The sprint in LIT ride by Almquist

A brief practical guide
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With the exception of the cited literature, the following content is to be considered anecdotal. You should never blindly adopt this or any other training strategy without first considering your individual fitness and health. In no way does the content of this document constitute medical advice, nor does it replace such advice. Regarding concerns related to your health you should always consult professional medical personnel.

The sprint in LIT ride by Almquist

The following low intensity ride, which contains embedded sprints is described in several papers by Almquist and colleagues (1-3). It also formed a key topic in the PhD thesis of Nicki Winfield Almquist from 2020 at the Norwegian University of Science and Technology (4).

The above papers report that adding sprints to low intensity training may:

- improve 30 second sprint power by 3-4% in (2-3 weeks intervention)
- maintain 20 minute power during off-season
- add positive trickle-down effects; 7% increase in 20 minute power 6 weeks into base training (after sprinting during off-season)

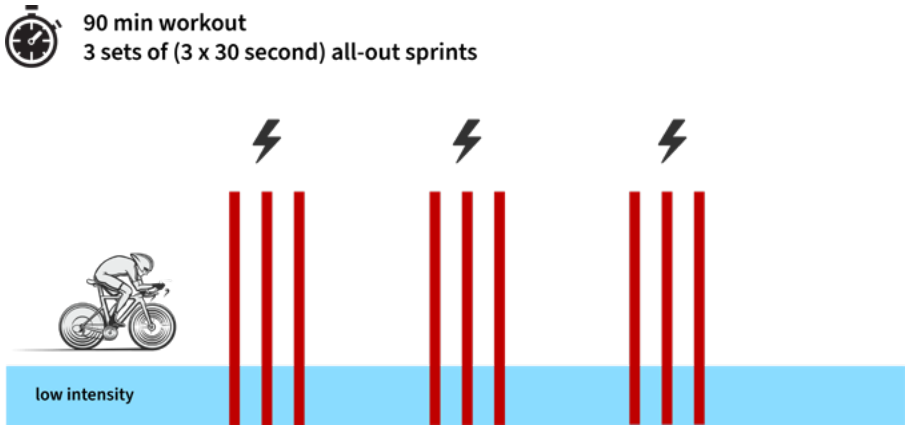
For detailed explanations on the above results, please refer to my article on the topic at wattkg.com.

This pdf provides my pragmatic advice on how to implement the LIT with sprints ride in your training.

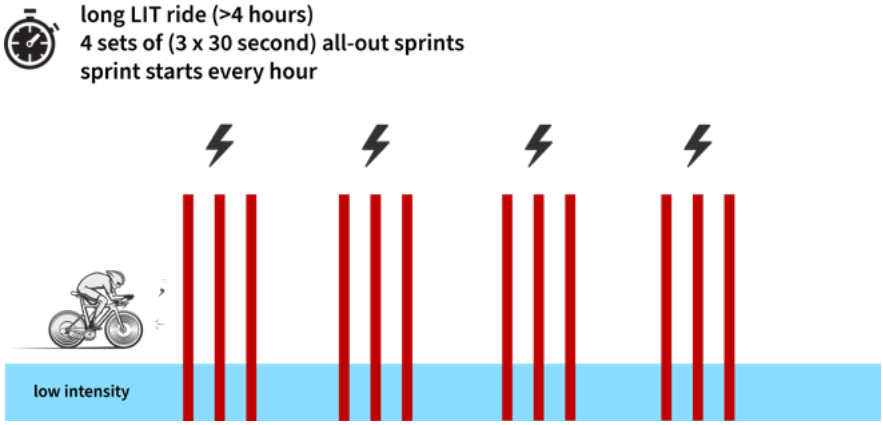
The workout

In their work, Almquist and colleagues use two versions of the workout on their elite riders.

The version used during off-season consisted of 90 minutes low intensity work embedded with 3 sets of 3 x 30 second sprints (a total of 9 sprints). Recovery periods between sprints in a set were 4 minutes in duration.



The second version used during training camp involved low intensity rides of at least 4 hours duration. Embedded in these rides were 4 sets of 3 x 30 second sprints. Again, recovery periods between each sprint in a set were 4 minutes.



The sprint intensity

Almquist and colleagues prescribed their sprints as being «all-out».

Private communication with Almquist reveals that riders were instructed to give it everything they got from the gun. In other words, zero element of pacing. Aim for the highest possible peak power, and then hold on for dear life.

`Individual considerations:`

If this sounds a bit heavy and you're currently a less well-trained rider, you could of course consider easing into this workout format by holding back slightly during your sprints. And then, as your muscles become accustomed to sprinting over the weeks to come, gradually increase your efforts towards all-out.

