

ErgVideo 2.0, for CompuTrainer, Velotron, and manual
Stationary trainers

www.ergvideo.com

ErgVideo

Virtual Reality Cycling



for CompuTrainer™
(also for manual stationary bicycle trainers)

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User's Guide

Table of Contents:

ERGVIDEO 2.0, FOR COMPUTRAINER, VELOTRON, AND MANUAL STATIONARY TRAINERS	1
TABLE OF CONTENTS:	2
READ FIRST: INSTALLATION INSTRUCTIONS	3
BEFORE YOU BEGIN:	3
QUICK-START OPERATION:	4
REGISTRATION OF VIDEOS:	5
HOW IT WORKS:	5
SETTING INTENSITY LEVEL:	6
CAUTION: DO NOT DAMAGE YOUR COMPUTRAINER!	6
RIDING TIPS:	8
IMPORTANT COMPUTER PERFORMANCE TIPS:	8
RIDING WITHOUT A COMPUTRAINER:	9
DETAILED INFORMATION:	10
CONFIGURATION FOR MULTIRIDER, COMPUTRAINER COACHING SOFTWARE, VELOTRON COACHING SOFTWARE OR NO CT:	10
STARTING A RIDE:	10
OPEN:	10
REGISTRATION SCREEN:	10
RIDE DESIGNER:	11
<i>Repeats/Intervals mode:</i>	11
<i>Setting Intensity Level</i>	11
<i>In Coaching, the power level applied is in absolute watts, as shown during the ride.</i>	12
<i>Build it!</i>	12
<i>Other tips for the Ride designer:</i>	12
<i>Configure Multirider Session:</i>	13
CONFIGURE COMPUTRAINER APPLICATION	13
YOU ARE READY TO RIDE!	14
POSITION THE ERGVIDEO WINDOW:	14
PRESS PLAY & RIDE:	14
STOPPING A RIDE:	14
MUSIC PLAYERS:	14
OTHER MENU ITEMS:	15
TOOLS: OPTIMIZE FOR VIDEO CARD:	15
TOOLS: DEBUG MODE	15
HELP CONTENTS: SHOWS ONLINE HELP FILE	15
HOW TO PLAY THE INSTRUCTIONAL VIDEO:	15
THRESHOLD TESTING VIDEOS.	15
CALIBRATING YOUR COMPUTRAINER:	17
ERGOMETER MODE VS. 3D MODE:	18

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Read First: Installation Instructions

You need:

- You need to be logged in as an administrator to install the software.
- CompuTrainer Multirider 3 Software (ver. 1.3 April5 2006 or later) for the best experience, OR
- CompuTrainer Coaching Software (ver 1.5.326 or later) for next-best experience. Version 1.6.432 is superior. OR
- Velotron users require Velotron CS Beta version 1.6.449 or later.
- Windows XP (all variants) or Vista (all variants). ErgVideo Inc. will not provide support to users of earlier operating systems.
- At MINIMUM Pentium 3 or 4 class machine, preferably 1.5GHz or faster, 512MB RAM or more. Limited feature set available for P3 machines and laptops. Preferred p4 machines with Hyper-threading support, or later. The minimum spec machine requires extensive tuning for performance.
- Multi-display installations require graphics cards with two video outputs. ATI X1300 512MB is a mid-range card proven capable on Windows XP.
- Windows Vista Installations REQUIRE directx10-hardware capable video cards.
- Windows Media Player 11.

ErgVideo will NOT work with Multirider 2, nor versions of Coaching Software earlier than 1.5.326.

If you do not have a CompuTrainer or Velotron and the above software, you can run with any stationary trainer...but you will need to adjust your trainer resistance manually.

BEFORE YOU BEGIN:

Be absolutely certain that your Multirider 3 or CompuTrainer or Velotron Coaching Software is operating properly on its own, before you install ErgVideo. Configure Coaching Software or Multirider 3 to work as it is intended to operate!

ErgVideo cannot fix a broken installation of MR3/CS/VS Software, and relies on that software to correctly operate on your system. CALL RACERMATE INC. for support in getting their software to work correctly for you. They have excellent support, and ErgVideo Inc. is not responsible to give guidance solving problems with their products. They also need to know when their users are having difficulty, so they can improve their product in new releases or patches.

Administrator privileges:

The installer may require you to be logged in as an administrator. Everything will be very smooth if you are logged on to Windows XP/Vista as an administrator.

Step 2) (If you are wondering where step 1 is, it's in big ***bold type***...above). **Insert the ErgVideo installer DVD into a DVD drive.** You must install the video to a Hard disk drive, you cannot play ErgVideo from the DVD drive. The video is not formatted as a DVD movie, it will not play in a DVD player. Be sure you have space on our drive for the video. Videos are from 2 to 5.5 GB. The size shows when you look at the "properties" of the Video file<videoname>.avi, where <videoname> is the name of the video you ordered on the installation DVD.

The disc is an auto-run disc which will automatically install the ErgVideo Player and the ErgVideo content files. You can cancel the installation of the Player if you already have it from a previous install.

If you have auto-run disabled, just use windows explorer to navigate to the DVD drive and double-click the .bat file. (Right click "My Computer", select "Explore" and right click the DVD drive, Explore, and double click the <videoname>.bat file.)

Video is extracted to a shared video folder so that all users of your machine can enjoy ErgVideos. Microsoft .Net 2.0 will install if you don't have it. It is required for ErgVideo.

Step 4) **This step may not be necessary and can often be skipped.** You need a compatible "Codec" to play the video. Locate the video file (.avi or .wmv) in:

Windows XP: C:\Documents and Settings\All Users\Documents\My Videos\ErgVideo\<videoname>

Windows Vista: C:\Users\Public\Videos\ErgVideo\<videoname>

Left Double click on the video file in that folder to see if it can play on your system with Windows Media Player. Avi files are encoded with MPEG4v2, and you need a suitable decoder. Media Player may download a Microsoft codec automatically (if you have configured it to do so). We have found the most efficient one is the FFDSHOW available at

http://www.afterdawn.com/software/video_software/codecs_and_filters/ffdshow.cfm/rev610_20061201 . Install it and accept the default settings. It uses half the CPU load compared to the MS codec, and is very configurable.

