

The Russian Approach to Planning a Weightlifting Program

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IN THE PAST, ELITE WEIGHTLIFTERS (1, 2, 5, 6, 8, 14) based their weightlifting programs on the parameters of volume and intensity, the volume parameter being based on repetitions, sets of repetitions, and amount of weight (in kilograms) lifted per workout, microcycle, mesocycle, period of training, and years (6). Around 1970, however, coaches and trainers began using the number of repetitions when calculating the volume parameter in planning.

Saksonov attempted to find other parameters to control the volume of training (11, 12). He argued that tons and repetitions did not reflect the volume of training. Instead, he developed a new control system based on kilograms multiplied by the height of the lift. This control system was not readily accepted in weightlifting circles, however, due to the difficulty in calculating the volume, the varying heights of the weightlifters, and the fact that the system did not correlate with the various weightlifting exercises.

The intensity parameter in planning was based on the average possible weight that could be lifted per exercise, workout, mi-

crocycle, mesocycle, and period of training (6). Another way to plan the intensity parameter in a long period of training was through relative intensity (7), that is, intensity of training based on the athlete's best performance.

Bernshtein explains that the human body not only adapts to training but can also surpass the planned goals (3). The establishment of individualized short-term and long-term goals is critical in this new methodology of planning, as opposed to previous planning based on predetermined numbers of repetitions. The goals must reflect a new concept of weight training cycles when applied to weightlifting.

■ Traditional Versus New Concept of Planning

Traditional Planning

Traditionally, weightlifting programs were based on several factors:

- Distribution of volume per years based on repetitions per week
- Planning of weightlifting exercises per cycle of training

- Measurement of the volume and intensity per cycle of training and groups of exercises
- Planning of volume based on group of exercises in each training cycle
- Distribution of volume and intensity per 4-week training cycle
- Planning the number of repetitions between 90% and 100% in each month.

However, I consider the calculation of the number of repetitions to be neither a reliable nor accurate indication of one's potential in future weightlifting events.

New Method of Planning

The new method of planning weightlifting programs comprises four main points:

1. Yearly goals are based on competition results and fluctuations in weight, height, and other factors.
2. Training is cycled according to competitions and goals in each competition.

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3. Each group of exercises is based on the varying effects on the human body.
4. Technical and intermediate goals in each cycle of training are established with respect to each weightlifting exercise.

Yearly Goals. Coaches should statistically analyze the following items to predict the athlete's goals for the next several years:

- Age
- Years of training
- Body weight
- Height
- Category
- Best snatch
- Best clean and jerk
- Olympic-style total
- Score based on the 1992 Sinclair coefficients (13)
- Correlation between snatch and clean and jerk.

Coaches can predict yearly goals based on the fluctuations in weight and height of the weightlifters (see Figures 1, 2, and 3). Figure 1 represents an example of changes in height. The height of young developing weightlifters can help predict future body weight, which in turn allows us to predict future goals in terms of technique, maximum lifted weight, and so on (9, 10).

Figure 2 shows how to predict the weightlifter's body weight for annual competitions. For best results, height and body weight must have an optimal relationship, as shown in the Kettle index in Figure 3.

Figure 4 uses the Olympic total to help predict yearly goals. This statistical analysis can also be used to calculate the maximum weight that can be lifted in the snatch (Figure 5) and the clean and jerk (Figure 6) in future competitions. Figure 4 shows the relationship between Olympic total

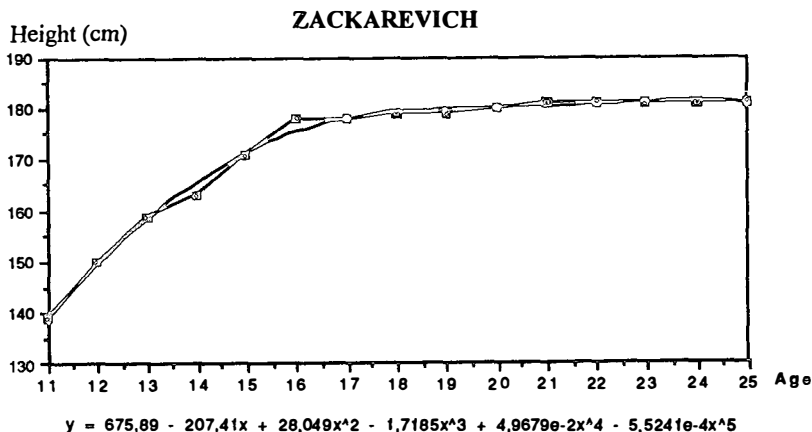


Figure 1 Statistical analysis of the development of height.

