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A STUDY OF THE TRAINING HABITS AND PRACTICES
EMPLOYED BY THE PARTICIPANTS AT THE
NATIONAL ASSOCIATION OF INTERCOLLEGIATE ATHLETICS
1964 CROSS COUNTRY CHAMPIONSHIPS
(TITLE)

BY

Robert K. Blume

PLAN B PAPER

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE MASTER OF SCIENCE IN EDUCATION
AND PREPARED IN COURSE

Physical Education 475

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY,
CHARLESTON, ILLINOIS

1965

YEAR

I HEREBY RECOMMEND THIS PLAN B PAPER BE ACCEPTED AS
FULFILLING THIS PART OF THE DEGREE, M.S. IN ED.

14 January 1966
DATE

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PREFACE

When the facts concerning various training methods are debated, certain aspects of each comes under the close scrutiny of professional coaches throughout the world. If and when conclusions are drawn, they immediately become involved in the complicated area of physiological, sociological, emotional, and psychological adjustments. Why does one coach use a certain method of training? How can the use of certain systems of training effect the runner? How can performance be judged in relation to training procedures?

To determine what the various coaches of the National Association of Intercollegiate Athletics were doing in the area of training their runners in the sport of cross country, the writer attempted to survey the field represented at the 1964 National Association of Intercollegiate Athletics Cross Country Championships which was held at Omaha, Nebraska. The method employed to secure information concerning training methods used on said runners was a broad survey.

The writer wishes to extend his sincere appreciation to Mr. A. O. Duer, Executive Director of the N.A.I.A., Mr. Tom Reno, Publicity Director of the N.A.I.A., and Mr. Eldon Fix, President of the N.A.I.A. Coaches Association, for allowing this project to be undertaken.

The writer would also like to extend his appreciation to the coaches of the member schools of the National Association of Intercollegiate

Athletics for their sincere assistance in supplying the material for this study.

Special appreciation is extended to the writer's advisor, Dr. Maynard O'Brien, for his continued guidance throughout this entire study of this problem.

CHAPTER I

INTRODUCTION

The activity of running over a specific distance has been a part of man since the beginning of the human race. Early in history men ran to deliver messages or important articles to rulers in other lands. Some were used as a warning system as they ran from village to village shouting the news of invading enemies, and last but not least, men ran for pleasure and for competition.

Although the type of running employed today is not to carry warnings or messages, men are still running for pleasure and competition. Today, man competes against himself, he competes to establish personal records or reach personal goals, and he runs to obtain national or world records. Roger Banister states his feelings about running in his book, "The Four Minute Mile".

For nearly ten years I have been running many times a week and my grasp of the reasons why I run continues to grow. Running through mud and rain is never boring. Like 10,000 cross-country runners, their number ever increasing, I find in running - win or lose - a deep satisfaction that I cannot express in any other way. However strenuous our work, sport brings more pleasure than some easier relaxation. It brings joy, freedom, and challenge which cannot be found elsewhere... I sometimes think, that running has given me a glimpse of the greatest freedom man can know: the simultaneous liberation of both body and mind.¹

¹Roger Bannister, The Four Minute Mile (New York: Dodd, Mead & Co., 1955; London: Curtis Brown, Ltd., 1955), p. 13.

In another way Brutus Hamilton, head coach of the University of California, relates this same message in still another way.

People may wonder why young men like to run distance races. What fun is it? Why all that hard, exhausting work? Where does it get you? Where's the good of it? It is one of the strange ironies of this strange life that those who work the hardest, who subject themselves to the strictest discipling, who give up certain pleasurable things in order to achieve a goal, are the happiest men. When you see 20 or 30 men line up for a distance race in some meet, don't pity them. Don't feel sorry for them. Better envy them instead. You are probably looking at the 20 or 30 best "bon vivants" in the world. They are completely and joyously happy in their simple tastes, their strong and well-conditioned bodies, and with the thrill of wholesome competition before them. These are the days of their youth, when they can run without weariness; these are their buoyant golden days, and they are running because they love it. Their lives are fuller because of this competition and their memories will be far richer. That's why men love to run. That's why men do run. There is something clean and noble about it.¹

Running, in itself, may not enable the individual to ever reach the goals he has set for himself. Each person who begins to develop his running abilities, does so according to some plan or some ritual. It is for this reason that the following study was prepared, to investigate the various plans or rituals that runners are using to reach their goals. Many times it is possible to look at other methods and find something that will aid in the development of future runners, this then, is the goal of the study.

