



If you're going to ride enduros, you have to know the basics



By Paul Clipper

[Trail Rider Magazine](#)

You can ride enduros without timekeeping. There is no rule that says you have to have a clock, odometer, computer, roll chart, whatever, on your handlebars. If you want the fun of just paying for a real challenging trail ride, then by all means enter an enduro and just ride. And I will forever defend your right to do just that.

However, if you want to get serious about enduros and try your skill at maybe doing good in them, even so much as winning a trophy, you're going to have to learn how to timekeep. Timekeeping is the basic art that turns enduros from just another motorcycle "race" into a thinking man's game (or thinking women's game, we don't want to be sexist here). The ability to use timekeeping and understand enduros completely will open up a whole new world of experience to you as an off-road rider, and you may find it one of the most interesting things you have ever attempted.

When I first decided I was going to enter and enduro, it was a Big Deal. I had a lot of respect for enduros and enduro riders, and as a trail rider I had studied everything I could learn about enduros from whatever was published at the time. Dirt Bike magazine had printed a one-shot magazine, called The Enduro Rider's Handbook, and I remember Cycle magazine, of all people, had a scholarly article on timekeeping theory in one issue. These two sources had lit a fire under me, and by the time I actually landed on the starting line of an enduro (Stumpjumper enduro, 1974 I believe) I really did understand a lot about timekeeping. I actually kept time perfectly for 2.6 miles, and then they ran us into the first swamp and, as the saying goes, the rest is history. Truthfully, I spent the rest of the day trying to stay within my hour, but I knew I was close to houring out, knew exactly how late I was, and maintained an understanding of just exactly how bad I was doing as the course pounded the living hell out of me. I wound up finishing that first enduro, and after that I was hooked. In the many years following I had ample opportunity to hone my skills, and learn far more about timekeeping than any normal person really needs to know. I was fortunate enough to get a job "in the industry" and wound up meeting the experts at the time, who were also my heroes of the time, people like Dick Burleson, Jack Penton, Dane Leimbach, and more. We'd always talk shop, and I'd learn how they attacked the problem of keeping time in enduros. This just fueled the mania, and the ultimate result was I turned into a much better timekeeper than I was a rider. Basically, I always knew how late I was. As you can imagine, this had a profound affect on my results.

Good thing I knew how to write.

So what this article will be is a look at basic, cheap timekeeping for the rank beginner. Next month, we'll have an article on advanced timekeeping, where we'll talk about the finer points of riding enduros. Finally, in a third article we'll talk about computer timekeeping, if we need to, and then if there are any questions left we'll try to answer them. As I've done with my own riding career, I went out and asked a lot of questions of good expert riders like Kevin Hines, randy Hawkins and others, and a lot of what you're about to read also comes from them.

Basically, if you ever thought you'd like enduro riding, stick around and read on. This is where it starts getting interesting.

Step One: Know the Rules

We asked Randy Hawkins what he would recommend to new riders, and he didn't hesitate to answer. "Know the rules!" he said, "The first thing a new rider should do is get a rule book for the organization he's going to start riding in, and learn everything about how the enduro should be set up. The rule book will tell you what kind of checks there are, where the possible check locations might be, about resets, free time, everything. Without a doubt, knowing the rules is the best place to start."

We couldn't agree more, and we also can't over-emphasize this. Basically, for the region we're riding in, there are two different kinds of rules used in enduros, AMA rules and Brand-X rules. Generally, AMA rules are far more complicated and it seems like each region varies the interpretation of AMA rules somewhat, so it pays to get a rule book and study it. From it you will learn such things as check placement, which is very, very important. For example, in basic AMA rules checkpoints can't be closer than three miles apart. Right there, you know that every time you hit a checkpoint you then have three miles of riding where a check is not possible...so in AMA rules that usually means ride as fast as you can. There is also the "two before, three

after" rule, that says you can't have a check closer than two miles before a gas stop or within three miles after. But note also that this does not apply to a "gas available," which is not a gas STOP, so it doesn't conform to the two before, three after rule. A checkpoint can be placed anywhere around a gas available.

If you ride in the NETRA region, you'll have to know Brand-X rules as well as AMA rules. Brand-X is an interesting variation of enduro rules that is actually quite fun and very fair. With Brand-X, you are scored check-to-check. Say you're riding on minute 20, and you come into the first check four minutes late. When you leave the check, your number is now the number you arrived on, so you're now riding on 24. This means no matter how late you arrive at a check, you leave it on time, or nearly on time if you dawdle past the flip of the cards. Also, Brand-X has no two before, three after, or three mile spacing rule. Under Brand-X rules checkpoints can be placed anywhere on the course.

As you can imagine, there are many rules governing all the action that takes place on a enduro course, and it is extremely important to know them all. Without a firm knowledge of the rules, all you'll be doing is lurching along, alternately chasing like mad and then practically dog-paddling following the people on your minute, with no clue of what's going on, and believe me it's a lot more fun to know why you're doing what you're doing. Get a rule book, read it, and if you don't understand what they're talking about, seek out the help of a more knowledgeable friend or club member and ask questions.