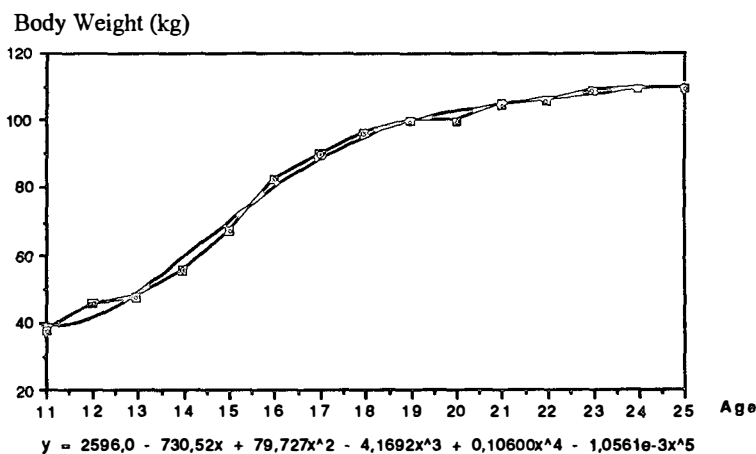


Figure 2 Statistical analysis of the development of body weight.

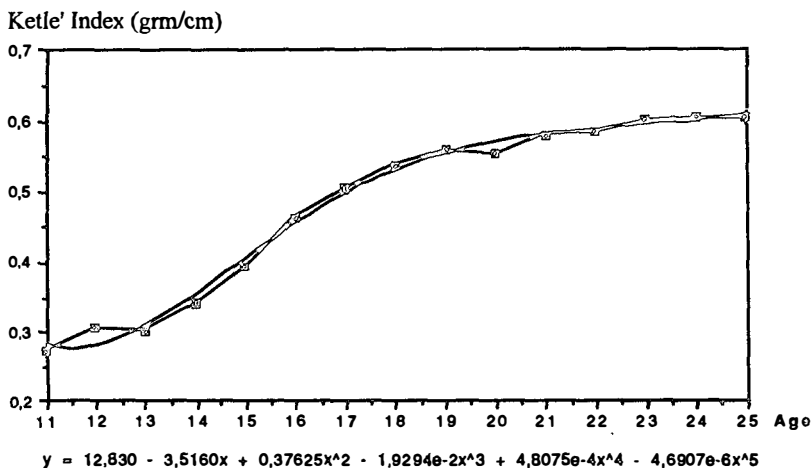


Figure 3 Development of the relationship between height and body weight.

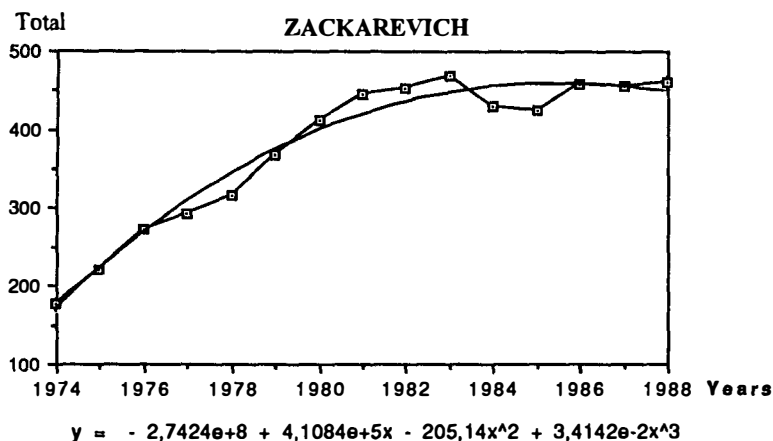


Figure 4 Evolution of the Olympic total.

