enter the holding pattern when an airplane is heading 155° and is instructed to hold on the 270° radial, performing standard right turns?

Solution: Press FLT, slide to the Holding Pattern function and tap enter. Make sure the turn direction is on Right (tap enter to toggle between Right and Left) and scroll down to Head. Press:

1 5 5 and tap enter to input the airplane's heading of 155°, then

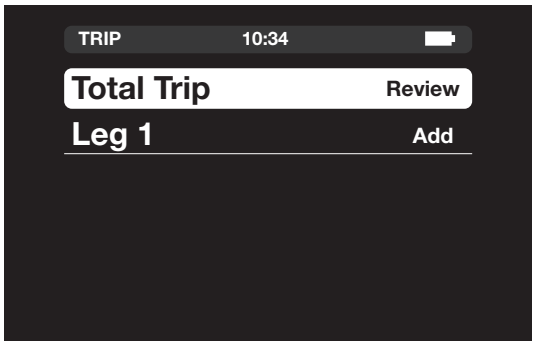
2 7 0 and tap enter to input 270° for the holding radial.

The display will show Direct Entry and 90° as the Inbound heading.

PLAN (TRIP FUNCTIONS)

This button and associated menu items are used for planning a cross-country trip. Once all legs of the cross-country trip have been entered, the display will show the total trip. This consists of total distance (Dist), estimated time enroute (ETE), estimated time of arrival (ETA), and fuel burned (Fuel).

Note that a blue circle icon indicates a repeated global value if more than one leg is added to the trip. If the value remains the same from leg to leg, you will just need to scroll past. Pressing enter on a repeated global value will do nothing, unless you change the input.



Problem: Plan a cross-country trip from Renton Muni (KRNT) to Forks (S18) to Ocean Shores Muni (W04) and back to KRNT. The aircraft used for the cross-country is a Cessna 172. The 172 burns 9.5 U.S. GPH, has a TAS of 110 KTS, and has a deviation of 0°. The area of the cross-country has a variation of 17° E, and you are departing at 12:00:00 UTC. Given for Leg 1:

Distance between KRNT and S18: 92.3 nautical miles

True Course between KRNT and S18: 288°

Wind Direction is 350° at 3 KTS

◗ **1st LEG SOLUTION:** Press [PLAN], scroll to Leg 1 and tap enter. Press:

[9][2][.][3] and tap enter to input the distance of 92.3 NM, then

[2][8][8] and tap enter to input the true course of 288°, then

[1][1][0] and tap enter to input the true airspeed of 110 KTS, then

[3][5][0] and tap enter to input wind direction, then

[3] and tap enter to input the wind speed of 3 KTS, then

[1][7][±] and tap enter for -17° variation, then

[0] and tap enter to input the deviation of 0°, then

[9][.][5] and tap enter to input the fuel rate of 9.5 U.S. GPH, and then finally

[1][2][:][0][0][:][0][0] and tap enter to input the departure time.

Press [BACK], scroll down to Leg 2 and tap enter. Given for Leg 2:

Distance between S18 and W04: 57.3 nautical miles

True Course between S18 and W04: 170°

Wind Direction is 200° at 6 KTS

PLAN (TRIP FUNCTIONS) CONTINUED

◗ **2nd LEG SOLUTION:** The blue circle on the left side of the screen indicates inputs for Leg 1. Press:

[5][7][.][3] and tap enter to input the distance of 57.3 NM, then

[1][7][0] and tap enter to input the true course of 170°, then

[1][1][0] and tap enter to input the true airspeed of 110 KTS, then

[2][0][0] and tap enter to input wind direction, then

[6] and tap enter to input the wind speed of 6 KTS, then

[1][7][±] and tap enter to input -17° for the variation, then

[0] and tap enter to input the deviation of 0°, and then finally

[9][.][5] and tap enter to input the fuel rate of 9.5 U.S. GPH.

Make sure the departure time shows 12:51:00 UTC. Press [BACK], scroll down to Leg 3 and tap enter.

Given for Leg 3:

Distance between W04 and KRNT: 84.2 nautical miles

True Course between W04 and KRNT: 069°

Wind Direction is 140° at 5 KTS

◗ **3rd LEG SOLUTION:** The blue circle on the left side of the screen indicates inputs for Leg 2. Press:

[8][4][.][2] and tap enter to input the distance of 84.2 NM, then

[6][9] and tap enter to input the true course of 069°, then

[1][1][0] and tap enter to input the true airspeed of 110 KTS, then

[1][4][0] and tap enter to input wind direction, then

[5] and tap enter to input the wind speed of 5 KTS, then

[1][7][±] and tap enter for -17° variation, then

[0] and tap enter to input the deviation of 0°, and then finally

[9][.][5] and tap enter to input the fuel rate of 9.5 U.S. GPH.

