



Road Running Technical Council

History of the Jones Counter

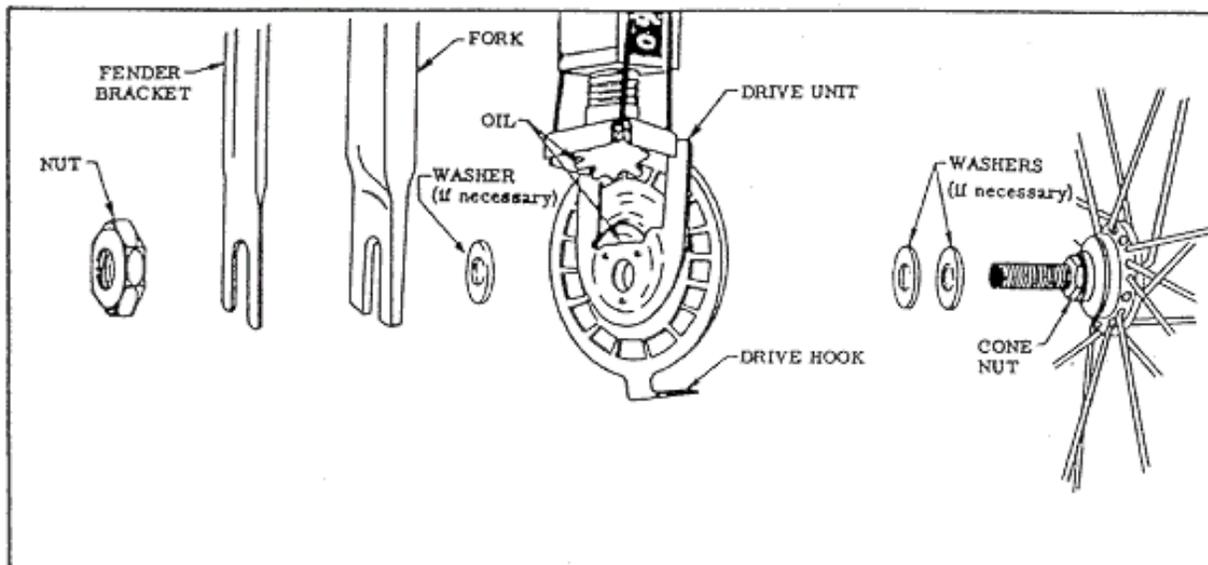
by Alan Jones
January 1, 1984

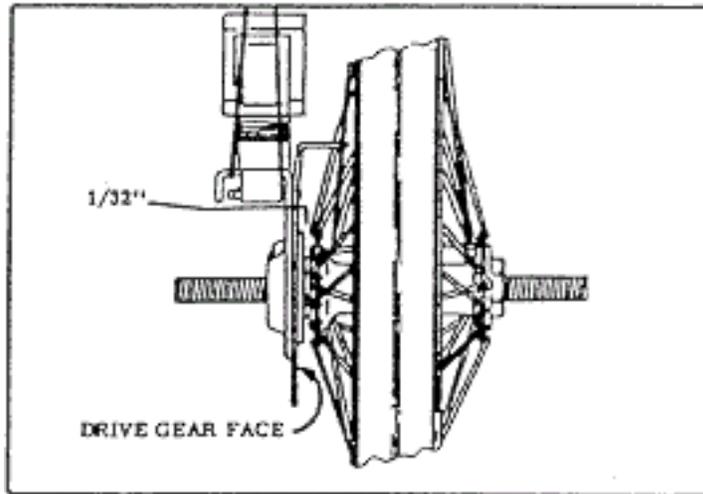
Note from Webmaster: The "Jones Counter" is the device which is now used universally for recording wheel revolutions when measuring race courses using the calibrated bicycle method. This article first appeared in Summer 1984 in the [RRCA](#) publication Footnotes. Alan posted it more recently in [MNForum](#) on 1998 June 10. In addition to inventing the Jones Counter, Alan Jones is the author of widely used [software for race scoring](#).

When you run a particularly good time in a race, you often wonder right away if the course is short. If the course is advertised as "certified", you have some degree of assurance that it is accurate.

Have you ever stopped to think what it is that makes one course certified and another not? Behind each certified course is a lot of work by dedicated people who want to give you that confidence in the times you run. There are many aspects to course measuring. One is the device used. My son, Clain, has made such a device that has been used to measure thousands of courses over the past ten years [Remember, this was written in 1984]. Since he has now sold the business it seems an appropriate time to write a history of the device since one cannot claim such a history is being used to help sell the counters.

The Counter mounts on the front wheel of a bicycle and is used to measure road courses. The counter records 20 counts for each revolution of the wheel. By riding the bike over an accurately measured course to establish the number of counts per mile (or kilometer) one can then measure a course to a high degree of accuracy.





I have often been asked how my son began making the Clain Jones Counter which has been used to measure two Olympic Marathon courses as well as road race courses all over the world. By digging into some of his and my records I've created the following account.