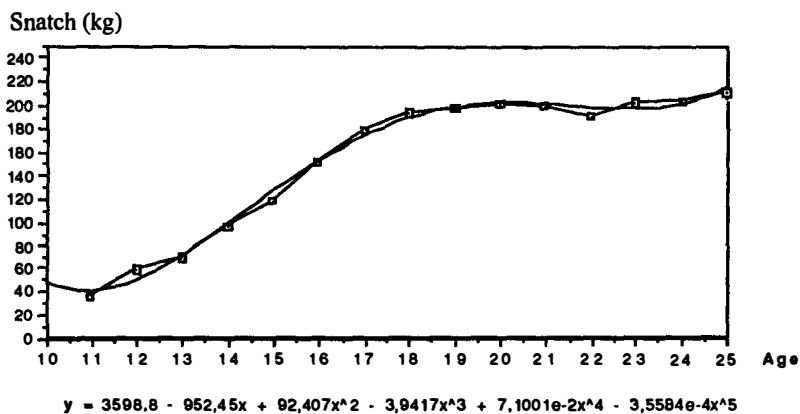


Figure 5 Evolution of the snatch, in kilograms.

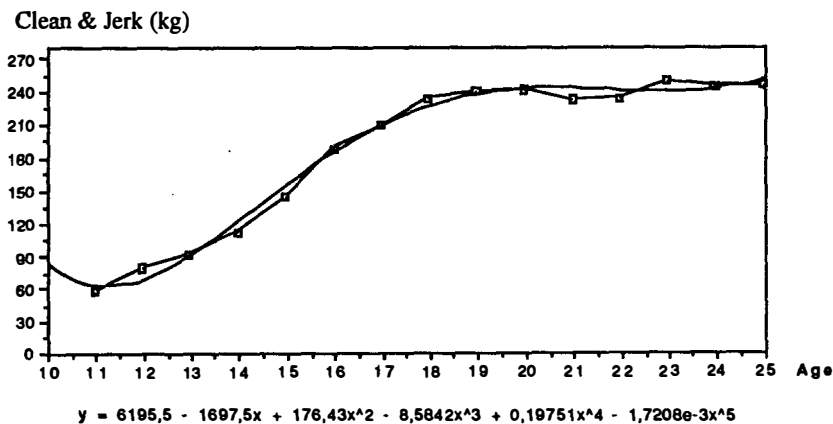


Figure 6 Evolution of the clean and jerk, in kilograms.

and years of training for Zackarevich, a former world record holder. We can arrive at an approximate prediction of future score by using the statistical formula shown in Figure 4.

Training Cycles. As in many sports, load planning is defined in yearly training cycles (4). The weightlifter's training must be planned according to the most important competition of each year (Olympics, national championship, etc.), above all taking into account the athlete's potential. The yearly cycle must be based on the dates of the competitions, training phases, and number of competitions in which the lifter is expected to reach his or her best score. Following each competition, a period of 1 to 2 weeks will be needed for recovery of all physical and physiological capabilities.

Macrocycles are training periods that include both general and specific preparation phases and a competition phase. Transitory periods between major competitions or at the end of the yearly plan are excluded. Since these macrocycles run from 6 to 16 weeks, world-class weightlifters can reach new goals three to four times a year while for beginners the frequency is eight or nine times a year. Table 1 shows the macrocycles that make up the yearly plan.

Exercise Grouping. The model presented here (Tables 2 and 3) is that of the national weightlifting team of the former Soviet Union. To reach their highest potential, Soviet weightlifters must also include supplemental exercises such as squats, power snatches, and power cleans. We combine different types of snatch and clean and jerk exercises in order to obtain the optimum results in the competitive lifts.

These types of exercises are classified into five groups (although some coaches put squats and pulls in one group):

1. Classic snatch; Power snatch; Classic snatches from different starting positions; Power snatches from different starting positions.
2. Classic clean; Power clean; Classic cleans from different starting positions; Power cleans from different starting positions.
3. Classic snatch pulls; Classic clean pulls; Classic snatch pulls from different starting positions; Classic clean

pulls from different starting positions; Bend-overs (good mornings with a barbell behind the neck).