Step 5) Close Windows media player if you performed step 4. Launch the ErgVideo application with a left-double click on the ErgVideo desktop icon, or from your start menu. **Now is a great time to look through the Help file.** Go to Help...Contents. A shortcut to the User document is on your new Start Menu item under ErgVideo.

You configure your ErgVideo Player to be compatible with Multirider, Coaching Software or Velotron Coaching Software. The configuration is directly under the "File" menu.

Quick-Start operation:

You operate ErgVideo by:

1. Selecting an ErgVideo (File...Open, select from the library list, or your ErgVideo Training Plan).
2. Design a specific ride from the ErgVideo, by introducing repeat sections or different start and end-points, using the Ride Designer step.
3. Select an intensity level for your ride.
4. Start the relevant CompuTrainer/Velotron application (*it will self configure under ErgVideo's control*)
5. Starting the training session by clicking the Play & Ride button.
6. You can end an ErgVideo by pressing the Stop button.

Pressing the ErgVideo STOP button: Default behavior is to always save the performance file logged by the RacerMate application. You do not need to respond to ANY prompts from the CompCS/VTCS/MultiRider 3 software. ErgVideo takes control. Only respond to ErgVideo prompts in the foreground. In MultiRider 3, stopping or resetting a ride before it ends means it won't save any data. We warn you about this before you go and wipe out the log file y stopping early.

It's easy to remember. Start from the File menu, check configuration configure, then open a an ErgVideo. Now start at the top of the "Pre-ride Config" menu, and work your way down the

available options, top to bottom. Finally, when everything is ready, the Play and Ride button will light, click it and start riding.

Registration of Videos:

You must unlock the ride content before you use it. Locked rides are demo-mode only and last 5 minutes.

You unlock the ride by visiting the ErgVideo Inc. website at www.ergvideo.com, and enter your DVD's Serial Number, as well as the License Identifier that appears on the registration screen.

You will receive a validation code from the website. Enter the validation code into the ErgVideo registration form presented by the ErgVideo application.

Your license agreement indicates that the program and content are licensed for only a single computer. An unlock code works ONLY for a given video and installation on one computer. The validation code will not work on others videos nor other computers.

You cannot get unlimited free unlock codes, since these are granted on a one-purchase, one-computer basis. You can purchase additional unlock codes to run on additional computers through ErgVideo Inc.

Limiting the copy-ability of ErgVideo is the only way that we can continue to provide you with excellent software and exciting new content. Please support this effort by purchasing the product.

How it works:

ErgVideo presents video content to the screen, and an ergometer POWER specification to the CompuTrainer/Velotron, at the same time. The video content is shot from inside a real race or training peloton. ErgVideo "slaves" the CompuTrainer software of your choice, either the Multirider software(recommended) or the Coaching Software.

The CompuTrainer's Ergometer mode is one where you are required to output a SET-POINT POWER LEVEL. The CompuTrainer will adjust the resistance according to how much power you are outputting, so that you will meet the set-point. If you slow down, it will increase the resistive force so that you MUST output the target power. It is not linked to your weight, but very simply, your power output.

This is not like climbing a hill at your own selected speed. Instead, it's like being forced to climb it at a speed demanded by your coach, and if you can't do it, well, he grabs your saddle and makes you pedal HARDER until you are pedaling hard enough again. Or, he just stops you.

You will be required to emulate all of the accelerations and efforts throughout his ride. Therefore, this experience is the only TRUE cycle-racing experience available on the CompuTrainer/Velotron, since a bike race is dictated by the behaviour of the other racers. You cannot simply pace yourself over the terrain of the course, you are, as in real life racing, often at the whim and whimsy of other people's race tactics.

You will feel the need to accelerate out of corners. You will feel relief when you catch a draft behind another rider. You will feel when attacks occur, and if you don't output enough power, you will start to grind to a halt. That pesky coach is pulling you out of the race.

The good news is that you never fall behind the race itself. When the others ease off, your coach will let you pedal again.

The ergometer-mode feature makes excellent intervals-training sessions possible too. You are forced to complete your intervals at the required power, for the required duration. Please visit www.ergvideo.com often for new content and www.intellicoach.ca for training information and training plans.

As in any race, you should be able to ride at a high cadence throughout. There is no need to try to keep a target cadence, however. If you find yourself grinding to halt, you have selected an overall ride intensity above your current capabilities. If you are using the CompuTrainer Multirider software, you can decrease (or increase) the overall intensity of the ride from the handlebar controller (See adjusting the AT in the Multirider documentation). If you are using the less feature-rich "CompuTrainer Coaching Software", then you must consider restarting with a lower-power ride, designed in the "ride designer" step of the ErgVideo Player.

Setting Intensity level:

CAUTION: DO NOT DAMAGE YOUR COMPUTRAINER!

If you find yourself grinding the pedals slowly against huge force, it means you were not capable to output the target power, or you did not put out the power required "on time". You should stop pedaling, and let the interval pass, and try again. If you continue to experience the slow-grind, you have clearly set the workout to be too intense. **You should reduce the intensity of the ride.** See "Setting Intensity Level"

Continuing to grind against excessive force may overheat and damage your CompuTrainer/Velotron. Don't do it. You should be able to ride ErgVideo at regular pedaling speeds, always greater than 60 rpm.

If you truly know your "threshold power", "one-hour power" or Anaerobic threshold power (using RacerMate's vernacular), you will guarantee yourself a racing-effort experience if you set the ride parameters at that level.

Your **Actual Threshold Power** is a physiological measure which you can determine through testing, or by estimating the average power you could sustain over an hour. ErgVideo 2.0 includes this capability with special testing ErgVideos. You should always enter the Actual Threshold Power boxes with your test scores or estimate.

