# The Iowa Program of Physical Education For Boys

Secondary Schools

A MANUAL FOR TEACHERS

(Tentative Edition)

*Issued by the*
DEPARTMENT OF PUBLIC INSTRUCTION
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DES MOINES, IOWA

*Published by*
THE STATE OF IOWA
1945

## FOREWORD

Physical education in Iowa high schools was given impetus by the nation's war need for conditioned youth. Schools for the most part accepted the challenge of war needs by setting up programs of physical training designed to condition youth for the rigors of war service. Manuals suggesting proper war-time programs were issued by the Department of Public Instruction. Demonstration centers were provided throughout the state so that administrators and instructors could acquaint themselves with the recommended program.

The diminishing demand for men and women for the armed forces should not lessen the emphasis given to physical education. Health and fitness are just as important in times of peace as in war time, and officials and teachers responsible for the administration of physical education programs should not permit the excellent progress of the war period to lapse.

This manual is an outgrowth of a movement to strengthen the forward movement. Much credit for the inception of the physical education program in Iowa schools, of which this manual is the culmination, is due to Roscoe O. Abbett, president of the Iowa Association for Health, Physical Education, and Recreation in 1941-1942.

Acknowledgment is also made of the large part played in the production of the manual by Mr. A. J. Steffey, formerly of the Department of Public Instruction, who served as chairman of the executive committee during the 1943-1944 school year. The excellent coöperation of Dr. C. H. McCloy and Dr. Norma D. Young of the University of Iowa in editing the manual is greatly appreciated. Thanks are also extended to all committee members who through consultation and contributions made the manual possible.

This present edition is in tentative form. After the manual has been in use for some time, teachers, supervisors, and administrators will be asked to offer suggestions for its improvement. A revision of the manual will then be made in the light of the suggestions received.

JESSIE M. PARKER,

Superintendent of Public Instruction.

November, 1945.

## INTRODUCTION

The purpose of this book is to provide comprehensive material to aid the teacher in the organization of his program. Detailed outlines of daily or weekly programs are not presented because of the great differences of the Iowa high schools in size and in adequacy of equipment.

Part I, which concerns the organization and administration of the program, has been designed for inexperienced teachers and for teachers with inadequate training. These chapters outline briefly the essentials of the aims and objectives of the program, the general administrative procedures relating to the conduct of the program, and information on how to organize the program and on methods of teaching.

Part II contains material relating to training activities which are primarily concerned with physical conditioning.

Part III contains material on activities—combatives, gymnastics, tumbling, stunts, games, track and field athletics, and swimming—which are especially adapted for the educational part of the physical education program. Standard interscholastic games, such as basketball, baseball, and tennis, are omitted, for they are well known, and every school may readily secure a copy of the latest rules.

Part IV contains material on posture training and on corrective and special purpose exercises, together with suggestions for games programs for the physically handicapped.

Parts V and VI contain material on the testing programs for measuring progress toward the objectives, and on the physical education and recreation programs for communities and homes.

Part VII contains material on the health examination and on the mental health program. These programs should be very closely integrated with the physical education program, and for that reason are included in this volume. The chapter on the mental health program is useful to all teachers and should be called to their attention.

## TWO IMPORTANT PRINCIPLES

The intelligent teacher does not concentrate on only one major goal, but attempts to achieve a number of important goals. One of these goals will be to build up the physical fitness of the boys. In seeking to develop a high standard of physical fitness, the teacher should keep two important principles in mind.

1. The dosage of exercise should be heavy enough to challenge the physical powers of the boy; that is, the exercise should be strenuous enough to demand more strength and endurance than the usual daily tasks of the boys demand. As the boys adapt to this demand, the load is increased gradually, always being kept strenuous enough to lead them to better and better condition until the level thought to be desirable is reached. No serious attempts should be

made to carry the boys beyond this level, although no serious attempts should be made to keep the ambitious ones from training to a reasonably high level. This principle is usually spoken of as the "overload principle," which does not imply that the boys are overloaded, but that the load is *over that usually carried from day to day.* The boy will not improve if he engages in only gentle exercise.

2. The dosage should be very gradually increased so that the boys will not be overtaxed at any time. This will mean attention to and adaptation to individual needs and limitations. These principles apply not only to the "conditioning" activities of Part II, but to the gymnastic and athletic activities of Part III as well.