4. Back squats; Front squats; Splits (lunges).
5. Classic jerk; Push-jerk; Push-press; Arm and shoulder exercises (press behind head, military press, etc.).

The first four groups emphasize overload in the lower body while the fifth group emphasizes overload in the upper body. To avoid overtraining, one should combine the first four groups with the last group. This training structure is based on just one group of exer-

cises per workout, as seen in the following example:

- Monday: 1st and 4th groups
- Tuesday: 5th group
- Wednesday: 2nd and 4th groups
- Thursday: 5th group
- Friday: 1st, 3rd, and 4th groups
- Saturday: 2nd and 5th groups

Alternating high intensity workouts with medium and low intensity workouts will help the weightlifter to recover properly and will prepare him or her for the next workout. According to this distribution, we plan and predict our intermediate goals.

Intermediate Goals. After the initial test, we can more accurately predict the intermediate goals per exercise and also the result of the final competition, although with slightly less certainty. In order to reach one's highest potential in weightlifting, intermediate goals should be carefully calculated in a predetermined percentage based on sets, repetitions, and maximum lifted

Table 1
Example of Macrocycle Planning

	Macro 1	Macro 2	Macro 3	Macro 4
Duration	10 wks	11 wks	12 wks	12 wks
Body weight (kg)	107	108	108.5	109
Snatch (kg)	195	200	195	210
Clean & jerk (kg)	235	240	245	250

Table 2
Example of Macrocycle Training (Macro 3)

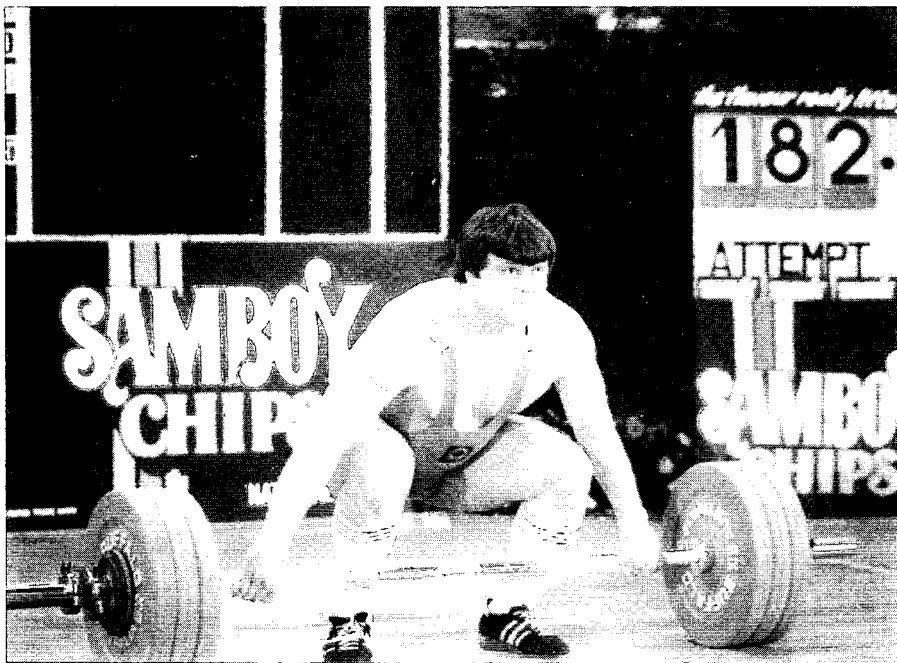
Periods & Phases (1-5)	Wks	Work-outs	Condit./trainings	Times a day	Sets	Reps	%	Hrs	Intensity	Volume
<i>Preparatory Period</i>										
1. Hypertrophy	2	9/wk	2/wk	1-2	5-6	2-6	70-75	2-3	low	mod
2. Transition to basic strength	2	9/wk	2/wk	1-2	6	2-6	75-80	2-3	mod	mod
3. Basic strength	3	15/wk	2/wk	2-3	5-6	2-4	80-90	2-3	mod-high	high-mod
<i>Precompetitive Period</i>										
4. Strength & power	4	15/wk	-	3-1	5-7	1-3	80-100	1-2	mod-high	mod-low
<i>Competitive Period</i>										
5. Peaking (maint.)	1	6/wk	-	1	4-6	1-3	70-80	1.5-2	mod-low	low