The **Threshold Power Setting** is a level that you set according to your own wishes for a very hard or easier workout. The effect on the difficulty of your ride is visible by using the new "Web Tools" integrated into ErgVideo 2.0 Ride designer.

Racing ErgVideo sessions are scaled so that you will experience a true race-level workout when you set your Threshold Power **Setting** to equal your own **Actual** Threshold Power. During the stationary training season, not many people can handle race intensity, so we recommend using an intensity lower than your Actual TP, so reduce the Threshold Power **setting** to some fraction of your actual threshold power. You can observe the impact on the difficulty of your ride, by using the ride designer web tools.

You may find you cannot achieve the same power peaks as presented in the power profile. This simply means you do not have the same capacity above threshold as our original rider did. At

least, you don't ...yet!. Experiment with the threshold power setting. Start out conservatively, and as you get fitter, increase it. You'll find ErgVideo is infinitely challenging in this respect.

Coaching and Velotron Software: The intensity is controlled directly in the Ride Designer panel, and is also modifiable in the web tools. You should enter your true threshold power in the actual threshold power boxes.

Next, you should enter the "Threshold **setting** at which you will do this ride" in the next control box. You can see the effect of these settings on the average power of your ride. Better still use the Web tools to show clearly the difficulty of your ride in terms of time spent in zones, and the various CyclingPeaks WKO+ (a trademark of Peaksware, LLC.) metrics.

The default recommended setting is to use Threshold Setting = True Threshold, but setting it higher makes for a harder workout, and lower, easier.

Be very careful for racing videos, since the peak intensities are sometimes 3x larger than the average intensities.

MultiRider: There is a need to set the intensity level for each rider in your studio, up to 8 of them. You will open the Configure MultiRider session and see that there is now a field which stores each rider's Actual Threshold power. **By default, the initial threshold setting for each rider will be computed to the same proportion of actual threshold power as you set in the ride designer.** You can change the intensity independently for each rider after that. This is simply a mechanism whereby everyone can be configured to the same ride as developed in the Web tools, for example.

MultiRider software is HIGHLY RECOMMENDED, for the following reason:

The Threshold-setting, and thus the overall intensity of the workout, can be adjusted while riding, using the + and - keys on the handlebar controller, only using the MultiRider software. If your ErgVideo session is too difficult or too easy, use this option to continue riding without disturbance. Coaching Software (CompuTrainer and Velotron) does not permit in-flight adjustment, you must restart the ride, after rebuilding the ride at a different level

You may still have tremendous difficulty outputting the peak power required in the ride. This simply means one or more of a few things:

- You may lack the relative capacity above threshold that the original racer did. You can train this, but you will need to reduce the basic Threshold Setting level you've selected, to get through a ride.
- You are probably not ready to do the over-threshold racing efforts. Train with ErgVideo some more, at lower levels, and get there. But don't grind away at low cadence and struggling when the racers on screen are pedaling quickly. **You are over reaching, you risk injury, and you may well damage your CompuTrainer if you keep it up for too long.**
- You really didn't warm-up well before the ride. Recall how much you warm-up before a real race. Few people really do that before a stationary training ride. They expect to ride at their own whim, and they generally underestimate this experience the first few times.

We suggest setting the level at one that lets you finish well, and not grind down on the high efforts. ErgVideo rides can become crushingly hard. Start at a level LOWER than you expect, and after 10 minutes, then consider increasing the Threshold setting.

Riding Tips:

1. **Multirider software is recommended**, even for a single rider. MultiRider allows you to make fine adjustments to the riding intensity from the bike, during the ride, if you need to.
2. **Don't change gear**. It won't make any difference, since the CompuTrainer will always compensate to make you output the target power. Any gear will feel just as hard as any other. Maybe use a low gear when the power is LOW.
3. **Pick a larger gear for the racing sessions**: Even though (2) above is true, if you use a large-ish gear like 53x16 or 15, you will find it a little easier to handle sudden power surges. **BY ALL MEANS, WHEN YOU SEE A POWER SURGE APPROACHING, DO NOT TREAT IT LIKE A HILL: DO NOT GEAR LOWER OR SLOW YOUR EFFORT**. The CompuTrainer will really crush you, quickly. Instead, **SPIN-UP** just before the power surge hits, and be ready to really push, spinning hard through the interval. It's not a climb, it is a forced power level. The High gear means it is easier to "match" the fast transitions of CompuTrainer surges.
4. **REST whenever you can**: Notice that many times the power setting is very low, when the pack is resting, or coasting downhill. In this case, often the CompuTrainer load is completely off, and the only resistance is from your tire on the roller. Just as racing requires you to take rest when you can, if the CompuTrainer is letting you pedal easily, **THEN PEDAL EASILY** and as lightly as you can. Save-up for the big efforts coming. When the power level feels easy, you can "out-ride" the CompuTrainer, and you expend more energy than you need to. So pedal easily whenever you can. Pedal hard when you have to. Trust us, you'll have to.
5. **Don't try to outdistance others in the studio**: Racing under ErgVideo is meaningless. Everyone is going to do the same efforts at the same time, and output their power targets accordingly. You will start and finish at the same time. The way to outdistance everyone is to turn your threshold to 0 watts, and ride purely against the tire rolling force. The CompuTrainer provides no load. You may outdistance your mates, but you only did so because you had nothing holding you back, and you didn't really achieve any training like the others, who suffered for their miles. It's like measuring your time to ride down a hill, and then comparing against others who indeed rode the same hill...only UP it!
6. **How to stand up**: You may want to get off the saddle on a climb, but find you have to spin pretty hard to keep the power high. You can have an increased feeling of torque on a climb (or any power interval) by **LOWERING** your gear. Be careful, it will suddenly feel harder, and you will need to stand up, but notice that if you keep it rolling, you will feel the extra resistance per pedal stroke. Experiment a little, but be careful...going too slow means a big surprise.