The last step is to make sure the departure time shows 13:23:49 UTC. Press [BACK], scroll up to Total Trip and tap enter. The totals for the trip are distance 233.8 NM, estimated time enroute 2:10:29 HMS, estimated time of arrival 14:10:29 UTC, and fuel used 20.66 U.S. GAL.

TIMER

The CX-3 has two timers: a stopwatch that counts up and a countdown timer. The stopwatch can be used to keep track of elapsed time or to determine the time required to fly a known distance. The countdown timer can be used as a reminder to switch fuel tanks or to determine the missed approach point on a non-precision instrument approach.



◗ STOPWATCH

The Stopwatch will count from zero to 99:59:59. Press [TIMER] to access the Stopwatch.

1. Select Start and tap enter to start the Stopwatch.
2. Select Stop and tap enter to stop the Stopwatch. Tap enter again to begin the Stopwatch from where it left off.
3. Scroll down to Reset and tap enter to return the Stopwatch to 00:00:00. Scroll back up to Start and tap enter to begin the stopwatch again.

◗ COUNTDOWN

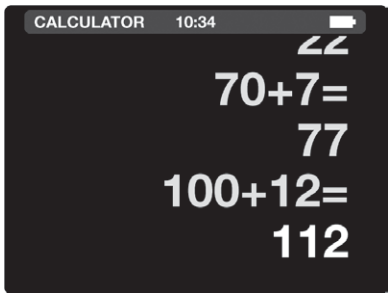
The countdown timer will run from any preset value (as high as 99:59:59) down to zero. Press [TIMER] to access the countdown timer.

1. Slide up to highlight the time value and type in the value you want to begin the countdown from. For example, press [0][0][0][2][3][0] to enter 2 minutes, 30 seconds. Scroll down to Start and tap enter to start the countdown timer.
2. Tap enter to stop the timer at any time.
3. The timer will continue counting down after zero is reached. In this case, a negative sign will precede the time and the font will turn red.

To return to Stopwatch mode, scroll down to reset and tap enter.

CALC (CALCULATOR)

The CX-3 is conventional regarding mathematics. The computer performs the four standard arithmetic operations (addition, subtraction, multiplication and division), as well as the square root function, [√]. It will accept input numbers up to a maximum of 8 digits and display results with a maximum of 8 digits with a floating decimal point and a minus sign. The sign of any number can be changed with the [±] key. The calculator can be cleared by either pressing [C], which clears one line, or by pressing [CALC], which clears the entire screen.



With the CX-3 turned on, add the numbers 123 and 456 by pressing [1][2][3][+][4][5][6][=].

The number 579 will be displayed. Now press [±] to change the number to: -579. As a final step, multiply -579 by 6.5 by keying in [x][6][.][5][=], resulting in the answer: -3763.5.

The CX-3 also has the ability to compute and convert time units. With the CX-3 turned on, press [CALC] and press [CONV UNIT] to change into HH:MM:SS (00:00:00). To solve 02:14:17 + 03:15:00

Press [0][2][:][1][4][:][1][7] [+] [0][3][:][1][5][:][0][0] [=], resulting in an answer of 05:29:17. You can convert this number to a decimal by pressing [CONV UNIT] and vice versa.

W/B (E6-B FUNCTIONS)

◗ WEIGHT AND BALANCE

The CX-3 performs all of the calculations necessary for proper aircraft loading. The first four items in the Wt/Bal menu are used to define the moment reduction factor (RF), enter weight (Wt), enter arm (Arm), and obtain the moment (Mom). An "ITEM" is something that has an assigned weight and corresponding arm and/or moment. Additional ITEMs can be added as necessary. The steps are described below in the context of solving a basic weight and balance problem.

Standard weights used in aviation include:

AvGas . . . . . 6 lbs/gal

Jet fuel . . . . . 6.84 lbs/gal

Oil . . . . . 7.5 lbs/gal

(*Remember: there are 4 quarts in a gallon*)

Problem: Find the gross weight (GW) and center of gravity (CG), given:

1. Aircraft empty weight: 1,495 lbs weight, 151,593 lb-in moment
2. Pilot and passengers: 380 lbs, 64" arm
3. Rear-seat passenger: 150 lbs, 75" arm
4. Fuel: 180 lbs, 96" arm

Solution: Press the W/B key.