Table 3
Example of a Workout in Each Phase

	Workouts	Duration	No. of exerc.	Sets	Reps	%	Intensity	Volume
Hypertrophy phase, 1st week, Preparatory period. Intermediate goal: general conditioning								
Mon/Wed/Fri	2/day	3 hrs	4	5-6	2-6	70-75	low	mod-high
Tues	1+1/day ^a	3+2 hrs ^c	5	5-6	2-6	70	low	low-mod
Thurs/Sat	1/day	3 hrs	4-6	4-6	2-10	50-70	low	mod
Sun	1/day ^b	1 hr	-	-	-	-	low	high
From Hypertrophy to Basic strength, 3rd week, Preparatory period. Intermediate goal: work on his 80% most of the time								
Mon/Wed/Fri	2/day	2+3 hrs	4	5-6	3-6	75-80	mod	mod-high
Tues/Sat	1/day	3 hrs	5	6	2-6	80	mod	low
Thurs	1+1/day	3+2 hrs	4	5-8	6-10	50-80	mod	mod-high
Sun	1/day	1 hr	-	-	-	-	-	-
Basic strength phase, 6th week, Preparatory period. Intermediate goal: 6 sets/2 reps at 90% in specific exercises per workout except Mon & Sat								
Mon	3/day	1+2+2 hrs	2+3+3	6	1-4	80-85	mod	high
Tues	2/day	1+3 hrs	3+4	5-6	1-4	70-85	mod	mod
Wed	3/day	1+2+2 hrs	2+3+3	6	1-4	75-90	mod	high
Thurs	2/day	1+3 hrs	3+4	5-6	1-4	80-90	high	mod
Fri	3/day	1+2+2 hrs	2+3+3	6	1-4	80-90	high	high
Sat	2/day	1+3 hrs	3+4	5-6	1-4	80-90	high	mod
Strength and power phase^d, 8th-9th weeks, Precompetitive period. Intermediate goal: 7 sets/1 rep at 90% for Olympic-style and specific exercises on Mon, Wed, Fri, & Sun (8th week) and 1-3 sets/1 rep at 100% in snatch and clean & jerk (9th week)								
Mon	3/day	1+2+2 hrs	2+3+3	5-6	2-3	80-85	mod	high
Tues	1/day	1 hr	1	5	5	50	low	low
Wed	3/day	1+2+2 hrs	2+3+3	6-7	1-2	80-85	mod	high
Thurs	1/day	1 hr	1	5	5	50	low	low
Fri	3/day	1+2+2 hrs	2+3+3	6	1-2	90-100	high	high
Sat	1/day	1 hr	1	5	5	50	low	low
Sun	3/day	1+2+2 hrs	2+3+3	5-6	1-2	90-100	high	high
Peaking phase, 11th week, Competitive period. Intermediate goal: recovery & maintenance								
Mon	1/day	2 hrs	4	6	1-2	75-85	mod	low
Tues	1/day	2 hrs	4	5	3	80	mod	low
Wed	1/day	2 hrs	4	5	1-2	75-80	mod	low
Thurs	1/day	2 hrs	4	5	2	75-80	mod	low
Fri	1/day	1-1/2 hrs	3	4-5	2	70-75	low	low
Sat	1/day	1-1/2 hrs	3	4-5	2	70	low	low
Sun	Competition							

