4-WEEK BIKE-BASED ENERGY SYSTEM PLAN

Frequency — 5x/week (Mon–Fri) | **Equipment** — Air bike (assault/echo/fan) or spin/indoor cycle
Method — No HR monitors, RPE-based

1. INTRODUCTION

Hockey shifts are short, explosive, and repeated: a mix of 35–50 second bursts of high-to-max efforts, separated by 3–5 minutes of bench recovery, over 60 minutes of game time. That profile draws on all three energy systems:

- **Aerobic system** — fuels recovery between shifts and between periods and is the base that lets the other two systems recover and keep firing all game.
- **PCr (phosphocreatine/alactic) system** — powers the first 6–10 seconds of an explosive effort (a jump on a loose puck, an escape, a shot). Recovers in 2–3+ minutes, so it needs full rest to train cleanly.
- **Glycolytic system** — powers sustained high-intensity efforts of 20–60+ seconds (a long shift, a backcheck, a scramble). Trained with harder work and incomplete recovery.

Note: The glycolytic system is most responsible for "heavy legs" late in a shift or period.

Training all three in the same week — on separate days, in order of neural demand (power → aerobic → glycolytic) — lets each system be trained at high quality without one wrecking the others.

BIKE CHOICE

- **Air bike** — full-body (arms + legs), no skill/technique ceiling, self-limiting on eccentric stress — ideal for true maximal sprints and repeated hard efforts; mimics the total-body strain of a real shift.
- **Spin bike** — legs-only, steady, low orthopedic/postural cost — ideal for longer continuous or long-interval aerobic work where cadence/resistance control matters without upper-body fatigue bleeding into practice.

2. RPE SCALE (0–10)

RPE	Descriptor	What it should feel like
1–2	Very easy	Recovery pace, could hold a full conversation
3–4	Easy / conversational	Aerobic base pace, could speak in full sentences
5–6	Moderate–hard	Aerobic power/tempo pace, could speak in short phrases only
7–8	Hard	Glycolytic work pace — sustainable only for the prescribed duration, no more
9	Very hard	Near-maximal, can't sustain more than a few extra seconds
10	Maximal	All-out, could not go any harder for any duration

COACHES — have players call out their RPE immediately after each effort. If sprint RPEs start reading 7–8 instead of 9–10 late in a session, that's a legitimate cue to end the set — quality over completing the number.

3. STANDARD SESSION FORMAT

Every session = Warm-up → Main Set → Cool-down. Don't skip either end, especially before PCr/glycolytic days.

- **Warm-up (8–10 min):** 5–6 min easy spin (RPE 2–3) building to RPE 4, then 3–4 × 5–8 second progressive build-ups (50% → 75% → 90% effort) with full recovery.
- **Cool-down (5 min):** easy spin, RPE 2, unloaded/light resistance.

4. WEEKLY TEMPLATE AT A GLANCE

Day	Focus	Bike	Primary System
Monday	Aerobic Base (continuous)	Spin	Aerobic
Tuesday	PCr / Alactic Power	Air Bike	Phosphocreatine
Wednesday	Aerobic Power (long intervals)	Spin	Aerobic
Thursday	Glycolytic Capacity	Air Bike	Glycolytic
Friday	Shift-Simulation / Repeated Effort	Air Bike	Glycolytic + Aerobic recovery

Rationale for order: Tuesday's PCr work needs players fresh (early week); Wednesday is lower CNS-cost so it sits fine mid-week; Thursday/Friday stack the two hardest, most fatiguing days before the weekend, assuming games fall Fri/Sat/Sun. If games fall earlier in the week, shift this template or swap Thursday/Friday content with Monday/Tuesday.

THE PLAN

5. WEEK 1 — INTRODUCTION / ESTABLISH BASELINE

Day	Session	Bike	Prescription
Mon	Aerobic Base	Spin	20 min continuous @ RPE 4, maintain high cadence, moderate steady resistance. No surges — establish comfortable, repeatable pace.
Tue	PCr Power	Air Bike	8 × 6 sec reps ALL-OUT sprint, RPE 9–10. Rest 2:00 min easy spin between reps (work:rest ≈ 1:20). Full recovery is non-negotiable.
Wed	Aerobic Power Intervals	Spin	4 × 5 min reps @ RPE 5–6, cadence 90+ rpm. Recovery: 2 min easy spin (RPE 2) between reps.
Thu	Glycolytic Capacity	Air Bike	2 sets x 5 reps of 30 sec hard @ RPE 8. Recovery: 2 min easy spin between reps; 4 min between sets.
Fri	Shift Simulation	Air Bike	2 periods x 5 reps of 40 sec @ RPE 8 (simulated shift). Recovery: 3 min bench recovery between reps; 5 min between periods.