1. Select the Weight and Balance submenu. You will define the parameters for the totals (weight, moment, and CG). An "ITEM" is a variable with 2 of 3 known parameters such as weight and arm, or weight and moment. The CX-3 can calculate 8 items for any one problem. If you have more than 8 items, work 3 problems (one with half the items; a second with the remaining items; and a third with 2 items, using the answers from the first 2 calculations). You are first prompted for the reduction factor (RF). Reduction factors are used with aircraft that generate large moments for the purpose of keeping the numbers a manageable size. It does not affect the arms or weights involved in the calculation. An RF of 100 means each moment is divided by 100 before the calculator displays it or the operator enters it; this will be taken into account when the total and CG are computed. RF of 1 means the moment entries will be taken at face value.
2. Press 1 and tap enter to set 1 as the reduction factor.
3. Slide to ITEM 1, tap enter. Input the information for the first item.
   Press 1 4 9 5 and tap enter for aircraft weight, then 1 5 1 5 9 3 and tap enter for the aircraft moment. This results in 101.40 IN for the aircraft arm.
4. Slide to ITEM 2, and tap enter to provide the inputs for item number 2. Press 3 8 0 and tap enter to input the weight, then 6 4 and tap enter to input the arm for item number 2. This results in a moment of 24,320 LB-IN.
5. Slide to add ITEM 3 and tap enter to provide the inputs for item number 3. Press 1 5 0 and tap enter to input the weight, then 7 5 and tap enter to input the arm for item number 3. This results in a moment of 11,250 LB-IN.
6. Slide to add ITEM 4 and tap enter to provide the inputs for item number 4. Press 1 8 0 and tap enter to input the weight, then 9 6 and tap enter to input the arm for item number 4. This results in a moment of 17,280 LB-IN.
7. Slide to see the Weight and Balance Totals. This displays output only, accounting for the inputs in the items above. For this problem, the outputs are:

Wt. . . . . 2,205 LBS

Mom . . . . . 204,443.00 LB-IN

CG . . . . . 92.72 IN

Problem: Given the information above, find the GW and CG if the 150-lb passenger exits the aircraft, and 50 lbs of fuel are added.

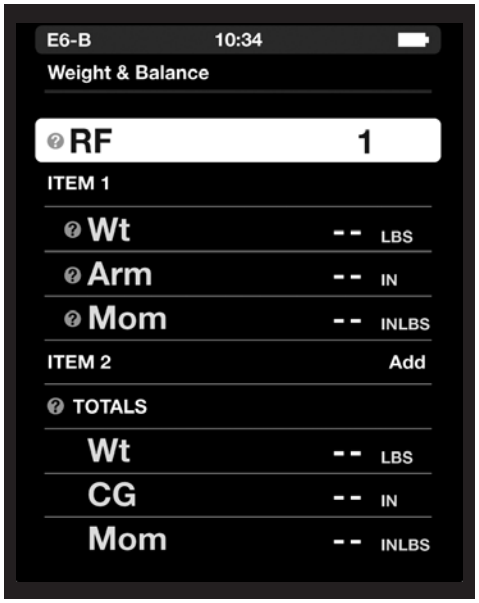
Solution: The #Items/RF is not changing, nor is the empty weight of the aircraft, so you do not need to review the first 2 items.

1. To change the passenger load, scroll up to ITEM 3. Your previous entries for this item will be displayed, and Remove will be displayed to the right of ITEM 3. Tap enter to delete ITEM 3.
2. To change the fuel load, scroll down to the (Wt) line for ITEM 4. Press [+] [5] [0] and tap enter to find the new fuel weight (230 lbs). Scroll down to Arm and tap enter (it will automatically remember the previous value of 96 IN). A new moment for this item is calculated to be 22,080 LB-IN.
3. Scroll to the Weight and Balance Totals. This will display output only, accounting for the weight/load changes:

   Wt . . . . . 2,105.00 LBS

   Mom . . . . . 197,993.00 LB IN

   CG. . . . . 94.06 IN



◗ WEIGHT SHIFT FORMULA

The amount of weight that must shift to move the CG to a desired location may be found using this function. This function can also be used to find the change in CG or Arm from adding or removing weight.

Problem: Find weight of the item (Item Wt) that must shift to move the CG to a desired location, given:

1. Total weight, 7,500 LBS
2. Change in CG, 1 IN
3. Distance weight is shifted, 120 IN

Solution: Press the [W/B] key. Select the Weight Shift Formula submenu. At Total Wt, press:

[7] [5] [0] [0] and tap enter to input 7,500 LBS, then

[1] and tap enter to input 1 IN for ΔCG, and then

[1] [2] [0] and tap enter to input 120 IN for ΔArm.