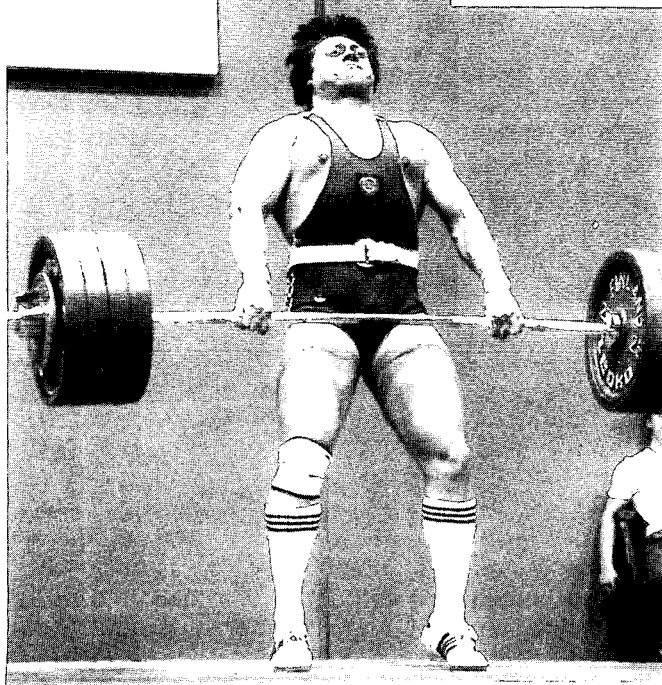
Key: ^a1 + 1 = 1 weightlifting training & 1 conditioning training. ^b1 conditioning training. ^c3 + 2 = 3 weightlifting training & 2 conditioning training. ^dThis training occurs on Tues, Thurs, & Sat; it enhances the lifter's recovery for next workout. Mon, Wed, & Fri are for snatch and clean & jerk.

Intermediate goals per week: **1st week:** general conditioning. **2nd week:** 6 sets/3 reps at 80% for specific exercises such as jerk, clean, push jerk. **3rd week:** work at his 80% in most sets this week. **4th week:** 6 sets/2-1 reps at 85-95% for specific exercises in each workout. **5th week:** 6 sets/4 reps at 70% in snatch and clean & jerk. **6th week:** 6 sets/2 reps at 90% for specific exercises per workout except Mon & Sat. **7th week:** 6 sets/1 rep at 95% in snatch and clean & jerk and specific exerc. Mon & Sat. **8th week:** 7 sets/1 rep at 90% in snatch and clean & jerk and specific exerc. Mon, Wed, Fri, & Sun. **9th week:** 1-3 sets/1 rep at 100% in snatch and clean & jerk. **10th week:** 5 sets/2 reps at 90% in snatch and clean & jerk. **11th week:** recovery and maintenance, and final goal in competition.



Yuri Zackarevich was the dominant force during the 1980s in the 100 and 110 kg classes on the international weightlifting platform. His success was the result of scientific and systematic training applied over a long period of time. (Top photo: U.S. Weightlifting Federation; bottom photo: Bruce Klemens)

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weight. Each intermediate goal will vary in terms of weight, number of repetitions, and number of sets. The intermediate goals must be fixed to the lifter's current possibilities with respect to sets, repetitions, duration of lift, and frequency of high percentages.

If a lifter cannot meet the intermediate goal, he or she will not be able to achieve the predicted final goal. Therefore the coach should modify the training to enable the lifter to reach the intermediate goal. When intermediate goals are adjusted individually, this allows lifters to monitor their progress and also serves to motivate them in the pursuit of their final goal. By meeting each intermediate goal, the weightlifter will gradually and safely reach his or her final goal.

Using the groups of exercises in Table 3 as an example, we can establish the goals of each weightlifting exercise between weeks and cycles of training. Each weightlifting exercise has its own process of improvement. This process might be evaluated in terms of the number of repetitions and amount of weight lifted.

Conclusions

This new methodology in planning a weightlifting program incorporates training concepts from the Russian weightlifting team over the past 10 years and will provide better results in weightlifting competitions when based on the following points:

- Strict monitoring of the weightlifter's possibilities in each training cycle;
- A system that provides motivation and enhances the weightlifter's chances of realizing his or her predicted final goal at the competition;

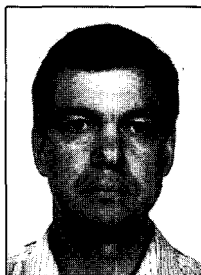
- Clear goals based on studies of the weightlifter's potential;
- A planning system that provides further knowledge about the process of personal training and the relationship between exercises, sets, and repetitions. ▲

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Vicente Ortiz Cervera is a weightlifting coach and PhD student at the Universitat de Valencia. He has taught strength training courses and published several articles on the topic of strength and power training, which is the focus of his doctoral dissertation.

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