Back in 1970, I ran in my first road race which was a local affair sponsored by a church advertised as "20 Kilometers". While I didn't run a fantastic time, I knew it was faster than seemed possible. I drove my car out on an Interstate highway and did a rough calibration of my car's odometer and then rode over the course. I found it to be about 11.4 miles instead of the 12.4 it should have been.

It so happened that this was the last running of the race since the priest who had been the meet director for 13 years was retiring and the parishioners did not want to carry it on. A few of us decided to try to pick it up and change it from a "point-to-point" format to a loop format. About this time an article appeared in Runner's World telling how to measure a course. Up until this time I had never heard of Ted Corbitt who did the certifying for the RRCA and AAU (to be replaced by TAC [which is now USATF]).

A friend, Tom Young, gave me a revolution counter that was used many years ago in an IBM machine to record the number of hours of use. I still have this counter. It is made of metal and has inscribed on the end of the case:

THE VEEDER M'F'G CO.
 PATENTED
 VEEDER
 OCT. 22, 1896
 AUG. 15, 1911
 HARTFORD, CONN., U.S.A.

I figured I might be able to use this somehow but needed a way to revolve it as the wheel turned. I went to a bike shop and rooted through a box of old odometer gears. It seems that odometers wear out faster than the gears so people come in to get an odometer repaired but the gear part is not replaced. Since every new odometer comes with a gear, the proprietor was developing a collection of them. I found one that I thought I could hook to my counter.

By filing the circular shaft on the counter into a square cross-section, I was able to attach it to the gear which was then slipped over the front axle of my bicycle.

Tom and I then went out to a section of unfinished Interstate highway and measured off a half-mile calibrated course. (I didn't know at this time that one should make the calibrated course in a location that could be permanent.) I rode the bike over it a few times to get a calibration factor and then measured the course we had laid out (which was 12 miles long).

I had Ted Corbitt's address from the Runner's World article and sent him my data. Much to my chagrin Ted wrote back asking if I had stretched the tape to a tension of 10 pounds. I hadn't since the article hadn't mentioned that. I was really discouraged. However, the next spring we modified the course to a 20 kilometer one and I went out again but this time I was armed with Ted's official instructions. We stretched the tape and did everything right. At that

time Ted did not require a re-calibration after the measurement but I did one anyway since it seemed like a good thing to do. The "before" and "after" runs were not in good agreement. The difference resulted in a discrepancy of 30 yards over the entire 20K distance. I sent it in anyway and Ted again turned me down. I did it once more and this time got good agreement between the two calibrations and Ted finally certified the course on May 10, 1972.

Now I figured I was done. However, on October 28, 1972 Ted wrote to me for a "description of the mechanism" I used to measure the course. He said that Veeder-Root was no longer making the counter he was providing. This counter was a "star-wheel" affair that gave one count per wheel revolution. One had to count the number of spokes beyond the last strike to get an accurate measure.

What Ted wanted was a complete description so that someone else could duplicate what I had done. (It seems this is what they told us a lab report should be when I was in college.)

I went to the Thomas Register to get Veeder-Root's address and wrote to them. They provided me with a catalog and the name of a local dealer. I found a counter similar to the one I had used but the case was now plastic instead of the original metal. It cost \$6.50 for one. However, Veeder-Root required a minimum order of \$50.00. The dealer said he would hold my order until someone else ordered some Veeder-Root parts and combine our orders. After two months the dealer called me and asked if I was still interested in the counter. I said I was and asked him to just keep waiting. About a month later my counter was in.

Meanwhile I was looking for a gear that I could mate to the counter. I went back to the bike shop and asked where he got the gear I had used. He told me that he didn't have the slightest idea since it was just in a spare parts box. I finally found a Stewart-Warner bicycle odometer in a store. It looked like it would do the job but the best part was that it had part numbers for the different components. I wrote to Stewart-Warner and they referred me to a distributor who supplied the part.

I now filed the shaft of the counter square, cut some of the thread off of the gear where the flexible shaft is attached, and lashed it all together with soft steel wire. I made a drawing (Figure 1) and a description and sent it off to Ted figuring I was done. After all, now anyone else could make a counter like ours.

I was disappointed in Ted's reply. He told about the efforts he was making to get a counter replacement. At that time he was recommending a Huret bicycle cable and gear box. The arithmetic involved apparently gave problems to some users. He also mentioned a effort by Aldo Scandurra. It sounded like the older Veeder-Root striker method but it had four strikers rather than one. In any case, he thought all of these methods were too complicated for the user. Mine had the same problem of being too complex to put together. Ted didn't think the average user would be able to do the metal work.

His suggestion was: "If you are interested in putting together about 30 counter assemblies with all work done and ready to install, then proceed and let me know when you need money. The counter should have at least 5 figures, more if possible."

He then suggested that he buy 15 of them and I would sell the other 15. However, he made it clear that this was only to be an interim solution with an eventual counter coming from Scandurra or an un-named person in Minnesota.

I really didn't want to get involved with this so I asked my son, Clain, who was nine years old if he wanted to help. Since Clain was good with his hands and loved money he agreed. The assembly was really too much for him but he was able to do a bit of the work and I paid him \$1.00 for each one. This made the manufacture a break-even proposition for me.