¹Brutus Hamilton, "Why Men Like to Run," Coaching Newsletter (London), II, No. 5 (July, 1957), p. 7.

Statement of the Problem

The purpose of the study is to examine and evaluate the various training methods that are being employed by the coaches represented at the National Association of Intercollegiate Athletics Cross Country Championships, which was held at Omaha, Nebraska on November 20, 1964.

Procedures

In an attempt to actually determine the various training methods employed by the coaches, a questionnaire was constructed with the assistance of Dr. Maynard O'Brien of the Division of Physical Education for Men.

The basic objective of this survey was to determine the general methods that are being employed in the training of cross country runners who are competing at the national level. The national meet surveyed was the National Association of Intercollegiate Athletics Cross Country Championships.

The survey was presented to the coaches attending this championship meet. It was recommended by the writer that the coaches fill out one questionnaire for each member of his squad that was present for this meet.

Definitions

Due to some confusing terms that are pertinent to track and cross country, the writer will submit definitions which will clarify the terms used. Circuit training: Klafs and Arnheim define circuit training in the following manner:

Circuit training is a method of physical conditioning that employs both weight training and conditioning exercises. In some forms, apparatus stunts have been added as a third kind of activity. Circuit training is based on the premise that the athlete must do the same amount of work in a shorter period of time or must do considerably more work within the limits of an assigned training period. The circuit is usually set up around the perimeter of the exercise area. When a circuit is set-up, the number and types of stations desired should be selected for their value in stressing development of the body parts most commonly called into play in a particular athletic activity.¹

It is possible for different coaches to shuffle the exercises to fit their own situation and physical facilities. Circuit training is based on the idea of variety or movement from one activity to another within a designated amount of time.

Fartlek training

The Fartlek system of training was developed by Gosta Holmer of Sweden, and his system has been called a form of "speed-play". Franz Stampfl expresses his opinion of Fartlek in these terms:

Fartlek is a Swedish method of training based on running long distances at free, untimed, variation of pace, the literal meaning of Fartlek being "speed-play". It is best used over undulating country that encourages a natural change of pace, up and down hills, interspersed

¹ Carl E. Klafs and Danial D. Arnheim, Modern Principles of Athletic Training (St. Louis, Mo.: C. V. Mosby Co., 1963), p. 108.

with long, flat stretches. It is most effective when the pace is varied frequently from short, sharp sprints to long easy jog-trots, with occasional fast quarter-miles and sustained efforts over distances ranging from half a mile to a mile.¹

Interval training

According to Dr. J. Kenneth Doherty, interval training is:

"...a system of repeated efforts in which a distance of measured length is run on a track at a timed pace alternately with measured recovery periods of low activity."²

Isometric exercise

Klafs and Arnheim state that "...isometric exercise pertains to a contraction wherein tension of the muscle is altered and heat is produced, but the muscle does not shorten."³

Weight training

The most appropriate definition of weight training is that given by Klafs and Arnheim:

...there is a distinct difference between weight lifting, a sport, and weight training, a system in which series of progressive resistance exercises are used to attain speed, strength, and endurance. If properly carried out, weight training will contribute to the general physical well-being of the athlete as well as improve his speed, "explosive power," strength, and endurance.⁴

¹Franz Stampfl, Stampfl on Running (London: Herbert Jenkins Ltd, 1955), p. 45,46.