To use this book to the best advantage for the improvement of physical abilities and skills, the teacher should include in the program of each day (1) one or two activities from the training group (Chapters 8 to 13), stressing some overload for (a) strength, (b) muscular endurance, and (c) circulo-respiratory endurance or "wind"; and (2) one or more activities from the combatives-gymnastics-games-athletics-swimming groups (Chapters 14 to 23). Some effort should also be directed to the improvement of posture and body mechanics, with extra attention being given to the boys most needing such activities (Chapters 24 and 25). In addition to the usual instructional and "laboratory periods" of physical education classes, much attention should be given to the organization of intramural activities, formal and informal, and to the organization—in coöperation with the instructor of physical education for girls—of the noon-hour, recess, and after-school athletics and of the co-recreational programs.

## THE HOME AND COMMUNITY PROGRAM

Finally, the public schools should begin to give much more attention to home and community exercise and recreation programs than they are now giving. To this end, the suggestions of Chapter 27 should be carefully studied. The time is past when a school system can call itself adequate when it attends to the educational needs of only 20 per cent of the population.

The details of the organization and the conduct of the program are in the hands of the instructors of physical education in the schools—in line with the policies laid down by the administrators of those schools. It is hoped that the experience gained in the first two years after the publication of this volume will enable the State Department of Public Instruction to revise this book in accordance with the needs of the schools, homes, and communities of Iowa.

CONTENTS

PART I

# ORGANIZATION AND ADMINISTRATION

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## CHAPTER 1

## AIMS AND OBJECTIVES

A discussion of the educational aspects of any school subject must concern itself with two topics: first, the relationship of the subject to general education; and, second, the objectives of that subject relative to their educational values. If the subject is an integral part of general education and if its contributions are sufficiently important, the subject must be recognized as essential and warrant full consideration by public school administrators.

Physical education is a valuable part of general education, and it can contribute significantly to the development of the citizens of tomorrow. However, the scope of this book does not permit a lengthy discussion, and therefore a short presentation of these topics must suffice.

RELATIONSHIP OF PHYSICAL EDUCATION TO GENERAL EDUCATION.—Education has been defined as the process of bringing about changes in behavior through participation in mental, social, and physical activities. Adequate attention must be given to these three types of activity if an individual is to develop into a mature adult. What constitutes adequate attention is difficult to determine, but it is recognized that the traditional emphases have been far too one sided.

The teaching procedure of a generation ago stressed mental development and discouraged social and physical activity in the school program. Recent changes in teaching procedures tend to increase the social aspect. Physical education, if sufficient time is allotted to it, can make a contribution to the procedures necessary for the maturation of young people into valuable members of society. The part played by physical education in the program is illustrated in the following diagram:

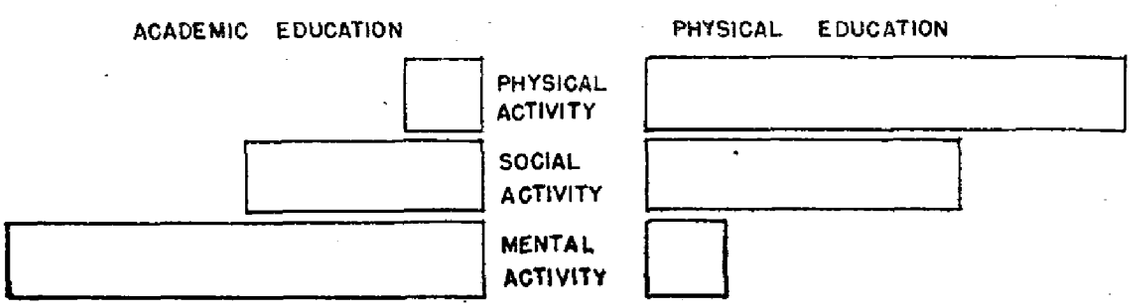



Fig. 1

Academic school subjects offer some social activity, but little or no opportunity for physical activity since they require, predominantly, mental activity. Physical education presents the counterpart to this picture with some mental activity, considerable social activity, and a predominance of physical activity.

The two pictures when fitted together furnish a composite picture which is undoubtedly a pattern which will provide an educational system in harmony with the ideals and desires of educational administrators.

OBJECTIVES OF PHYSICAL EDUCATION.—The goals of education are commonly thought of in terms of the "seven cardinal principles of secondary education," as set forth by the National Education Association. All school subjects should be evaluated from the point of view of their contributions toward the attainment of progress in these principles. Only a very few subjects can justly claim a major role in more than a few goals. Physical education, on the other hand, can contribute more to the sum total of these goals than can any other school subject. The nature of physical education and the fact that it is offered on the level at which most boys live are the reasons for its high value.