Important Computer Performance Tips:

ErgVideo relies on two real-time applications to run together on an operating system that wasn't originally meant for real-time applications. It's best to try to avoid interruptions to both ErgVideo and your CompuTrainer software. We recommend:

1. Reschedule your weekly automatic virus scan to a time you are not riding your bike with ErgVideo.
2. Turn off windows updates or other automatic updates while you are riding. Actually, the **BEST** solution is to turn off your cable or DSL modem altogether. That way you are not interrupted by a pesky windows update, or other automatic downloads, possibly desynchronizing your ride.

ErgVideo has many clever means to keep your ride synchronized to the true time, even if your system is low-spec. If something happens that interrupts the CompuTrainer software and

introduces a delay, ErgVideo cannot correct it. Play it safe, turn off what you don't need while riding.

If you ride without looping intervals, even low performance PCs (P3-class processor, integrated video chipsets as in laptops) can run ErgVideo. Issues may arise when you use multiple displays set to high resolutions, and/or very short looping intervals.

Debug Mode If you wish to see if your computer is underperforming, turn on "debug mode" in the Tools menu. When the video is desynchronized, you'll get a warning in the lower panel. The warning should go away, meaning the video is resynchronized, within a minute and a half. If it never goes away, you have some options:

1. Use fixed-video size mode, under the tools menu. This eases some performance requirement from your video card.
2. Decrease your display resolution. The video won't look better on very high res displays, since it is shot and encoded at 720x480, 640x480 or 512x384.
3. Don't use intervals looping mode, or if you must, avoid frequent short loops. Make repeats long, like 10 minutes or so.
4. Be sure to use a good video codec like the one recommended, ffdshow. It is a very low-overhead decoder for the video encoding we use.

Using Multiple displays: If you have a need for two displays (a studio can show the MR3 screen on one display, and the ErgVideo on another) you should use "extended desktop" mode, rather than "Clone" mode. Many video cards will show good video on a "primary" display only in clone mode. Beware laptop external video ports, they OFTEN cannot run a high-resolution panel display AND a high res external display. Video may stutter and desynchronize. Use lower resolution and follow the other tips above.

Riding Without a CompuTrainer:

You can ride the ErgVideo without a CompuTrainer, but you must manually change the resistance and of course your riding speed. It won't be the same, but the video is entertaining and helps pass the trainer time.

You follow all steps as per the instructions that follow, except you configure for "no CompuTrainer" in the "Tools...Setup for Multirider, CS, or none" menu. You will not need to configure the CompuTrainer applications, and after you design the ride in Ride Designer, you can press "Play and Ride"

Detailed information:

Keep reading, a wealth of tips and info here.

Configuration for Multirider, CompuTrainer Coaching Software, Velotron Coaching Software or No CT:

The ErgVideo player needs to launch the CompuTrainer programs, and will locate the ones you say you have. If it can't find them in their default places, it allows you to navigate to them. ErgVideo will remember where they are after that.

You can still ride with a manual trainer. You just have to control resistance manually. The experience is profoundly better with a CompuTrainer.

Starting a Ride:

Open:

Select a video from the list in your library. It will open in the ErgVideo Player. ErgVideo will search the default directory tree for ErgVideo installation, and automatically populate the Library list. The default directories are:

Windows XP: C:\Documents and Settings\All Users\Documents\My Videos\ErgVideo

Windows Vista: C:\Users\Public\Videos\ErgVideo

If you installed videos to different directories, the "Add to Library" option allows you to navigate to them and identify them to the ErgVideo library manager. ErgVideo will remember their location for subsequent use, adding them to the library list.

If you have a compatible **ErgVideo Training Plan** from www.intellicoach.ca or from your own coach, clicking this option will open a file navigator for you to select your training plan. These are simple html format and will open in a browser-style window. An ErgVideo Training Plan contains links to the web-tool previews for your ErgVideo training sessions. Click on the link for the session you would like to ride. If you are connected to the internet, a preview window will appear showing you every detail of your session, including your power and zone-based training performance targets. You cannot edit your workout here, since the intent is that it has been prescribed by your coach...and you are supposed to do as he or she says!

Click OK and the ride will be preconfigured in the Ride designer step. You still need to open the ride designer to finally build and commit the session.

Your video will show in the viewer, and the ride power-profile will appear in the profile field.

Registration Screen:

You must unlock the ride content before you use it. Locked rides are demo-mode only and last 5 minutes.

You unlock the ride by visiting the ErgVideo Inc. website at www.ergvideo.com, and enter your DVD's code, as well as the License Identifier that appears on this screen.

Enter the validation code that you receive from ErgVideo Inc.

Your license agreement indicates that the program and content are licensed for only a single computer. An unlock code works **ONLY** for a given Video and installation on one computer. The validation code will not work on others.

You cannot get unlimited unlock codes, since these are granted on a one-purchase, one-computer basis. You can purchase additional unlock codes to run on additional computers through ErgVideo Inc.

Limiting the copy-ability of ErgVideo is the only way that we can continue to provide you with stable software and exciting new content. Please support this effort by purchasing the product.

Ride designer:

You can do the whole ErgVideo or any part of the ErgVideo by modifying the start and end markers. By default, the entire video is selected: Start=0:00:00, End = Video length. Slide the slider to a position, and click "ride Start" or "ride End" to select shorter rides as desired. ErgVideo 2.0 has added a fully detailed web-based tool kit.

Note: the web-based toolkit makes extensive use of AJAX (asynchronous Java and xml) technology, and there sometimes scripting issues that arise. Set your Internet Explorer 7..internet options...Advanced...disable script debugging (other)=True (checked). This will just stop any annoying offers for you to debug errors.

Repeats/Intervals mode:

You can also design a ride with repeats of a selected section, such as an interesting hill, or perhaps you want to make a 1 hour video into a two hour ride? Do so by moving the slider to the desired start of the interval, and click "Rep Start". Then move the slider to the end of the interval, and hit "Rep End". Now select the number of reps with the number box. Note how the length of your ride is updated (you must have 2 reps or more), as is the average power.