²Dr. J. Kenneth Doherty, Modern Training for Running (Englewood Cliffs, N. J.: Prentice-Hall Inc., 1964), p. 87.

³Klafs and Arnheim, p. 461.

⁴Klafs and Arnheim, p. 93.

Limitations and Delimitations of the Problem

In reviewing the limitations and delimitations, it may be noted that the writer has embarked upon a new area of consideration for those connected with the N.A.I.A. The writer realizes that by this one survey obvious weaknesses may appear or that certain items may tend to lean strongly in one direction, but certain patterns did develop, and it is hoped that these patterns will aid future coaches and participants.

Limitations

- (1) The study could not properly determine the effects of geographic variables on the training of cross country runners.
- (2) Additional answers should be obtained before a conclusion can be reached concerning the value of certain training methods on cross country runners.
- (3) Problems seem to arise in the administration of various training methods due to the coaches variance in application and definition of terminology.
- (4) No provision for follow-up has been attempted.

Delimitations

The delimitations of the study include the following:

- (1) The study was involved with certain training procedures followed by cross country runners in the non-competitive season.
- (2) The study surveyed the method of training used in year-round programs, and compared these methods with the individual's place in the meet.

(3) The study compared the individual's place of finish with his grade in school, (freshman, sophomore, junior, and senior).

CHAPTER II

INTERPRETATION OF DATA

The interpretation of the data is studied in the following manner: first, by comparing the "yes" and "no" answers in order to find a definite pattern; secondly, by comparing those runners who trained year round with their place of finish; and thirdly, by comparing the athletes year in school with his place finish in the meet. The purpose of these comparisons was to attempt to find the trends of training for cross country runners that was used by the individual coaches of the N.A.I.A.

(1) Does this athlete train year round?

In surveying the 114 answers to the question of year round training, it was found that 60 (52.6%) of the participating runners did participate in year round training. On the other hand, 54 (47.4%) of the participating runners did not engage in year round training.

(2) Does this athlete participate in other sports?

Forty-two and one tenths per cent of the athletes did not participate in any other sport than cross country. Fifty-seven and nine tenths per cent of the athletes did participate in other sports. The breakdown was as follows: basketball, 7; baseball, 1; track, 56; football, 1; and swimming, 3.

(3) Does this athlete use weight training in the non-competitive season?

Sixty-seven and five tenths percent of the participants did not use weight training as a method of conditioning during the non-competitive season. There were thirty-seven, or 32.5%, of those answering this question that stated that they did train by the use of weights in the non-competitive season.

(4) Does this athlete use weight training during the competitive season?

As a follow-up to the previous question, 92.9% of the runners did not participate in a weight training program during the competitive season as a part of their training.

(5) Does this athlete use isometric work during the non-competitive season?

The question concerning the use of isometric training produced the following results. Those who used this form of training numbered twenty-seven or 23.7%, and those who did not use isometric exercise during the non-competitive season numbered eighty-seven or 76.3%.

(6) Does this athlete use isometric work during the competitive season?

The follow-up question to number five shows that twenty individuals used isometric work during the competitive season, which was 17.54% of the total number of answers. The remaining 82.46% did not use isometric exercises during the competitive season.

(7) Does this athlete use a combination of both isometric and weight training during the non-competitive season?

One hundred and two of the one hundred and fourteen did not use a

combination of isometric and weight training. This was 89.5% of the total amount of responses. Twelve men did use a combination of the two forms of training for 10.5% of the total.

(8) Does this athlete use a combination of both isometric work and weight training during the competitive season?

Ninety-eight and eight tenths of the runners did not favor the use of combined program of isometric work and weight training. Only two answered this question with a "yes" answer (1.2%).

(9) Does this athlete train by interval training methods?

Ninety-nine and seven tenths per cent of the participants used interval training as a method of training for cross country. Only one person stated that he did not use this form of training.

(10) Does this athlete train by the Fartlek system?