The display will show 62.5 LBS Item Wt.

◗ %MAC

Large aircraft operations often require the CG be expressed as a percent of the mean aerodynamic chord (%MAC). This function calculates the %MAC given the CG, the length of the mean aerodynamic chord (MAC), and the leading edge of the mean aerodynamic chord (LMAC).

Problem: Determine the CG in percent of MAC given:

MAC . . . . . 860.2 to 1040.9

CG . . . . . 910.2”

LMAC . . . . . 860.2”

Solution: Press [FLT], then slide to the %MAC function and tap enter. Press:

[1] [0] [4] [0] [.] [9] [-] [8] [6] [0] [.] [2] and tap enter for the MAC.

The result should be 180.7 IN. Then press:

[9] [1] [0] [.] [2] and tap enter for the CG, and then

[8] [6] [0] [.] [2] and tap enter for LMAC.

The display will show 27.7% for the CG in %MAC.

APPENDIX A: Service Policy

TROUBLESHOOTING

1. If the CX-3 screen display fails to illuminate, check for improperly inserted or discharged batteries. See battery replacement instructions below.
2. The CX-3 screen is adjustable for display brightness. Tap [SET] and select Backlighting to scroll through the 4 different brightness settings.
3. To ensure problems are being entered accurately, review the screen and User's Guide to ensure you have not missed a crucial step or mis-entered data inputs.

If your CX-3 Flight Computer is not working properly after performing these three steps, return to:

Aviation Supplies & Academics, Inc.
Product Returns
817 Walbridge Street
Kalamazoo, Michigan 49007

We suggest retaining a tracking number for all returned shipments. ASA cannot assume any responsibility for loss of or damage to shipments.

Please describe the difficulty experienced with the computer, and include return address information with your name, address, city, state, and zip code. Please print. The shipment should be carefully packaged and adequately protected against shock and rough handling.

Visit the ASA website (**asa2fly.com/CX3**) for manual revisions and FAQs for this product. For technical support, write to us by email at: support@asa2fly.com.

BATTERY REPLACEMENT

The CX-3 flight computer uses 4 AAA batteries. This calculator has been designed to consume the minimal current possible from your alkaline batteries; therefore, the batteries should last approximately 20 hours usage time under normal conditions. To replace batteries:

1. Remove the entire back cover of the flight computer; find a ridge at bottom center and lift up.
2. Remove old batteries and insert 4 new batteries with correct polarity as displayed within battery compartment.
3. Press the cover back into place until it clicks down and fits flush. The cover will only press on in the correct direction.

LIMITED WARRANTY

Aviation Supplies & Academics, Inc. (ASA) warrants this electronic computer, Model Number CX-3, to the original purchaser for a period of five years from the initial date of purchase, against defects in material and workmanship. Batteries are not covered by this warranty.

For the above five-year limited warranty period, ASA will either amend or substitute a reconditioned model of identical quality (at ASA's option), provided the product is returned postage prepaid to ASA. In the event of substitution with a reconditioned model, the warranty of the original computer will be upheld. Other than the above requirements, repair, adjustments and/or substitutions will be made at no charge.

ASA strives to provide the most rugged and reliable equipment possible. So few items are received for repair that it is not economical to maintain parts inventory, test equipment, and trained repair technicians to perform electronic repair work. Therefore, a replacement unit (new or remanufactured) is sent in exchange for units returned for service or repair.

ASA will not be liable for lapse of use of the computer or other secondary or sequential costs, expenditures, or damages brought about by the purchaser. Implied warranties originating out of this sale, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the above five-year period. ASA shall not be liable for loss of use of the computer or other incidental or consequential costs, expenses, or damages incurred by the purchaser.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages; so, the above limitations or exclusions may not apply to you.

Record the purchase date in the space provided below. Refer to this when contacting ASA regarding this product.

The CX-3 is an instruction and information aid, and is not an avionics instrument.

