



Indoor Cycle Instructor PROfile **YOUR Numbers**

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Training Type: **Specialty / Training Tools**
Working HR Zones: **Zone 1 to Zone 4**
Cycling Specificity: **3**
Total Class Length: **60 minutes**

PROFILE DESCRIPTION

Experience and “Start” to learn YOUR numbers. The ride provides an opportunity to explore the affects of cadence, heart rate and power (watts) and learn how to use these “training tools” that are becoming available on indoor bikes. It will also identify strengths and limitations and the ability to measure progress.

OBJECTIVE AND INTENSITY

The objective of this profile is to allow riders to get acquainted with some of the more important numbers on their indoor bike computers: Cadence, Heart Rate and Watts (Power). It is essential that we stress that riders should focus on “their” numbers and not the person next to them. They should avoid comparing themselves to others. There are numerous factors that will affect each of these numbers including strength, neuromuscular speed, aerobic fitness, form, fatigue, injuries, and body weight.

Have them first learn what their numbers are and become aware of how a different focus or approach will affect these numbers. Then they can use them as a guideline for “their” improvement and development.

Riders can experience a wide range of intensities depending on how hard they push during each effort. The drills that utilize leg speed have the greatest potential for increasing the heart rate exponentially. The better and more developed a rider’s pedal mechanics, the least the cadence ranges will affect/raise heart rate.

NOTE: Even though cadence, heart rate and power all affect each other, these drills are designed to only have riders focus on 1 or 2 number at a time so they don’t become overwhelmed. Once riders get accustomed to what the numbers mean, additional complexity can be added for a bigger picture. The format of each drill is also simple for the same reason. Observe more, think less.

Exploring Cadence

Now that we have a cadence meter on our bikes, we can observe and feel how smooth and efficient our pedal stroke is at different speeds. By determining which cadences (RPMs) we are comfortable with and which we are not will indicate how best to approach to developing leg speed and our pedal stroke technique.

Exploring Heart Rate

Observing heart rate allows us to see how the body is responding to a specific effort or the accumulation of efforts/training over time. It is important to note how the heart rate responds to shorter, intense intervals, longer aerobic steady-state intervals and muscular efforts.

Exploring Power (Watts)

When we focus on power output (watts), we can see how our body responds as specific workloads. This provides great feedback, minus emotion and heart rate response to the actual work we are doing or power we are generating. We can also connect with how different cadences affect our power output and efficiency.

NOTE: If you can announce this ride ahead of time, have people bring a pen/pencil and some paper to record what they observe.

THE PROFILE

WARM-UP (Part 1)

Length: 5:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

This ride requires a bit more “coaching” than maybe you are accustomed to. Take time during the warm-up to explain the different things (numbers) you are going to focus on so you only have to simply refer to them later.

THESE ARE “YOUR” NUMBERS

“Today we are going to learn how to use some of the numbers we see on our bike computers. The best way to start is to learn YOUR numbers. Each of use has specific strengths and limitations that are different then those around us. So these numbers are personal and a window into how we can measure our efforts and improvement.”

“Here are a few things we are going to explore today:

- (1) At which speeds is our cadence or leg speed more efficient and developed: seated and standing?*
- (2) How is our heart rate affected by short, repeated aerobic efforts and steady muscular efforts?*
- (3) How does specific power output affect our heart rate and how is power affected by the speed of our legs?*

Let’s explore OUR numbers!”

WARM-UP (Part 2)

Length: 5:00 Minutes

Intensity: 60-70% PE / Zone 2-3

Cadence: 60 - 100 RPM

Four 30-second efforts followed by 30 seconds of recovery.

“Let’s prepare the body for the workout with 2 short 30 second accelerations and 2 short 30-second standing efforts.”

“We’ll start with accelerations to loosen up the legs further and practice relaxing our upper body. Add enough resistance so you are able to stand safely and comfortably. Now go back in the saddle and begin the first 30-second acceleration...”

“Next, we’ll perform two standing efforts will additional resistance on the legs to put some pressure on the muscles to prepare them for the work ahead. Add the additional resistance and stand. Focus on form and relaxation out of the saddle. Don’t focus on performance or leg speed. Feel the workload on the legs.”

CADENCE: Seated Leg Speed

Length: 6:00 Minutes

Intensity: 60-80% PE / Zone 2-4

Cadence: 60 – 110 RPM

Start with a leg speed of 60 RPM for the first minute and then have riders increase their leg speed to 70 RPM for 30 seconds and then back to 60 RPM to recover. During the next minute they will increase their leg speed to 80 RPM for 30 seconds and then recover back to 60 RPM. Continue this pattern up to 110 RPM.

“Let’s begin by bring our leg speed (cadence) to 60 RPM. Now add some resistance to provide the feeling that you are on an easy to moderate flat road.”

“We are going to explore leg speeds from 60 to 110 RPM and determine when our form or control begins to break down. You’ll notice this when you begin to bounce in the saddle or you simply cannot increase your speed. Do what you can and don’t get discouraged.”