The Swedish method of Fartlek training was also being used by a large majority of the N.A.I.A. participants. Eighty-five per cent did use this form of training and only 15% did not use this type of training.

(11) Does this athlete train by circuit training methods?

The use of circuit training was employed by 35.8% of the runners, while 64.2% did not follow this method of training for cross country.

(12) Does this athlete train by a combination of questions 9, 10, and 11? If so, what combinations?

There seems to be a definite system to training distance runners. It may be very valuable to see what combinations of training was being used in the N.A.I.A. The combination that received the majority of support was the combination of interval training and Fartlek training. The results showed that 66% of the runners combined these two systems. Twenty-seven and 31% noted that they used a combination of interval training, Fartlek training, and circuit training,

while preparing for the season. Only .01% stated that they used a training system that combined Fartlek training and circuit training. Two answered that they did not use any of the mentioned combinations (.02%).

(13) Is the diet of this athlete controlled by a training table during the competitive season?

Food intake or diet of an individual may fluctuate with various climates, temperatures, and geographic locations, therefore, it was felt that the diet phase of training should not be overlooked. It was found that 92.9% of the participants did not use a special training table during their season of competition. Seven and one tenth per cent of the runners did have the opportunity to use the training table for their meals.

(14) Do you, the coach, prescribe this athlete's diet?

The major segment of the runners did not have the training table available, nevertheless; the possibility of the coach prescribing the diet for the runner was still present. Eighty-four and two tenths per cent of the runners were not instructed concerning diet by the coach. Fifteen and eight tenths per cent of the participants had specific instructions from their coach concerning the diet.

(15) During what time of the year is the pre-competitive training program started?

The most popular months for beginning the early phases of training was between July and August. During this period, 51% of the runners

started their training. During the September to November section, 28.9% began training, and between December and February 6.7% started. The month of June also had 6.7% of the runners beginning their training sessions. Various climates or facilities may have some bearing upon the time when the runners can begin strict training in preparation for the coming season.

Comparison of Place and Year Round Training

The second comparison and interpretation which the writer considered was that dealing with year round training. The emphasis seemingly placed on year round training may be important, but, it must also be realized that cross country may be the beginning for many runners who are preparing for the spring track season. The question which dealt with this problem was asked in the following manner: "Does this athlete train year round?"

Sixty-nine of the one hundred and fourteen answers indicated that they did train year round. Consequently, this means that 49%, or nearly one-half of the total one hundred and forty runners, are performing some form of training which throughout the entire year.

Nine states are represented in the year round training group. Nebraska seemingly places more emphasis on year round training, as 18 of the 67 runners are from that state. Table 1, which is located on the following page, will provide a complete breakdown by states.

Figure 1

State	No. of year round trainers	Top 50%	Top 25%
California	1	1	1
Illinois	10	3	1
Indiana	7	3	0
Kansas	11	10	6
Michigan	6	2	0
Nebraska	18	3	0
Texas	6	6	5
Washington	<u>7</u>	<u>5</u>	<u>5</u>
Totals	67	34	19

Thirty-four, or one-half of those that trained year round, placed in the upper 50%, of the top 70 runners of competition. It is interesting to note that Nebraska, who had the largest number of year round trainers, placed only three of their eighteen men in the top 50% of competition.

Results showed that more than 50% of those that did train year round placed in the upper 25%, top 35 places, of competition. There may be an indication that the year round program does have some benefit and that possibly more runners should be participating in this form of training.

Comparison of the Individual's Year in School with His Place in the Competition

The final comparison relates the individual's rank in school and

and his place finish in this national event. The material for this comparison was obtained from the entry blanks submitted, and from the official finish list. The idea that prevails, indicates that freshmen are overlooked or thought to be too immature to qualify for this type of national competition. Although this may have validity, the freshmen have represented themselves quite well in this meet. It must be noted that in the total number of runners, the freshmen had more than any other class participating.