Setting Intensity Level

If you truly know your "threshold power", "one-hour power" or Anaerobic threshold power (using RacerMate's vernacular), you will guarantee yourself a racing-effort experience if you set the ride parameters at that level.

Your **Actual Threshold Power** is a physiological measure which you can determine through testing, or by estimating the average power you could sustain over an hour. ErgVideo 2.0 includes this capability with special testing ErgVideos. You should always enter the Actual Threshold Power boxes with your test scores or estimate.

The **Threshold Power Setting** is a level that you set according to your own wishes for a very hard or easier workout. The effect on the difficulty of your ride is visible by using the new "Web Tools" integrated into ErgVideo 2.0 Ride designer.

Racing ErgVideo sessions are scaled so that you will experience a true race-level workout when you set your Threshold Power **Setting** to equal your own **Actual** Threshold Power. During the stationary training season, not many people can handle race intensity, so we recommend using an intensity lower than your Actual TP, so reduce the Threshold Power **setting** to some fraction of your actual threshold power. You can observe the impact on the difficulty of your ride, by using the ride designer web tools.

You may find you cannot achieve the same power peaks as presented in the power profile. This simply means you do not have the same capacity above threshold as our original rider did. At least, you don't ...yet!. Experiment with the threshold power setting. Start out conservatively, and as you get fitter, increase it. You'll find ErgVideo is infinitely challenging in this respect.

Coaching and Velotron Software: The intensity is controlled directly in the Ride Designer panel, and is also modifiable in the web tools. You should enter your true threshold power in the actual threshold power boxes.

Next, you should enter the "Threshold **setting** at which you will do this ride" in the next control box. You can see the effect of these settings on the average power of your ride. Better still use the Web tools to show clearly the difficulty of your ride in terms of time spent in zones, and the various CyclingPeaks WKO+ (a trademark of Peaksware, LLC.) metrics.

The default recommended setting is to use Threshold Setting = True Threshold, but setting it higher makes for a harder workout, and lower, easier.

Be very careful for racing videos, since the peak intensities are sometimes 3x larger than the average intensities.

MultiRider: There is a need to set the intensity level for each rider in your studio, up to 8 of them. You will open the Configure MultiRider session and see that there is now a field which stores each rider's Actual Threshold power. **By default, the initial threshold setting for each rider will be computed to the same proportion of actual threshold power as you set in the ride designer.** You can change the intensity independently for each rider after that. This is simply a mechanism whereby everyone can be configured to the same ride as developed in the Web tools, for example.

NOTE: an ErgVideo ride is NOT dependent at all on WEIGHT. It is purely a power-based workout. What IS important is the AT setting for each rider in Multirider, or the power level selected for the ride in Coaching Software.

In Coaching, the power level applied is in absolute watts, as shown during the ride. In Multirider, the power level applied to each rider is his AT setting (watts) x the % of AT shown during the ride.

Build it!

Finally, click "Build it" and your ride is created for the CompuTrainer software you have selected, and placed in a suitable spot.

Other tips for the Ride designer:

- If you set up an intervals "looping" ride that you like, you can recall it by clicking "last ride".
- There are some limits on intervals:
 1. A ride is minimum 1 minute long.
 2. An interval "rep" can only start 10 seconds after the start position.
 3. An interval "rep" cannot be shorter than 10 seconds.
 4. The ride cannot end sooner than tens seconds after the last interval, or 1 minute, whichever is longer.

Configure Multirider Session:

This feature is enabled for Multirider Software users only Coaching Software users can skip this step:

This panel substitutes for the poor and unwieldy "rider set-up" user interface provided in the MultiRider software.

We recommend that you set-up your MultiRider centre to operate first using the MultiRider software on its own. You should not need to modify the station and com-port settings in this panel ever again.¹

You can pick from the list of rider's names, and drag-drop them into the MultiRider positions. Their last threshold setting, weight, and their recorded actual threshold power will be automatically filled. From here, you can adjust them.

New in ErgVideo 2.0 is the ability to track a user's **Actual Threshold Power** instead of simply the last threshold setting used in the previous session. You insert a rider's actual threshold power in the boxes marked. A rider's actual threshold power is determined through testing, or by estimating the average power they can sustain for one hour. The actual threshold is a physiologically determined number, and should be updated or changed only after testing.

The **threshold setting** is the threshold reference power that will be adopted by this user for the given session. Normally you ride ErgVideo with **Threshold Setting = Actual Threshold**, but as can be seen using the Ride designer Web-tools, you can change a ride's difficulty substantially by changing the threshold setting.

In this Configure MultiRider Session form, the "**Threshold Setting for this ride**" is automatically initialized according to the ratio of "Threshold setting/Actual Threshold" that you specified for a rider in the ride designer. You can modify it manually for each rider on this form, of course, as well as during the ride.

Now go to the next step in the "Pre-ride Config" menu.

Configure CompuTrainer Application

Here is where the selected CompuTrainer application is launched and automatically configured with your ride. **Click it, and stand back.**

Do not click anything while the ErgVideo is slaving the CompuTrainer software. It should only take less than a minute if your system isn't a dog. Everything you configured (ride, riders etc) will be set-up, totally hands-free for you! This way, we overcome any incompatible configurations if we required you to do all the steps needed.

Troubleshooting:

1. If the apps don't start, you don't have the correct version of Operating System (XP/Vista), or CompuTrainer Software.

¹ ****Note that Windows will reallocate virtual USB-to-com-port assignments if you disconnect your USB-serial port connectors and reinstall them in different ports, or if you insert a different serial device in the USB jack between uses of your MultiRider system. The com-port assignments may shuffle, and the static MultiRider settings may try to address a virtual com port that is no longer "addressed" by Windows. This can cause the MultiRider III software to crash on rider configuration. If so, discover which ports are available to Windows using the CompuTrainer Coaching "detect serial ports" feature, and reassign serial port numbers in the Configure MultiRider session form. This is definitely inconvenient, but it is a Windows behavior to accommodate your swapping of devices into and out of the USB port. You can minimize the occurrence of MultiRider crashes by NOT DISCONNECTING YOUR MULTIRIDER CENTRE'S CONNECTIONS to the computer.**

2. If something in the CompuTrainer application crashes, you didn't ensure that your installation was working correctly on its own. Go back and do that, without ErgVideo, and start over.
3. **If you lose sight of the ErgVideo Window, never fear**, it's somewhere in the task bar at the lower edge of your screen. Find it, click, and it should appear. Or press the "Alt" and "tab" keys until the ErgVideo icon is selected, then release. The ErgVideo window will come forward.