Real Timekeeping

Okay. So we're going to assume that you know how to enter an enduro, know what to wear, know how to prep your bike so it runs all day. We're not going to get into how you're going to get more fuel on the course (you'll need more than one gas can), or how to carry Yoo-Hoo and turkey jerky in your fanny pack (sorry Charlie). You want to know about timekeeping, so we're going to tell you the simplest method. In the next article we'll get into the more complicated stuff.

You are going to need three different pieces of equipment. You will need an odometer, a roll chart holder, and a clock. The odometer you use may be the one that came on your bike, or you may choose to invest in an electronic odometer. The electronic ones are nice; there's the AutoCal from ICO, and then the odometers built into the enduro computers, which we're not going to talk about right now. Basically, you need something that will count miles, and be resettable by tenths, and is reliable. A roll chart holder you've seen, if you don't already have one for riding dual sports or turkey runs. It's a little handlebar-mounted box with knob-driven shafts sticking out of the top and bottom of one side, with a removable plastic window on top. When you make up your roll chart, you do it on adding machine paper or tape together strips of paper supplied by the club as a route sheet, and roll it up inside of the roll chart holder in a way that you can advance the chart with your left hand by turning the knobs. Good dirt bike shops sell them.

You'll need a clock, as well. Most of us would recommend two; a handlebar-mounted clock and a wristwatch. For the handlebar clock you have to get something you can read at 20 mph or faster over rough ground, and something that is easy to set. ICO makes a great, tough enduro clock that mounts to the crossbar. Enduro computers also have clocks built in, or you can go the el cheapo route and get one of those little digital stick-on car clocks from an auto parts store. Some of the car clocks are actually pretty neat, with numerals over an inch high, but they are not

very sturdy nor waterproof, so when you mount them on your bike you really have to think about protecting them while you ride. When you spend a lot of time walking enduro trails, like us magazine geek event photographers, smashed LCD screens and little fractured bits of integrated circuits are common litter in rocky areas. Of course, if you smash a Pep Boys clock you're only out five bucks, so it's not like it's a big deal--the problem comes from losing your timekeeping ability for the rest of the day. The wristwatch, therefore, is your back up.

The club will give you a thing called a route sheet when you sign up. On the route sheet will be all the speed changes, resets, gas stops, whatever for the day. The object is to transfer this route sheet information into something you can understand and fit into your roll chart holder.

The Easy Way

You will also find at most AMA enduros a person sitting at the sign-up table selling pre-made roll charts for the even, known as Jart Charts; made by the company of the same name. Jart Charts are produced in California by my old friend Art Jensen and his son, and they are very reliable and extremely useful. Pro riders use them as well as spodes like you and I, so there's no shame in buying a Jart Chart. You can buy them in any one of a half-dozen configurations, but basically you want one that shows you mileages and times for every minute of the run, which they all do. When you get a little more experience you'll develop a preference for one style of Chart over another--they vary in how they display the current speed average, the mileage position, etc. Read the rest of this article and you'll maybe have a better handle on what you want by the time you get to your next enduro.

Basically, all you really have to do is buy the Jart Chart and roll it up in your roll chart, but we don't want you to do that. We want you to find a quiet place where you can sit down with the Jart Chart and a handful of felt-tip markers of different colors, and a couple of highlighters, and the route sheet supplied by the club. With the aforementioned tools we'll want you to sit and study the Jart Chart, and mark and highlight all the speed changes, resets, gas stops and gas availables, free time, everything on the roll chart that asks you to think rather than just ride. You do this so you can see the significant changes better, and also to familiarize yourself with what's going to happen in the next six hours or so. To get a better handle on how to do this, keep reading. On the other hand, if you want to start your career out like a real hardcore enduro rider, you'll forget about the Jart Charts, and move right to the front of the class.

The Real Way

Get yourself some felt tips and a roll of two-inch adding machine paper. Sit down with the route sheet and make your own roll chart, for every minute of the enduro. Yes, it's tedious. Yes, it's difficult. However, when you are done writing out a whole enduro you will be intimately knowledgeable of exactly what's going to happen during the day, and you will have an advantage over anyone who didn't bother. Here's how to do it. The club route sheet will look like the one we hopefully remembered to reproduce here. This is a simple yet very complete one, for the Stumpjumper Enduro of 1996. Others you will find may be more difficult to understand, but they will all give you the same information. The first real instruction is a notation of the first speed average, which is 24 mph at 00.0 miles; meaning when you start you immediately have to start riding a 24 mph average. How can you do that if you don't have a speedometer? Easy--you do it the enduro way, and break the speed average down from miles per hour to miles per minute. This is why you have an odometer rather than a speedometer.