The sprint duration

As mentioned, duration of each sprint is 30 seconds.

`Individual considerations:`

It is of course possible to consider any other sprint duration that you may fancy.

A shorter duration, such as 10 or 20 seconds would probably take some of the neuromuscular load off your efforts. This would possibly reduce any residual fatigue and muscle soreness after your session.

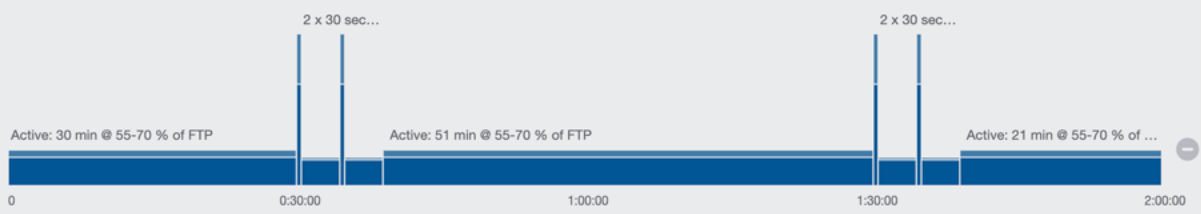
Whether this would induce the similar magnitude of positive effects as in the cited studies is an open question. It is possible that shorter sprint durations is a trade off between less fatigue/soreness and blunting of the training adaptation from said sprints.

That being said, the involved elite riders seemed to tolerate these workouts without any signs of added fatigue when compared to traditional low intensity rides (5). A shorter sprint duration could be something to consider for less well-trained riders when getting started with this workout. To then later progress towards 30 seconds duration.

How to perform the workout

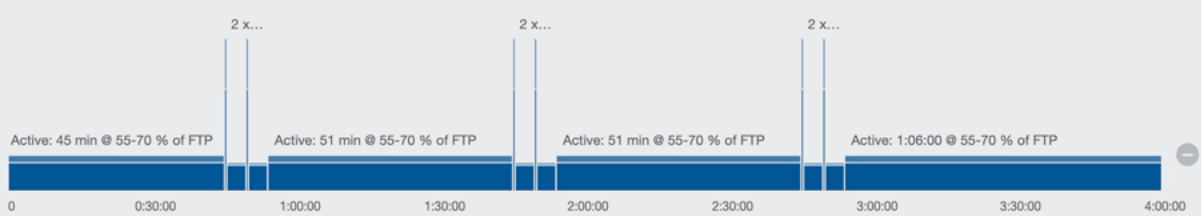
Below are a few examples of how I typically prescribe the workout in my training plans.

The first one is an introductory edition of this workout for novice and mid-level amateurs relatively early on in the season. Here the intention is to ease into this workout format with a relatively low level of repetitions.



The second example below is a version of this workout I typically use with mid-level to elite age-group riders on a weekly basis once they have achieved a reasonable training base.

Noticably, I have shaved off one repetition per set and only use three sets, which in my experience tends to go a long way for these riders (recall, the athletes in Almquist's studies were young and ELITE athletes, which could be expected to tolerate more load than a more senior amateur rider).



My experience is that many amateur cyclists have yet to make use of this sprint in LIT training format.

And typically, they are very happy to start implementing it.

Also, in the context of polarized and pyramidal training plans, the feedback is that the above prescriptions performed x1 per week gives solid net results on overall performance.

Granted, it is of course hard to separate what progress comes from which workouts in a non-experimental setting. But to me, this workout format certainly appears useful and well tolerated - both from a scientific and experience point of view.

Best of luck with your sprints!

- Martin

PS! If you want more training plans and resources to help you become a faster cyclist...

...it may just be that my TRIBE membership could help you out

References

1. Almquist NW et al. Effects of including sprints in LIT sessions during a 14-d camp on muscle biology and performance measures in elite cyclists. Medicine and Science in Sports and Exercise, 2021;53(11):2333-2345

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3. Taylor M & Almquist et al. The inclusion of sprints in low-intensity sessions during the transition period of elite cyclists improves endurance performance 6 weeks into the subsequent preparatory period. International Journal of Sports Physiology and Performance, 2021;16:1502-1509

4. Almquist, NW. Optimising endurance training of elite cyclists by inclusion of sprints during low-intensity sessions. Doctoral thesis, NTNU Open, 2020. https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/2718960

5. Almquist NW et al. Effects of including sprints during prolonged cycling on hormonal and muscular responses and recovery in elite cyclists. Scandinavian Journal of Medicine & Science in Sports, 2021;31(3):529-541