



Canoeing training systems in russia and belarus: comparative analysis

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Abstract

Objective of the study was to make a comparative analysis of the canoeing elite training systems in Russia versus Belarus in view of the great competitive accomplishments of the Belarus canoeing elite in the top-ranking events for the last five years.

Methods and structure of the study. We have analyzed, for the purposes of the study, the following: more than 50 foreign and national study reports; individual Russian canoeing elite training system for three years (2014-2016) versus that of the Belarus canoeing elite training system accessible in the reference literature.

Results and conclusion. The comparative analysis found a few differences in the national canoeing elite training system which contributions to the actual competitive progress cannot be fairly rated in fact (with the analysis being further complicated by the data being not always reported on a yearly basis).

Regardless of the training system designs as such, it is still difficult to analyze the contributions of the Russian/ Belarusian canoeing elite training system differences in the competitive progresses. We believe, however, that the following training system design provisions deserve special attention: the Belarusian canoeing elite shows an expressed wavelike workout management pattern with the training system individualization service that is very important. Our analysis of the relevant reported foreign and domestic canoeing elite experiences for the last few years showed that some other training and competitive progress factors with their contributions need to be respected by the national canoeing elite training systems.

Keywords: *Belarus canoeing elite, annual training system, training process, individualized training system, comparative analysis.*

Background. One of the most serious drawbacks of the national elite training system in the endurance-intensive cyclic disciplines, as we believe, is that the national sports community tends to neglect serious comparative analysis of the national versus foreign training system design and management experiences [1, 11], otherwise the training system would be timely and efficiently updated/ customized in every element for success.

Objective of the study was to make a comparative analysis of the canoeing elite training systems in Russia versus Belarus in view of the great competitive accomplishments of the Belarus canoeing elite in the top-ranking events for the last five years.

Methods and structure of the study. We have analyzed, for the purposes of the study, the following: more than 50 foreign and national study reports; individual Russian canoeing elite training system for three years (2014-2016) versus that of the Belarus canoeing elite training system accessible in the reference literature [4, 5, 9].

Results and discussion. The comparative analysis found a few differences in the national canoeing elite training system which contributions to the actual competitive progress cannot be fairly rated in fact (with the analysis being further complicated by the data being not always reported on a yearly basis). The analysis found that in 2014 and 2016 the unsuccessful



athlete's workouts were higher in the intensity zones 4 and 5; and in 2015 and 2016 the unsuccessful athlete's total workouts were higher. Furthermore, the comparative analysis of the annual totals of the Russian and Belarus samples (see Table 1) found differences in the workout intensity zoning approaches, with the Belarusian experts prioritizing lactate variations and training times (a really important index) as recommended by the V.S. Farfel [8] classification system adopted by N.I. Volkov [3].

Note that the Russian experts tend to rate the blood lactate versus the competitive speed ratio [2, 6] which is known to vary in a wide range due to a number of external factors of influence that may not always be fairly accounted and analyzed.

The comparative analysis of the Russian/ Belarus canoeing elite trainings and standard physical conditioning complexes found the following differences. The Russian canoeing elite showed much wider variations of the key training system test criteria – unlike the Belarusian canoeing elite. We should note above all that the Russian canoeing elite was tested with the lower total distances, lower Zone 1/2 rowing and lower training machine workouts; plus somewhat lower general physical conditioning workouts. On the other hand, the Russian canoeing elite was tested with the higher Zone 3 totals and higher unspecific trainings (jogging, skiing, swimming), as well as the training machine™ and weightlifting workouts, with a special focus on flexibility trainings.

Regardless of the training system design as such, it is still difficult to analyze the contributions of the above differences in the competitive progresses. We believe,


however, that the following training system design provisions deserve special attention: the Belarusian canoeing elite shows an expressed wavelike workout management pattern, with a rest break in January unusual for the Russian canoeing elite; significant growth of the aerobic trainings in June (in the competitive period); and, most important, prudent training system individualization in every workout element, with a special sensitivity to the relevant competitive progress contributors.

It should be also mentioned that the Belarusian canoeing elite training system offer individual progress scenario for every athlete [5, 7, 10]; whilst the Russian canoeing elite tend to benchmark provisionally "successful" and "unsuccessful" individual progress in the annual training system with the progress rating criteria. It may be also assumed that the correlation analysis of the individual competitive accomplishments for the last 6-7 years versus the training system elements with a regression analysis (as is the case for the Belarusian canoeing elite) is less efficient than the modern ROC analysis (based on a comprehensive test data set of course) that help highlight the key progress factors with their sensitivities and specific contributions. However, the training system individualization provisions (standard for the Belarusian canoeing elite) may be recommended for application by the Russian canoeing elite.

As for the other training system parameters that need to be addressed by the Russian canoeing elite training system (as demonstrated by our analysis of the foreign and domestic study reports), we would recommend the individual training system and progress

Table 1. *Canoeing elite annual training systems in Russia and Belarus*

Belarus: Intensity zones and training tools	km/ hours	Russia: Intensity zones and training tools	km/ hours
Zone 1: lactate < 2 mmol/l, 10+min, km	1869-2173	Zone 1: lactate < 2 mmol/l, 60% maximal speed, km	1699-1962
Zone 2: lactate 2-4 mmol/l, 2-10min, km	1682-1808	Zone 2: lactate 2-4 mmol/l, 70-80% maximal speed, km	1068-1464
Zone 3: lactate 4-8 mmol/l, 40s-2min, km	438-494	Zone 3: lactate 4-8 mmol/l, 80-85% maximal speed, km	471-623
Zone 4: lactate >8 mmol/l, 15-40s, km	202-230	Zone 4: lactate >8 mmol/l, 90-100% maximal speed, km	97-280
Alactate zone: 15-minus s, km	66-82	Alactate zone, maximal speed, km	50-97
Total distance, km	4258-4786	Total distance, km	3667-4098
Jogging, h	95-109	Jogging, skiing, swimming, h	130-140
Training machine workouts (dansprint ergometer), h	100-116	Training machine workouts, h	35-79
Cycled weightlifting workouts, h	91-107	Cycled weightlifting workouts, h	142-153
Standard body conditioning workouts without apparatuses	74-86	Flexibility exercises, h	111-116
Total general physical training, h	377-419	Total general physical training, h	352-390



plans giving a special priority to the strength training; stress tolerance trainings in varied conditions; subjective/ objective workout intensity tests in the trainings; a range of strength training practices on water, taping procedures and some others.

Conclusion. Regardless of the training system designs as such, it is still difficult to analyze the contributions of the Russian/ Belarusian canoeing elite training system differences in the competitive progress. We believe, however, that the following training system design provisions deserve special attention: the Belarusian canoeing elite shows an expressed wavelike workout management pattern with the training system individualization service that is very important. Our analysis of the relevant reported foreign and domestic canoeing elite experiences for the last few years showed that some other training and competitive progress factors with their contributions need to be respected by the national canoeing elite training systems.

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