There were a total of one hundred and forty runners that started and finished the meet. The number included 30 seniors; 33 juniors; 38 sophomores; and 39 freshmen. The results show that those that placed in the upper 25% (top 35 places) of the competition included; 10 seniors, 13 juniors, 6 sophomores, and 6 freshmen. Transposing these numbers into percentages, the figures developed as follows: 30.3% of those seniors competing finished in the upper 25%; 39.3% of the juniors placed in the upper 25%; 14.6% of the sophomores captured places in the top 25%; and 15.8% of the freshmen placed in the upper 25% of the competition.

The second phase of the section compared the runners that placed in the top 50%, or in the top 70 finish positions. The results show that the seniors placed 19 men in the top 50%, or 63% of the total senior group. The juniors also placed 19 men in the upper 50% of competitors, or 57.5% of their total. The sophomores placed 17 in the upper 50% which was 45% of their total group of competitors. The freshmen were close behind in placing 15 in the upper 50% for 33% of their representation.

The third and final phase of this comparison was concerned with the percentage of runners that placed in the lower 50% of the field. Results show that only 11 seniors placed in this section for 33.3% of their total. The juniors had their second highest area of concentration showing 14 in the lower 50% for 42.4%. Twenty-one sophomores finished in the lower 50% which is 55.3% of their field of 38. The freshmen showed that their group provided 24 of the lower 70 runners or of their total number of entries.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

The object of the study was to evaluate the type of cross country training, both non-competitive and competitive season, that was being employed by the coaches that competed in the national cross-country meet of the National Association of Intercollegiate Athletics.

A questionnaire was developed for the purpose of obtaining information to evaluate different training methods. Through this form of survey, which was presented to the coaches who had men participating in this national cross country meet, the writer acquired a major portion of the material presented. Through this study some important conclusions might be drawn which should be beneficial to all who are interested in improving and broadening their present training programs.

Conclusions

(1) Although the writer realizes that a study of this type may not be extensive enough to state definite conclusions, it was felt that enough of a sampling was obtained to derive a few basic generalizations on the training programs of cross country runners.

(2) In comparing those individuals that trained year round with those that did not perform year round training, it was found that 58.7% of those reporting did use year round training. Therefore, the writer

feels that year round training has been shown to have definite value and possibly should be employed on a wider basis if more top flight runners are going to be produced.

(3) Probably the most overwhelming result from this study was evidenced in the area of interval training for the long distance runner. Since 99.2% of the participants do incorporate this method into their training program, it can be concluded that this has been one of the more popular forms of training used in modern cross country techniques.

(4) There may be some obvious patterns which seems to relate to information concerning the individuals place with his grade in school. Of the sixty-three upperclassmen (junior, seniors) that competed, 69.3% placed in the upper 50% of the competition. On the other hand, the underclassmen placed only thirty-two men or 41.5% of their total number in the upper 50%. Physical development, maturity, and racing knowledge obviously plays a part in this spacing of runners, but this may not be an ample substitute for the desire for achievement and experience gained by the underclassmen. These individuals must gain experience early in their careers if they are to follow the present champions and become the champions of the future.

Therefore, the writer feels that although the upperclassmen placed higher in the competition percentage-wise, the underclassmen performed well enough to continue to be given the privilege to run in the event. It must also be brought out that the underclassmen had seventeen more participants than their peers, the upperclassmen.

Recommendations

Since this survey has not been attempted previously, the writer has to make his recommendations toward basic generalities. The following recommendations should be considered by the N.A.I.A. for follow-up study involving their represented runners.

(1) It is recommended that a further study, concerned with training procedures of cross country runners, be employed at future N.A.I.A. championship meets.

(2) It is recommended that future comparisons be made on the finish place of the individual runner and his grade in school.

(3) It is recommended that future study include a comparison of the finish times of runners participating each year.

(4) It is recommended that additional studies should be undertaken with emphasis on the dietary habits of the participants.

(5) It is recommended that more study be given to the various effects of weight training and isometric exercise on the strength and endurance of the runner.

