

[Home](#) [Donate](#) [New](#) [Search](#) [Gallery](#) [Reviews](#) [How-To](#) [Books](#) [Links](#) [Workshops](#) [About](#) [Contact](#)

# Waltham A-13A

## Aircraft Clock & Timer (1960-today)

© 2013 KenRockwell.com. All rights reserved.

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

Please help KenRockwell.com



**Waltham A-13A-2.** 8.775 oz./248.75g, about [\\$200 used](#) if you know [How to Win at eBay](#) (I paid only \$165 for this one), or about [\\$2,300 new](#). I'd get it at this [link directly to them at eBay](#) as I did.

**September 2013** [watch & clock reviews](#) [all reviews](#)

This free website's biggest source of [support](#) is when you use those or any of [these links](#) when you get *anything*, regardless of the country in which you live — but I receive *nothing* for my efforts if you buy elsewhere. I'm not NPR; I get no government hand-outs and run no pledge drives to support my research, so please always use any of [these links](#) for the best prices and service whenever you get anything. Thanks for helping me help you! Ken.



Rear, Waltham A-13A-2.



Waltham A-13A-2.

## Introduction [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

The Waltham A-13A aircraft clock and stopwatch has been manufactured continuously since about 1960. It's a small mechanical clock which runs for 8 days on a single winding. It's 2.375" square with a 1.825" dial. The bottom knob winds and sets the clock, and the top button starts, stops and resets the stopwatch.

It is designed to be used at arm's length on an instrument panel, and is so legible that the time can be seen at a glance from across a room.

These have flown on just about every US military aircraft made since the 1960s. They are used less today, and are still made brand new for new aircraft.

It has four hands that run on the same coaxial shafts.

The two fat hands are the clock's hour and minute.

The two thin hands are the stopwatch's minute and seconds. When reset, they both point to 60 as shown above.



**Waltham A-13A-2 timer function stopped at 0 minutes, 2.8 seconds. Time of day is 3:40.**

The 0-60 marking and indices are raised to eliminate parallax error.

## Versions

The A-13A-1 (part number 400201) has fluorescent luminescent hands and markings. It doesn't glow in the dark, but lights up when lit by ultraviolet light.

The A-13A-2 (part number 400202 seen here) has plain white hands and markings.

There are [more versions](#) with different kinds of internal lighting.

## Manufacturers

The government put out MIL-C-6499 and let anyone bid for contracts to make these clocks.

Several makers have made these, and the bulk have been and are made by Waltham.

Waltham Precision made them in Waltham, Massachusetts from 1960 until 1994, and then sold the name and rights to make them to a former service depot in Alabama, now named "[Waltham Aircraft Clock Corporation](#)," who makes and services them to this day.

## Specifications [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

See MIL-C-6499 for all the specifications, performance requirements and how they are to be tested.

Anti-reflection coated glass.

It must have at least 15 jewels. Most Waltham models have 20 to 22 jewels.

It should run to within about 30 seconds per day for the first four days after winding, and in any given day it shouldn't vary more than 15 seconds from the average error over those four days. Accuracy isn't specified beyond 4 days, but it has to run for at least 8 days after being wound.

It is temperature compensated:

At 55°C (131°F) it shouldn't vary more than 15 seconds in 6 hours.

At 0°C (32°F) it shouldn't vary more than 10 seconds in 6 hours.

At -35 °C (-31°F) it shouldn't vary more than 75 seconds in 6 hours.

There are more specifications in MIL-C-6499 for accuracy under shock, vibration, humidity and magnetic fields. I see no requirements for operation in other than the 12 o'clock up position.

## Performance [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

The sample seen here, [bought from a random stranger through eBay](#) was probably made in the 1970s.

Mine ran slow 30 seconds per day for the first few days, and then lost a minute or two per day — with the stopwatch running all day per the MIL Spec. I have not sent it in for service. It only ran for 7.5 days, but that was with the stopwatch running, too. [Historic Aviation Supply](#) tells me that the stopwatch takes more power, so that these ought to run longer without the stopwatch running. They usually run 5-10 days on a winding.

With the stopwatch not running, it seems to be much more accurate, not that it's easy to tell without a second hand.

It is not designed to be super-accurate; it is designed to be durable, legible and functional.

It is supposed to be wound and set every time you get in your plane as part of your pre-flight checklist. The only reason it needs to run for at least 8 days is to make setting it faster and less likely to be in gross error, since it won't be that far off for each flight.

## Usage [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

### Winding

Twist the big bottom knob clockwise. Don't force it when it becomes harder to turn. Mine takes 16.5 twists with my finger (a twist is less than a revolution) when it's completely stopped.



You should wind and set this clock before each flight. If it sits on a desk, keep it wound; it won't be as accurate set only once a week.

### Stopwatch

Press the small top button to start.

Press again to stop.

Press a third time to reset to 00:00.

## Recommendations [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

I got one as a small, legible clock for my desk, complete with a handy stopwatch to measure items under test.

Most you'll see for sale are from the 1960s and are very well worn.

They tend to run 8 years or so before needing service.

If you've found all the time, effort and expense I put into researching and sharing all this, this free website's biggest source of [support](#) is when you use [these links](#), especially this [link directly to them at eBay](#) (see [How to Win at eBay](#)), when you get *anything*, regardless of the country in which you live. Thanks! Ken.

## More Information [top](#)

[Intro](#) [Specs](#) [Performance](#) [Usage](#) [Recommendations](#) [More](#)

[Official US Time](#) (I use a shortwave radio for the [WWV](#) broadcasts at 5, 10 and 15 MC/s for more accuracy)

[Waltham Aircraft Clock Corporation for sales and service](#). A service is about \$200 if you don't need it certified for flight.

[Waltham A-13A-1, p/n 400202](#). About \$2,300 new.

[Historic Aviation Supply](#) (978) 872-4417. These folks service this clock for about \$120, and are also FAA certified.

## Help me help you [top](#)

I support my [growing family](#) through this website, as crazy as it might seem.

The biggest help is when you use any of [these links](#) when you get *anything*, regardless of the country in which you live. It costs you nothing, and is this site's, and thus my family's, biggest source of support. These places have the best prices and service, which is why I've used them since before this website existed. I recommend them all *personally*.

If you find this page as helpful as a book you might have had to buy or a workshop you may have had to take, feel free to help me [continue helping everyone](#).

If you've gotten your gear through one of my [links](#) or [helped otherwise](#), you're family. It's great people like you who allow me to keep adding to this site full-time. Thanks!

If you haven't [helped](#) yet, please do, and consider [helping me with a gift of \\$5.00](#).

As this page is copyrighted and formally registered, it is unlawful to make copies, especially in the form of printouts for personal use. If you wish to make a printout for personal use, you are granted one-time permission only if you [PayPal me \\$5.00](#) per printout or part thereof. Thank you!

Thanks for reading!

[Make A Donation](#)

\$9.99 USD - monthly ▼

[Subscribe](#)



Mr. & Mrs. Ken Rockwell, [Ryan](#) and [Katie](#).

[Home](#) [Donate](#) [New](#) [Search](#) [Gallery](#) [Reviews](#) [How-To](#) [Books](#) [Links](#) [Workshops](#) [About](#) [Contact](#)