I mailed the first counter to Ted on September 29, 1973. He began to pass my name out to interested parties and, by the end of the year, all 30 counters were gone. These counters sold for \$8.25.

That fall Ted flew to England to run in a 24 hour run. While there he gave a counter to John Jewell, an official of the British Road Runners Club. In a letter he stated that he was still looking for a company to produce a counter.

On December 10, 1973 Ted wrote to ask me to put together another 30 counters since he still didn't have this (unnamed) company going. He would make sure that we did not get stuck with an unsold supply!

On January 5, 1974 Ted sent me the first certification application done with a Jones counter (other than my own). Unfortunately, I don't have a record of who this person was.

After getting the next 30 parts, the orders dried up. I wrote to Ted on June 11, 1974 that I hadn't gotten an order in over two months. This was after he had told me that my orders should be picking up since he had been giving my name out to a lot of people. However, business did pick up shortly after that. The following table shows how many counters Clain sold each year that he had the business.

1973	30	1978	452
1974	52	1979	419
1975	78	1980	397
1976	92	1981	416
1977	99	1982	306

The total number sold over these ten years was 2341.

On September 16, 1974 Ted wrote to ask if we had ever had failures with the counter. (We hadn't.). In this letter he made reference to Bob Letson of San Diego who had begun to use the counter. Bob eventually became Clain's greatest fan and bought over 100 counters. He bought them from Clain and sold them to people all over southern California at the same price he bought them for. Bob must have measured a few hundred courses over the years.

As time went on, Clain took over more and more of the business. For a while all I did was order the parts for him and give him an advance to cover the cost of his inventory. After a while, he was able to cover this out of his own assets. One time when he got behind, I offered to help him out. I made a few counters but they weren't up to his standards so I just stayed out of the way.

Clain had a lot of interesting things happen to him. One of the most exciting was when he got a telegram in the spring of 1976 from the Montreal Olympics asking for the price for four counters. He sent a telegram right back and they replied that an order would follow. He made up four counters (he had trouble keeping them available off-the-shelf) and we took them to the post office. A bill was sent but a couple of months went by with no reply. He sent off another note asking where his money was. A form letter came back saying there were no more tickets available! Another letter finally got a telegram reply, an apology, and, finally, a check. That summer we went to the Olympics and watched the marathon from the street. For years after that we wondered if his counters had indeed been used for the measurement. Early in 1983 Pete Riegel, in Measurement News, reprinted an article that gave the details of the measurement and included the information that one of his counters had been used.

Clain got a lot of inquiries over the phone. People couldn't understand why he couldn't ship a counter to them COD. However, he checked it out at the post office and found you had to be a regular business to do this.

As you can see from the table above, Clain's business took off in 1978. The cause of that was the publishing of Jim Fixx' book "The Complete Book of Running". In an appendix of his book he listed where to get information on various aspects of running. He mentioned Clain's counter and said it was "a good one". He gave the price as \$12.00 (which it was then) and Clain has continued to get orders for this amount ever since.

The increased business was both a blessing and a curse. His supply of gears dried up when the factory went on strike just as orders were flying in. This was very distressful to Clain as he liked to get counters in the mail within a day or two of getting the orders. Once he got the gears it took him many weeks to clean out the backlog. During this time he received a number of calls from customers wondering where their counters were.

As Clain approached college age I told Ted Corbitt that we should all be looking for a person to take over the business. Clain offered it to Bob Letson who was interested if it was the only way to keep the counters coming. Finally, Ted got Allan Steinfeld, President of the New York Road Runners Club, interested. The NYRRC bought the business and Bill Noel took over the job of running it.

When we heard the Los Angeles Olympic Marathon had been measured by 13 volunteers, we wrote Bob Letson to see how many used the Clain Jones counter. Bob replied, "Why, all of them! What other device is there?"

One interesting aspect of history of the counter that I have gotten a kick out of is the evolution of the name. We had always called it the Jones Course Measuring Device. It seems now to be universally called the Clain Jones Counter even as Bill Noel makes them. Clain is now a sophomore at Cornell University in Ithaca, New York where he is studying agricultural engineering. The moral of this story is to be careful when you start a project. You never know where it might lead.

Epilogue

Clain now has his masters degree in environmental engineering from the University of Washington in Seattle and is working for an environmental engineering firm in Seattle.

I remember now how upset he would become sometimes when things didn't go well with the business but now he tells me that he really loved it. He was glad when he would come home from school and find an order.

Epilogue II

Around 1990 Paul Oerth made an improved model of the counter by eliminating the wires to hold the two parts together. Instead, he bonded the two parts. The counter is now called the [Jones/Oerth Counter](#).

Epilogue III

In October 1998 Clain obtained a Ph.D. degree in soil chemistry from Montana State University in Bozeman, MT. He is now employed there as an Adjunct Assistant Professor teaching Pollution Science and a Web-based course on water pollution for high school teachers.

Return to [RRTC Home Page](#)

This page is maintained by Bob Baumel: [Home page](#) | [Send email](#)

Last revised [2000-04-05](#)