APPENDIX A

RESULTS OF ANSWERS GIVEN
(Total of 114 out of 140 runners)

ITEM	YES	NO
1. Does this athlete train year round?	60	54
2. Does this athlete participate in other sports? If yes, please check the appropriate sport.		48
Basketball	7	
Baseball	1	
Football	0	
Soccer	0	
Track	56	
Swimming	3	
Wrestling	0	
3. Does this athlete use weight training in the non-competitive season?	37	77
4. Does this athlete use weight training during the competitive season?	8	106
5. Does this athlete use isometric work during the non-competitive season?	27	87
6. Does this athlete use isometric work during the competitive season?	20	94
7. Does this athlete use a combination of both isometric and weight training during the non-competitive season?	12	102
8. Does this athlete use a combination of both isometric and weight training during the competitive season?	2	112
9. Does this athlete train by interval training methods?	113	1
10. Does this athlete train by the Fartlek system?	97	17

ITEM	YES	NO
11. Does this athlete train by circuit training methods?	41	73
12. Does this athlete train by a combination of questions 9, 10, and 11? If so, what combinations?		2
9-10	66	
9,10,11	31	
9,11	1	
13. Is the diet of this athlete controlled by a training table during the competitive season?	8	106
14. Do you, the coach, prescribe this athlete's diet?	18	96
15. During what time of the year is the pre-competitive training program started?		
June	7	
July-Aug.	53	
Sept.-Nov.	30	
Dec.-Feb.	7	
Year round	7	

APPENDIX B

CROSS COUNTRY QUESTIONNAIRE

Athlete's Name _____ Age _____

School _____ Year in School _____

Athlete's best recorded time and distance _____

The course was: Hills _____ Flat _____ Combination _____

INTRODUCTION

This questionnaire is concerned with the basic training procedures used by the cross country runners represented at the 1964 National N.A.I.A. Championships. The questions are of a general nature because of the variations which coaches employ.

Before beginning the questionnaire, it is felt that two terms should be defined for the benefit of the coach. The first is isometric exercise. Isometric takes place when a muscle is held in partial or complete contraction against an external force or against a muscle working in the opposite direction with an equal force.

The second term is weight training. Weight training is designed to provide exercises of graded intensity, designed to develop muscular strength, and to meet the requirements of the individual.

INSTRUCTIONS

Please circle the answer that best pertains to the athlete in question. If you desire to add information concerning the question, please feel free to do so.

- 1. Does this athlete train year round? Yes No
- 2. Does this athlete participate in other sports? Yes No
 If yes, please check the appropriate sport.
 _____ Basketball _____ Swimming
 _____ Baseball _____ Wrestling
 _____ Football _____ Cross Country
 _____ Soccer
 _____ Other _____
- 3. Does this athlete use weight training in the non-competitive season? Yes No
- 4. Does this athlete use weight training during the competitive season? Yes No
- 5. Does this athlete use isometric work during the non-competitive season? Yes No

- | | | | |
|-----|--|-----|----|
| 6. | Does this athlete use isometric work during the competitive season? | Yes | No |
| 7. | Does this athlete use a combination of both isometric and weight training during the non-competitive season? | Yes | No |
| 8. | Does this athlete use a combination of both isometric and weight training during the competitive season? | Yes | No |
| 9. | Does this athlete train by interval training methods? | Yes | No |
| 10. | Does this athlete train by the Fartlek system? | Yes | No |
| 11. | Does this athlete train by circuit training methods? | Yes | No |
| 12. | Does this athlete train by a combination of questions 9, 10, and 11? If so, what combinations? | Yes | No |
| 13. | Is the diet of this athlete controlled by a training table during the competitive season? | Yes | No |
| 14. | Do you, the coach, prescribe this athlete's diet? | Yes | No |
| 15. | During what time of the year is the pre-competitive training program started? | | |

July-Aug. Sept.-Nov. Dec.-Feb. March

Coach's Signature

School

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