To figure out what your speed average will be expressed as miles per minute, all you have to do is divide the speed average by 60. Divide 24 by 60 and you get .4; that's four tenths of a mile per minute. Divide 18 and you get .3 per minute, divide 12 and you get .2 per minute. Get the idea? It works real easy with speed averages that divide easily into 60, but what if you get an oddball? What if the club uses a weird speed like 15 mph, or 21 mph? Just remember that a check has to fall on a whole tenth and a whole minute, and keep going with the math. If you divide 15 by 60 you get .25, so you go .25 every minute, but since it would be illegal to put a check there any minute with a half-tenth on it doesn't matter to you. So with 15 you would say "Hmmm... .25 every minute doesn't work, but .5 every two minutes works fine!" See? You have a whole tenth falling on a whole minute, and the cool part is you get to ride a whole half-mile within two minutes with no possibility of a check falling on the oddball half-tenth minute.

We'll get into the greater significance of that a little later on, right now just get your division straight. 15 is .5 every two minutes, 21 is .7 every two, 10 is .5 every three. Within these pages we'll try to remember to print a chart of common speed averages, but it doesn't hurt to do them yourself.

So to write out a roll chart for this event, you would take your felt-tip and just starting listing every minute, like we've done in our example. This enduro is a little unique, in that they give you a reset to 3.2 right on the starting line. Why did they do that? That's why you read the rule book. The AMA rules say that there can't be a check two miles before or three after a check, and the start control is considered a check. Without the reset you'd have the possibility of no checks for the first three miles; in this case the club has taken that away from you right on the line. In return, they've given you eight minutes of rest you don't need. So to write out the roll chart, you'd first note that the speed average is 24 mph, just so you know, and then note the reset, by writing "Reset From 0.0 to 3.2" right below that on the paper. Then you want to note down what your clock should say when you get to 3.2. To find out, count up from the first minute. If you started normally, your chart would say "0.4 at :01," then "0.8 at :02," then "1.2 at :03" and so on. See? What you're doing is counting up tenths by whole minutes. Following this method we figure out that the first real mileage instruction on the route sheet will say "3.2 at :08" and write that down. To continue the chart, just keep adding four tenths per minute and neatly write each instruction on the roll.

When you get to 8.8 miles, you see there's a speed change to 18 mph. So after you write "8.8 at :22" on the roll chart, you write "Change To 18 MPH" as the next instruction, and then you start calculating minutes as multiples of three tenths, since 18 mph is .3 per minute. Easy, no? Every time you hit a speed change on the route sheet you handle it in the same way--calculate the tenths per minute, and then continue writing the chart per whole minute. When you get to the next reset at 26.4, you first write the time for 26.4, like "26.4 at :12," and then right after that write down "Reset From 26.4 To 30.0".

You have noticed by now that at this point we've passed the first hour and are working on the minutes of the second hour. At 59 minutes you go straight to 00 minutes and then 01 minutes again. Forget about the hours; don't even look for them on your clock. The only thing that matters is whatever whole minute it is, and if you're concerned about the hour, or what time it is, then you're not going to win anything that day. Hours don't exist.

You write out the whole route sheet like this, and when you get to the layover at 54.9, you write "54.9 at :39" and then "29 Minute Layover" and then "Reset To 00.0" and start writing out the

second loop of the event. All the term layover means is that when you get to 54.9 you get to take a 29 minute break--assuming you're not late when you get there, which would eat into your break--and then, according to the route sheet, you head for the back of the firehouse for a restart in the same place you started that morning. Note that the key time at 0.0 miles for the second loop is 11:10; remember that this means whatever time you arrived at the layover, you must be ready to leave when your clock says :10 again.

To make it all easier to read on the bike, use different colors for the different instructions. Use black for the basic time and mileages, use red for speed changes, use black with a yellow highlighter for resets, whatever. Just use a system so you can see the difference between the all the different instructions on your chart. If you use a pre-printed Jart Chart, use the highlighters and markers to jazz up the information that's already there, once again, so you can immediately see the changes.

Making It Work

Now to put this simple timekeeping system to work. Put the roll chart in your chart holder, and make sure you can read it properly. It's real easy to put them in upside down. Find the key time clock that the club has provided--it's usually near sign-up--and set your clock so that when your minute comes up, your clock will come up to :00 minutes at whatever hour (remember, hours don't matter. We'd recommend putting tape over the hour side of a Pep Boys clock). Genuine enduro clocks are nothing but timers anyhow, so when you start them they automatically start at zero. Set your odometer to 00.0 on the starting line, and you're ready to go.

In this enduro, when your starting time came up, technically you would reset your odometer to 3.2 right off the starting line and then sit there until your clock caught up to the odometer. In reality, the riders had a deep waterhole to paddle through right after the start, so they reset their odometers, paddled through the water and then sat and waited. When :08 minutes came up they rode off, and then started matching the route sheet to the odometer and clock--when 3.6 comes up on the odo your clock should say :09, at 4.0 the clock should say :10. You will find it incredibly nervous and jerky riding, trying to find what the pace is to keep the clock and odo smoothly matching up, but eventually you'll find a rhythm while you ride.

So there you are. You made a roll chart, and now you know that all you have to do is ride and match the roll chart to your instruments. You smile and thank the checkers as they mark your card in the checkpoints, and continue trying to keep your timekeeping equipment all matched up. And in case you haven't guessed, there's a whole lot more to it than this, but you'll have to tune in next month to read the rest of it!