Remind riders to stay relaxed. Pay particular attention to tension in the shoulders and a tight grip on the handlebars.

Have riders take note of the speed at which they began to bounce or loose control.

RECOVERY

Length: 2:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

[Lower the Music Volume] This is a great time to ask people how they felt or anything specific they learned or experienced.

Explain the next drill.

CADENCE: Standing

Length: 5:00 Minutes

Intensity: 70-80% PE / Zone 3-4

Cadence: 60 – 100 RPM

Start with a leg speed of 60 RPM and have riders stand for 30 seconds and then return to the saddle for 30 seconds at 60 RPM to recover. Next have them increase their leg speed to 70 RPM and stand for 30 seconds followed by 30 seconds of recovery at 60 RPM. Repeat to 100 RPM.

“Let’s begin by bring our leg speed (cadence) to 60 RPM. Now let’s add enough resistance so we can stand. Give me 30 seconds and then we will recover back in the saddle for 30 seconds.”

“Excellent. Now we are going to increase our leg speed to 70 RPM. Add enough resistance to stand and come out of the saddle. Try to stay relaxed and breath deep and consistently.”

Encourage riders to focus on relaxation and balance. Have them take note of the standing leg speed when their breathing becomes difficult or have them record the last success standing speed.

RECOVERY

Length: 3:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

[Lower the Music Volume] This is a great time to ask people how they felt or anything specific they learned or experienced.

Explain the next drill as we turn our focus toward how our heart rate responds.

HEART RATE: Short Aerobic Efforts

Length: 4:00 Minutes

Intensity: 70-80% PE / Zone 3-4

Cadence: 80-90 RPM

Have riders maintain a base leg speed between 80-90 RPM. Have riders accelerate above 80 RPM for 30 seconds and then return. Repeat for 4 times.

I usually find a song that has the desired tempo so riders don’t have to focus on both the cadence AND heart rate. The 80-90 RPM leg speed will place more of the pressure on the cardiovascular system and often drive a higher heart rate.

“We are going to observe our heart rates response to short aerobic efforts. Let’s start by matching our leg speed to the music or bringing our legs to 80 RPM”

“Now take note of your heart rate. Next, let’s accelerate for 30 seconds and see what happens”

[after acceleration] *“How high did your heart rate go in 30 seconds? Now let’s return to our 80 RPM base tempo and see how much our heart rate recovers in 30 seconds.”*

Inform riders that they may experience an exponential increase in heart rate with each acceleration. Also, riders may find that their heart rate continues to increase for a short time even after the acceleration. This is sometimes described as EPOC (Excess Post-exercise Oxygen Consumption). It is believed that the body increases it’s rate of oxygen intake after strenuous

exercise to erase an oxygen debt. Have riders remain calm and focus on deep, satisfying breathes.

Have riders note how much their heart rate fluctuated between efforts. Did their heart rate get higher and higher? What was the difference between their 30-second acceleration heart rate and their 30-second recovery heart rate?

RECOVERY

Length: 2:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

[Lower the Music Volume] This is a great time to ask people how they felt or anything specific they learned or experienced.

Explain the next drill.

HEART RATE: Muscular Effort

Length: 4:00 Minutes

Intensity: 70-80% PE / Zone 3-4

Cadence: 60-70 RPM

Have riders maintain a base leg speed between 60-70 RPM. Ask riders to start with noticeable resistance on an easy flat road. Add noticeable resistance every 30 seconds.

Again, finding music that matches the desired tempo will allow riders to only focus on their heart rate and not get distracted by the other numbers.

“This drill will help us observe how our heart rate responds to an effort that emphasizes force on the muscles.”

“We are going to start on a easy flat and then add noticeable resistance every 30 seconds.”

“Remain relaxed and resist the urge to pull or tug on the handlebars.”

“If you can’t add resistance WITHOUT slowing down your legs, don’t. Stay at the same resistance and observe your heart rate.”

Have riders note the difference of how their heart rate responded to an effort where the leg speed was slower and more muscular in nature.

RECOVERY

Length: 3:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

[Lower the Music Volume] This is a great time to ask people how they felt or anything specific they learned or experienced.

Explain the next drill as we turn our focus toward power (watts).

POWER: The Effects of Workload on Heart Rate

Length: 6:00 Minutes

Intensity: 60-90% PE / Zone 2-4(5)

Cadence: 80+ RPM

Have riders choose a cadence that is 80 RPM or higher. It needs to be a speed they can sustain for the entire 6 minutes. Then have them add resistance to the bike until the Watts (power) indicates half of their body weight rounded UP to the nearest 25 watts.

For a 120 pound rider, take $\frac{1}{2}$ their body weight (60 lbs.) and round up to the nearest 25 for a total of 75 watts.

Have the riders note their heart rate as the drill begins. Ask riders to add enough resistance each minute to increase their watts by 25.

“This drill will help observe how specific power output affects our body by measuring our heart rate response. Once you’ve added enough resistance to equal $\frac{1}{2}$ your body weight rounded UP to the nearest 25 watts, note your heart rate at this workload.”