6. WEEK 2 — BUILD VOLUME

Day	Session	Bike	Prescription
Mon	Aerobic Base	Spin	25 min continuous @ RPE 4–5, cadence 85–95 rpm.
Tue	PCr Power	Air Bike	10 × 6 sec reps ALL-OUT sprint, RPE 9–10. Rest 2:30–3 min between reps.
Wed	Aerobic Power Intervals	Spin	5 × 5 min reps @ RPE 5–6. Recovery: 2 min easy spin between reps.
Thu	Glycolytic Capacity	Air Bike	2 sets x 6 reps of 30 sec hard @ RPE 8. Recovery: 2 min between reps; 4 min between sets.
Fri	Shift Simulation	Air Bike	2 periods x 6 reps of 40 sec @ RPE 8. Recovery: 3 min between reps; 5 min between periods.

7. WEEK 3 — PEAK LOAD WEEK

Day	Session	Bike	Prescription
Mon	Aerobic Base	Spin	30 min continuous @ RPE 5, cadence 90+ rpm. Optional: 2 × 2 min surges @ RPE 7 mid-ride, returning to RPE 5 after.
Tue	PCr Power	Air Bike	10 × 8 sec reps ALL-OUT sprint, RPE 9–10. Rest 3 min between reps. (Effort duration increases slightly — still full recovery.)
Wed	Aerobic Power Intervals	Spin	4 × 8 min reps @ RPE 6. Recovery: 2 min easy spin between reps.
Thu	Glycolytic Capacity	Air Bike	3 sets x 5 reps of 30 sec hard @ RPE 8–9. Recovery: 2 min between reps; 4 min between sets.
Fri	Shift Simulation	Air Bike	3 periods x 5 reps of 40 sec @ RPE 8–9. Recovery: 3 min between reps; 5 min between periods.

8. WEEK 4 — DELOAD & BENCHMARK WEEK

Volume drops roughly 40% to let players absorb the block; intensity stays high on the short benchmark efforts so you get a usable read on progress.

Day	Session	Bike	Prescription
Mon	Aerobic Base	Spin	20 min continuous @ RPE 3–4 (easy, recovery-oriented).
Tue	PCr Benchmark	Air Bike	6 × 6 sec reps ALL-OUT sprint, RPE 10. Rest 3 min between reps. Record best effort (peak wattage/cal) as a baseline for future blocks.
Wed	Aerobic Power	Spin	3 × 5 min reps @ RPE 5.
Thu	Glycolytic Benchmark	Air Bike	1 × 30 sec ALL-OUT effort (Wingate-style test) @ RPE 10, then full 5 min recovery, then 2 sets x 4 reps of 30 sec hard @ RPE 8. Recovery: 2 min between reps; 4 min between sets.
Fri	Shift Simulation (Light)	Air Bike	2 periods x 4 reps of 40 sec @ RPE 8. Recovery: 3 min between reps; 5 min between periods.

9. PROGRESSION PRINCIPLES

- **PCr days:** progress by adding reps first, then small increases in effort duration (6s → 8s). Never shorten rest to "make it harder" — that turns it into a glycolytic session and defeats the purpose.
- **Glycolytic days:** progress by adding reps or sets before shortening recovery. Keep work:rest around 1:4–5 throughout this block.
- **Aerobic days:** progress primarily through duration, secondarily through small RPE increases. Keep the continuous Monday ride truly conversational-effort in weeks 1–2.

- **Friday shift-sim:** this is the integrator session — it's fine for players to feel real fatigue here, since its purpose is training the ability to recover repeatedly, exactly like a game.

10. MONITORING WITHOUT HR DATA

Use session RPE load as your only metric:

Session Load = session RPE (0–10, rated 15–30 min post-session) × session duration (minutes)

Watch for:

- Your fatigue levels creeping up as the week progresses — efforts become a lot harder than they should; consider taking a rest day. Any day where self-reported RPE is unusually high for a prescribed easy/moderate session — treat as an early fatigue flag.

11. COACHING & SAFETY NOTES

- Don't stack this with a heavy lower body lift or a hard skate practice on the same day, especially Tuesday and Thursday/Friday.
- If a scrimmage or practice game falls inside a training week, drop or lighten the nearest glycolytic/shift-sim session (48–72 hr proximity to a game is not the place for maximal repeated efforts).
- If you are carrying acute soreness or minor injury from practice, skip a hard bike day and replace with a 20–30 min RPE 4 spin. High intensity technique breaks down first under fatigue on max efforts.

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