When the CompuTrainer software shows familiar riding screens:

You are ready to ride!

If the ErgVideo window is not on top, it's somewhere in the task bar at the lower edge of your screen. Find it, click, and it should appear. Or press the "Alt" and "tab" keys until the ErgVideo icon is selected, then release. The ErgVideo window will come forward.

Position the ErgVideo Window:

You can position the ErgVideo now on a second screen, or size it on-top of the Multirider or Coaching Software so that you see the video and whatever data you'd like to watch.

Press Play & Ride:

And you are off on your adventure. Read the riding Tips in this manual if you have any trouble.

Stopping a ride:

Pressing the ErgVideo STOP button: Default behavior is to always save the performance file logged by the RacerMate application. You do not need to respond to ANY prompts from the CompCS/VTCS/MultiRider 3 software. ErgVideo takes control. Only respond to ErgVideo prompts in the foreground. In MultiRider 3, stopping or resetting a ride before it ends means it won't save any data. We warn you about this before you go and wipe out the log file y stopping early.

Music Players:

ErgVideo supports the two leading music players, Windows Media Player, and iTunes. ErgVideo does not ship with iTunes, you can download that separately for free from Apple.

You require WMP 11 to run ErgVideo. If you also have iTunes installed, ErgVideo will detect its presence. You select one music player, and the play controls will appear in the lower left corner of the ErgVideoPlayer form.

ErgVideo will populate your playlists created for the selected player format (i.e. WM playlists or iTunes playlists) in the "**Playlists**" menu. It only populates the menu with playlists that contain only audio and music. Playlists that include video are not permitted, since it would burden most systems to play two video windows and CompuTrainer software.

Select your favorite playlist and select "**shuffle playback**" if you want to hear your songs played in random order.

You can play, pause, and change tracks, and adjust volume using the controls provided.

Other Menu Items:

Tools: Optimize for Video Card:

Here are a few options on video sizing you may wish to try if your system is low-performance, and if you see a great deal of video stutter and de-synchronization. You should also look at the FFDSHOW codec properties. It is very rich in post-processing capabilities, to brighten/darken video and add special effects.

Tools: Debug Mode

Use this only if you suspect much video de-synchronization. It will post a message in the lower panel regarding the amount of de-synch. When the message is gone, ErgVideo has synchronized video to REAL-TIME. If the power application still seems unsynchronized, something has interrupted your CompuTrainer application. Go back and read the tips on Computer performance, and how to avoid this.

Help Contents: Shows online help file.

Shows the help file.

Other info available at our forum website <http://forum.ergvideo.com>

How to play the instructional video:

Insert the DVD. The command window will open and it will say "hit any key to continue"...type CNTRL-C, and answer "Y" to "terminate batch job".

Now on "My computer", right click...then select "explore". It will show all your drives and some special folders. Locate the icon for your DVD drive and right click...select explore...and next find the file "instructions.avi". Double left click on that file and windows media player should open and you will see a 15 minute instructional video.

The video covers configuring your CT software, both Coaching and MultiRider, and it shows you how to configure your first ride.

Threshold Testing Videos.

New in ErgVideo 2.0 is the ability to use special "threshold testing" ErgVideos. Use these to determine your threshold power according to one of two well-accepted testing protocols: a 20 minute Time Trial, or a 60 minute Time Trial.

The 60 minute time trial will yield more accurate results, but it is difficult to correctly pace yourself for a whole hour. It is also quite time-consuming, considering the long warm-up required. Your threshold power is precisely the average power sustainable for the whole hour in this test. A long road is provided, at 2% uphill grade.

The 20 minute time trial will yield less accurate results, but it is easier to correctly pace yourself for only 20 minutes. It is also less time-consuming. Your threshold power is computed as 95% of the average power sustainable for the 20 minute test. A long road is provided, at 2% uphill grade. The 2% uphill grade is provided to slow you down, as the CompuTrainer is less accurate as you surpass 30mph. Most riders will be below 25mph on such a grade went putting forth their 1-hour sustainable effort.

It is important that you enter your weight for testing videos, and therefore you must ensure your personal data is correct. ErgVideo provides controls to set your personal info in MultiRider, Coaching, and Velotron modes.

It is also important that you do not respond to any prompts presented in the background by the CompuTrainer application software. Allow ErgVideo to fully control the process. ErgVideo will fully automate the test, starting with a very rigorous Erg-mode warm-up. After the test, it will save your results to .html and present them for you or your entire MultiRider centre. You can save results in a special folder that you define.

Prior to the test, the following info page is presented, and it is copied here for further explanation:

It is very important that you follow instructions and perform your tests consistently

The first part of the test video is a warm-up session, and operates in regular Erg mode. The actual test follows, and is conducted in "Course mode". During the warm-up, the video content is linked to the power-load, like any regular ErgVideo experience. During the test, however, the power output is up to YOU. The video is only shown to inspire you and help you keep a nice rhythm.

For the Erg mode warm-up, you must estimate your threshold power. Set this as usual in the "Ride Designer" (Coaching Software users) or "Configure MultiRider Session" form (MultiRider users). If this is your first test, it is not vital that your estimate is accurate. Use your test results from today as your threshold estimate next time.

The warm-up is not meant to be easy!

It is important that you warm-up vigorously. The intervals during the warm-up should make you breathe hard, and you may even wonder whether it is too hard. If you can keep the pedals turning above 85 rpm in the warm-up, then it isn't too hard. If you find the warm-up is easy, you need to increase your threshold estimate.