Purchase Date: _____

APPENDIX B: Updating the CX-3 Firmware

Updates will periodically become available at **asa2fly.com/CX3**.
Follow these steps to keep your CX-3 Flight Computer up to date:

1. Go to **https://asa2fly.com/cx3** and download the CX-3 firmware update file to your computer.
2. Remove one battery from the device.
3. Attach the micro USB cable to your computer and CX-3.
4. While holding the Power Switch ON, insert battery.
   - This will put the device into Bootloader mode. The device will appear as a USB hard drive with the name BOOTLOADER.
   - Note: the screen on the device will remain blank.
5. Open the BOOTLOADER hard drive.
   - There should be a single text file named "READY.TXT"
6. Drag the new CX-3 firmware update file and drop it into the BOOTLOADER hard drive window.
   - The file will begin to download to the device and may take several seconds.
   - Once it successfully downloads, the bootloader will load the new firmware into flash memory and reset the device.
   - Note: at this point, the BOOTLOADER hard drive will disappear.
7. Verify successful download and programming of the device.
   - Once the device resets, the BOOTLOADER hard drive will be available once again.
   - Open the BOOTLOADER hard drive.
   - If the firmware was updated successfully, there will be a single text file named "SUCCESS.TXT"
   - Close the BOOTLOADER window.
8. Reset device to run new firmware.
   - Unplug CX-3 from the computer.
   - Remove and replace one of the batteries. This will reset the device and run the normal program.
   - Turn on the device using the power switch.
   - Press the "SET" button and scroll to bottom of list to verify updated version number.

APPENDIX C: CX-3 Backup Procedure

All settings and data from the CX-3 Flight Computer can be stored on a computer and easily retrieved by following these steps.

SAVING DATA

1. Press SET and navigate to User Data and select Save.
2. Attach the micro USB cable to your computer and CX-3.
3. The CX-3 will appear on the computer as a USB thumb drive named “CX-3_DATA.” Navigate to this device using Windows Explorer (Windows) or Finder (Mac).
4. Copy the file “DATA.CX3” to somewhere on your computer to save your user data.
5. Eject the “CX-3_DATA” thumb drive from your computer and disconnect the micro USB cable.

RESTORING DATA

1. Turn the CX-3 on.
2. Attach the micro USB cable to your computer and CX-3.
3. The CX-3 will appear on the computer as a USB thumb drive named “CX-3_DATA.” Navigate to this device using Windows Explorer (Windows) or Finder (Mac).
4. Delete the file “DATA.CX3.”
5. Copy your saved version of “DATA.CX3” from your computer and paste it to the “CX-3_DATA” thumb drive.
6. Eject the “CX-3_DATA” thumb drive from the computer and disconnect the micro USB cable.
7. Press SET and scroll to User Data and select Recall.

CX-3
Flight Computer

APPENDIX D: Abbreviations Guide

ΔArm	change in the arm
ΔCG	change in the center of gravity
%MAC	percentage of mean aerodynamic chord
Act	actual
AGL	above ground level
Alt	altitude
AoC/D	angle of climb/descent
Arm	arm
ASA	Aviation Supplies & Academics
Baro	barometer
CALC	calculator
CAS	calibrated airspeed
CG	center of gravity
CHdg	compass heading
CONV UNIT	conversion units
Custom	custom arm location
CX-3	best flight computer ever
DAlt	density altitude
Dep	departure time
Desc	descent
Dev	deviation
Dewp	dew point
Dist	distance
Dur	duration
ETA	estimated time of arrival
ETE	estimated time enroute
FLT	flight
FuelAux	auxiliary fuel tanks
Glide Desc	glide descent
Glide Dist	gliding distance
GMT	Greenwich Mean Time
GS	ground speed
GW	gross weight
Hdg	heading
HWnd	headwind
IAlt	indicated altitude
Lat	latitude
LMAC	leading edge mean aerodynamic chord
Long	longitude
MAC	mean aerodynamic chord
MACH	mach number
MHdg	magnetic heading
Mom	moment
OAT	outside air temperature
PAlt	pressure altitude
Pax	passenger
Plan	planned
Pres	pressure
Rat	glide ratio
Rate	fuel burn rate
ReqCAS	required CAS
RF	reduction factor
RnWy	runway
RoC/D	rate of climb/descent
SET	settings
Spd	speed
StdAtmos	standard atmosphere
TAS	true airspeed
TAT	total air temperature
TCrs	true course
THdg	true heading
Torq	torque
UTC	Universal Coordinated Time
Var	magnetic variation
Vol	volume
W/B	weight & balance
WCA	wind correction angle
WDir	wind direction
WSpd	wind speed
Wt	weight
Wt/Arm	weight/arm
WT/BAL	weight and balance
Wt/Mom	weight/moment
XWnd	crosswind

CX-3

Flight Computer



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Kalamazoo, Michigan 49007
asa2fly.com | 425-235-1500

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Visit the ASA website (asa2fly.com/CX3) for any manual revisions, firmware updates, technical support, and FAQs for this product as they become available.