“We are going to increase our watts by 25 each minute by adding resistance.”

“Keep your speed steady and try to focus on maintaining consistent power. The power number can fluctuate 3-5 watts on many bikes so focus on a power “range” and not a specific number.”

“Stay relaxed and breathe deeply.”

Have riders note their heart rate at the end of the drill and observe the heart rate range. It is also helpful to have them connect with how the effort actually felt. Was it hard at the end of 6 minutes? If so, why? Was their breathing difficult? Did their legs get tired? If they were not able to continually increase their watts each minute, have them note the highest power output (watts) they observed.

RECOVERY

Length: 2:00 Minutes

Intensity: 50-60% PE / Zone 1-2

Cadence: 80 – 100 RPM

[Lower the Music Volume] This is a great time to ask people how they felt or anything specific they learned or experienced.

Explain the next drill.

POWER: The Effects of Cadence

Length: 6:00 Minutes

Intensity: 60-80% PE / Zone 2-4

Cadence: 60-110 RPM

Instruct riders to pedal at a 60 RPM cadence. Then have them add resistance to the bike until the Watts (power) indicates half of their body weight rounded UP to the nearest 25 watts (same as the previous drill)

For 30 seconds ask riders to increase their cadence to 70 RPM and note the change in watts (power output). Let them return to 60 RPM for 30 seconds to recover. Increase the cadence every minute.

Minute 1: 60 RPM

Minute 2: 70 RPM

Minute 3: 80 RPM

Minute 4: 90 RPM

Minute 5: 100 RPM

Minute 6: 110 RPM

ADVANCE OPTION: Have them hold each cadence for a solid minute with no recovery in between speeds.

“We are going to see how our power output is affected by our leg speed. This is an important relationship to understand as you begin to understand how to train with power.”

“This drill is NOT designed to be super difficult but allow you to observe your power at different speeds.”

“Let’s start with a 60 RPM cadence and then add enough resistance to increase your watts to ½ your body weight rounded UP to the nearest 25 watts.”

“You have 2 options: You can either increase to the next speed (70 RPM) for 30 seconds and recover for 30 seconds OR you can hold each leg speed for an entire minute without recovery.”

“OK, let’s increase our cadence to 70 RPM and see what happens to our power.”

This drill will help riders connect with the importance of leg speed AND resistance when trying to increase their power output. They will discover that adding resistance is the only way to increase the watts and sometimes not the most desirable one either.

NOTE: Make sure riders don’t get too caught up in their numbers: good or bad. They are just numbers and only reflect “that” days work. Many things can affect our performance including sleep, diet, stress at work, fatigue and illness. Doing this profile multiple times will help riders hone in on their actual numbers and give them a way to target their workouts better and measure improvement.

Active Recovery, Cool-down and Stretch

(7 Minutes)

After this workout, it is beneficial to put riders on an easy road for 2-3 minutes with a little bit of resistance. Target an intensity of 60-65% perceived exertion. This will keep their heart rates from plummeting while allowing the blood to do its magic, removing the byproducts of burning fuel and rehydrating the muscles and replenishing them with nutrients.

After 2-3 minutes, transition into stretching, but always encourage riders to listen to their bodies and remain on the bike longer if needed.

THE MUSIC

Since there is a fair amount of coaching and explaining for each drill, I prefer instrumental music so my voice is not in competition with the song’s vocals. Due to the numerous cadence ranges involved, I focused more on the level of “emotional” intensity as my guide for music selection over tempo (BPM / RPM). However, I did choose music that was 80 RPM or above for aerobic based efforts and music under 80 RPM for muscular efforts. Here is the music I used for these types of drills, all of which can be found on iTunes:

Song Title	Time	BPM	Artist	Focus
Crypton	5:10	100	Jens Buchert	Warm-Up 1
The Winner	5:12	64	The Crystal Method	Warm-Up 2
Mombasa	6:25	60	Peter Mergener	Seated Cadence
Wait (Whisper Song)	3:23	100	Instrumental Icons	Recovery (2 min)
Cold Fusion	5:14	65	Alan Morse	Standing Cadence
**				Recovery (3 min)
Hang Tough	3:56	80	Layo & Bushwacka	HR Aerobic Focus
**				Recovery (2 min)
KiDULTHOOD Theme	4:35	63	The Angel	HR Muscular Focus
**				Recovery (3 min)
The Main Monkey Business	6:01	84	Rush	Power HR Focus
**				Recovery (2 min)
Baltic Resonance	6:32	63	Vibrasphere	Power Cadence
Gryning	7:23	80	Carbon Based Lifeforms	Cool-down Stretch

** For a workout like this I will often use the same song over and over again for recovery and tell the class “This song is our recovery theme. Whenever you hear this music you know it is time to recover. Since this is much more instruction involved in this type of class, the recovery music is low and not the focus. Why kill yourself trying to find 5 different recovery songs.

Have Fun as your class learns THEIR Numbers!