It is vitally important that your CompuTrainer is correctly calibrated before the Course Mode Test phase of the session. You can use the Pause/Recalibrate keys during the Erg mode warm-up. We suggest you do a spin-down calibration a few times, especially just before the test begins. In MultiRider, an on-demand recalibration is not available. You will be instructed to recalibrate AFTER the warm-up phase of the test video and before the test.

It is not necessary that your calibration number is always the same magic number like 2 or 2.5. It is best to be anywhere between 2 or 3 when the CompuTrainer and tire is fully warm. The CompuTrainer correctly calibrates power measurement according to the current calibration number. As long as it is calibrated under conditions similar to your test, it is very accurate and consistent. Do not waste time adjusting the tension knob to achieve exactly 2.0, since the system cools as you do this and it is completely unnecessary. Key is to get a number, any number between 2 and 3, while the CompuTrainer and tire are as warm as they will be in your test. **Your goal in the test is to sustain an average power as high as you can over the duration of the test, either 20 minutes or 60 minutes. Pace yourself as in a time trial or short triathlon.**

Once the test begins, you cannot pause and you cannot restart. You should not leave the bike for a nature break between the warm-up and test, but you should begin the test as soon as the warm-up and last calibration is done.

Your Threshold Power will be computed from your average power in the test. It will be 95% of your 20 minute test power, or 100% of your 60 minute test power.

Calibrating your CompuTrainer:

A customer asked:

Quote:

How would you recommend calibrating the CT's RR prior to starting an ErgVideo ride? I'm used to starting a 3D ride and then doing a few quick pause/calibrations throughout the first 5-15 minutes of the ride until the RR number stabilizes. Then I continue on with the rest of the ride until I'm done. Is there any analogous procedure I should follow? Should I just do 10-15 minutes in MR (or even 3D?) w/o any video started to get to a stable RR first...then fire up the video and assume the same RR is maintained?

LOTS of people cut corners in the roll-down calibration of their CompuTrainer. If you want the benefits of power training, and to really "get" the ErgVideo thing, calibrate you CompuTrainer and set the rr factor correctly. I'm not giving anything new here, it's all in your CT manual, but some people want more detail. Here is what works, step by step, and WHY. I get excellent agreement between SRM's and PowerTaps when I do it right.

I answered:

I actually recommend you do the calibration before starting the ErgVideo ride. I'll explain why in a minute. I know it is boring, but necessary. Do a spin down and get the initial "cold" number (aim for around 3-3.3-ish when it is cold). Now, it is VERY important to go into erg mode for the next step. F3 to accept the spin down, F2 to go to erg mode. Now set the power to something like 150-200, whatever is a reasonable initial warm-up pace for you. Now ride for about 5 minutes, go to cal mode with "+-" together, and do another spin down. The number will have changed substantially, and use F3 to accept and then F2 to move to erg mode. Use this time to warm yourself up, too, so going to progressively higher power is a **good** thing.

I suppose you can do a short 3d-ride with some hills, with pause-calibration as described above by the customer, and then turn off 3d, and move over to ErgVideo. Just be sure the warm-up is real, and vigorous enough to warm that tire.

The reason you must go into some "powered" mode is that the tire does not heat much in Cal mode. SOME people stay in cal mode, indicated by the speed showing and "up" or LL" or "cc" showing. It is a useless warm-up state. In this state, the CT magnets are off and your tire does not heat much, and not nearly to the temperature that it will heat to when you are really riding. So you will be mis-calibrated, on the COLD side. When cold calibrated, the CompuTrainer OVERESTIMATES power due to rolling resistance, and thus will not drive the magnets as powerfully as it should, when it should, to hit a target.

I recommend you keep riding and check the cal number at 10 minutes. Then repeat every minute or so. Eventually the number stabilizes and you can accept the number and then start the ErgVideo. I do recommend a number like 2-2.5 for ErgVideo. The reason is not related to accuracy so much as an ability to track at low loads, so you can feel even small variations at low power settings. The reason for 2-2.5 is that it minimizes power due to rolling resistance, without slipping, and this enables the CT to track you to correct power at lower power load settings. Think of it this way, if you are confused...it makes it feel more like "no resistance" when the load=0. A tighter roller will be harder to push (since the magnets are 'off at 0-load), so with a tight roller you will push 130W to go at 12km/h when a looser roller may only require 100W at same speed. If you are still confused, read my article in the other part of the FAQ about Erg mode vs. 3d mode for more on the low-power tracking issue.

I have a few good reasons for using this method, and I can probably come up with more if I take too long to type this:

1) YOU NEED A GOOD WARM-UP YOURSELF before riding a race video. People do not

believe they will get a race-level workout. They do not understand that they are FORCED to perform. If you ride a race video at your true threshold, you will get a race effort. People warm-up for races a lot longer and a lot harder than some 10 minutes at 0 resistance.

2) It works.

We have added a Pause/Recalibrate function to ErgVideo 2.0 for the CompCS applications, so the need to pre calibrate is not as critical, if you are prepared to ride the early part of your session un-calibrated, but will calibrate about 15 minutes into your session. In MultiRider, on demand recalibration is not available.

Ergometer Mode vs. 3d mode:

I'm often asked questions from people that clearly indicate that they do not fully understand the differences between Erg mode and "3d-mode" operation of the CompuTrainer. Erg mode is very much different from 3d mode.

In 3d mode, you are "in control" of your power output, as you are in real life riding. On any given road, you can go hard at 300W or easy at 100W. The 3d-mode simulator computes and applies the real-life drag you would feel when riding on a road with the current %grade. It does this considering your weight, assumed drag coefficient, and speed. The rolling resistance factor plays a part as well.

So when you ride outdoors with a power meter, or when you ride in 3D mode and you want to "hold" a target power (suppose your coach has prescribed it, or whatever), it is up to you to keep reasonably on target. If you slow down, your power goes down. If you speed up, it goes up. If you hit a hill, a higher contribution of your power must go into overcoming gravity, and if you don't slow down, your power will go up. So holding a "target" on the road or in 3d mode requires a good deal of concentration, gear and speed changes, and focus on the power output number, rather than on the visuals of the tool. So you will spend most of your concentration on your ride on these things, and your ride will be all about following the numbers....that alone can become boring and more work than it should be. Any targeted ride you do will only be about watching the data.

In Erg Mode, the CompuTrainer actually takes-over the task of tracking power FOR YOU! If you set the CT to 300W (say in stand-alone mode or Erg Mode in the Coaching Software), the CT will FORCE you to do 300W, or stop.

In Erg mode, the CT is a feedback control system with power output as the set-point controlled parameter. It computes your power output at every moment using the press-on force (to compute rolling resistance contribution of power), the current speed, and the current magnetic drag-force being exerted. When it senses your speed go UP (which is seen as your attempt to increase power above set-point), the CT will AUTOMATICALLY adjust the magnetic drag force DOWN in a manner that restores you to the target. Likewise when your speed goes DOWN, it will INCREASE the braking force to make your power settle back to the target. You CAN pedal slower...but you have to push harder.

Try setting it to a level above your ability and it will feel as if it gets progressively heavier, and eventually you will stop pedaling. The CT is very, very good at making you hit the target. It only fails at very low power settings, where the rolling resistance power dissipation exceeds the set-point power. For example, if you are going at a speed where the (calibrated) rolling resistance against the roller contributes say, 120W, and you have set the CT to 80W, then the CT just turns off the magnets. It could only bring your power lower if it could release the press on roller or drive the wheel as with a motor. None of this is really an issue, since it's piddly power anyway.

So the Erg mode is probably the best way to be sure you execute your workout prescribed, assuming it is prescribed as a set of power-level vs. time intervals. You can't get lazy.

ErgVideo uses the erg mode so that you are likewise FORCED to follow the racing and training action on the screen, and to feel the large power transitions required in a bike race, or in a prescribed training session. Most people are initially surprised at being forced to perform. They expect the

ErgVideo ride to feel like any other trainer ride where they had the ability to ignore the instructor, or take it easy whenever they feel like it. Erg Mode simply won't let you, (unless you stop). This is why we favor using the MultiRider software, since it allows you to modify threshold setting on the bike. Lots of people have to turn it down when they realize that there is no foolin' around, they realize their initial setting of threshold may have been too ambitious.

Finally, if you have read this far and still don't believe me, you can try this "erg-mode proof" experiment. I've excerpted it from an email I sent to someone who asked "do I have to try to follow the watts display carefully?"

My Reply:

"You have to output the watts, but you are wasting your focus "trying" to match your watts to the display at every second. The reality is, YOU HAVE NO OTHER CHOICE but to output the power, since "erg mode" implicitly forces that you do match watts to the prescribed watts...you need not "try" with your mind, anyway...just the legs. Consider that watts is Force x speed. If you go "over" the set-point, say by speeding up, the CT adjusts load force down until, at the new speed, you ARE doing the target watts again, and if you go under target by slowing down, it increases force to bring you back up to target. There is a short transient and a little bit of fluctuation around the set-point. You should see it if you examine your data after an intervals ride.

Now, you do have to watch the power display for the big transitions, since if you do not output the power in time, you will feel a HUGE increase in force you may never overcome or "catch-up to". So you have to be ready to push when the surges come. I just spin-up real fast...and hold it through the surge.

The only time the set point-power tracking fails is when the power due to rolling resistance already exceeds the target set-point. Then the CT can only turn off the force of the magnets. It shows you riding at say 120W when the set point is say 50W. This is because your RR is causing the whole load. The only thing you can do then is slow down. More detail here: <http://www.intellicoach.ca/instructions.html> under the heading "Finally some caveats".

If you are having a hard time being convinced, let me suppose that your threshold power is 250W. So it should be quite easy for you to hold, say 225W steadily. Change these numbers proportionally for your particular case. Set your rolling force so that after calibration spindown, you are about 2.0 to 2.4. When the roller is too tight, the "Rolling resistance contribution to power" is higher.

Put the coaching software in "Manual ergo mode", and adjust the "step" for 5W increments. (options...manual ergo options)

Start a ride in Start...manual ergo mode. Set the load to read 225W, or proportionally about 90% of your threshold power. You will see your Power out will fluctuate around a centre point of the load point 225.

Now, go ahead and accelerate up to about 300W on the power display. Try to hold it. You will see your power indeed go up, but curiously, it will start to fall toward 225 again, and you will need to accelerate again to go up to 300W...it will come down....and so on until the only thing you can do is go REALLY fast, and at 2.0-2.4 the speed you would have to go to keep the CT reading 300W...you probably can't do it.

Now, try the opposite. Set the erg for 275W. Now, CONSCIOUSLY TRY to ride at only 170W on the power display. You will feel the CT force get heavier, and you will work up toward 275 again...so you slow to try to hit 170....the CT gets heavier, and heavier.... this is erg mode. It is adjusting so that if you just keep pedaling, you will be forced up to the target power. It sees too little speed, so it increases force. Eventually you will not be able to continue pedaling. Try this at 400W...for fun.

Like I said, you don't have to try, except to stay pedaling and just ahead of the big spikes in power. The only proviso is when the power is set well below the level dissipated in RR. Test this by setting the erg to 50W. then you will easily be able to ride at 120W on the power readout. The CT is actually "off" and is computing your watts strictly from speed and the calibrated press-on force. Now when you put the CT to, say 140W, and stay at same speed, the CT computes 120W is still going to rr, and it ADDS enough magnetic force so that, at that speed, you will be doing 140W.

So really, you don't have to "try" to match watts with your head. You just will, except at the low end, where all you have to really do is pedal as easily as it will allow. This allows you to enjoy the ErgVideo action itself.

So you can just turn off your mind, and just don't get caught behind the big spikes.