HEALTH is the first of the cardinal principles. Vigorous big muscle activity is essential to the development of muscular strength and of the maximum efficiency of the vital organs of the body as well as of the mental health of the boys.

ETHICAL CHARACTER, GOOD CITIZENSHIP, AND WORTHY HOME MEMBERSHIP are three cardinal principles for which physical education furnishes laboratory experiences. Actual practice in developing qualities such as honesty, obedience to authority, coöperation, and leadership makes physical education an effective tool for building ethical character, which in turn generates good citizenship and worthy home membership.

VOCATIONAL PREPARATION is indirectly promoted by physical education. The individual who is strong and healthy, who possesses ethical character traits in abundance, and who can participate in numerous social activities without undue fatigue is well fitted for a lifetime of economic independence.

THE WORTHY USE OF LEISURE is a sixth cardinal principle. There is no question about the place of sports in the lives of the vast majority of persons. Most persons enjoy physical activity, and those who do not are usually persons who have had little or no training in the so-called carry-over sports. People enjoy doing the things which they can do well, and physical education, by teaching the sport skills usable throughout the individual's lifetime, promotes a worthy use of leisure.

## CHAPTER 2

## ADMINISTRATION

The proper functioning of any program depends upon adherence to administrative policies and practices which have been adjudged to be sound. Many factors make standardizing administrative procedures for a state-wide program inadvisable since most communities have peculiarities not common to the State of Iowa as a whole. The lack of facilities is perhaps the most common reason for the omission of certain activities from the program. Hence to insist that certain activities should be a part of the program in all schools might make it difficult, if not impossible, for many schools to conform.

In view of the above discussion it seems logical in a book designed for a state-wide program to limit the topic of administration to those phases of the program which can be followed by the largest percentage of the schools. Hence this chapter is not intended to be a comprehensive guide to administrative procedures in physical education. It has, by design, been limited to a discussion of those items of administration which have general application and which will be most helpful to school principals and inexperienced teachers of physical education.

ADMINISTRATIVE OBJECTIVE.—The first duty of every school principal and of every teacher of physical education is to study the administrative objectives of physical education with the idea in mind of attempting to comply with as many accepted points as possible. This duty was recognized by the leaders in the profession when in 1931 a special committee of the American Association for Health, Physical Education, and Recreation drew up the following objectives, calling them the "Ten Cardinal Points in the Platform of Health and Physical Education":

### TEN CARDINAL POINTS IN THE PLATFORM OF HEALTH AND PHYSICAL EDUCATION

1. An adequate health examination and a comprehensive protection program for every school child, to include control of communicable diseases, healthful school environment, and hygienic standards in the entire curricular and extra-curricular life of the school.
2. Adequate indoor and outdoor facilities in every school and adequate time in the curriculum.
3. Coördination of community effort in policies, finances, and use of facilities for programs of health, physical education, and recreation.
4. Health and physical education instruction, based upon scientific materials progressively arranged throughout the grades and upper schools, and directed toward personal accomplishment and social ideals.
5. Establishment of procedures for the scientific classification, grading and promotion of individuals to insure the best educative results.
6. Professionally trained and accredited supervisors and teachers for all branches of the health and physical education program, including the coaching of athletic teams.
7. Promotion of the idea of play and recreation as aspects of the finest living.
8. The accreditment of health and physical education in all schools and colleges for graduation and the acceptance of such credits from high school for college entrance.
9. The organization and administration of health and physical education in

schools as a single, executive department, closely integrated and thoroughly coördinated with the general purposes of education.

10. Extension of the desirable and practical measures for the promotion of health and physical education among boys and girls in schools to all members of the community, as the broader implications of education are recognized.

The teacher of physical education should give special attention to the fourth, fifth, seventh, and tenth items since it is his duty to organize and plan the program. The remaining points deserve careful consideration by the administrator of the school system since it is his responsibility to foster health and physical education for the betterment of his community.

ADMINISTRATIVE POLICIES.—Policies may be defined as guiding principles to be followed in the administration of the program. Policies should be formulated in advance so that when difficult situations arise no time is lost in arriving at a decision. Policies provide a common understanding between teachers and students and help to avoid embarrassing conflicts. It is, of course, impossible to prepare a complete statement of policies in advance, but it is generally conceded that some of the more common situations can be covered and the unusual ones handled as they arise. The following policies are commonly accepted:

1. Policies Relating to the Institution

a. Membership in the Iowa High School Athletic Association is recommended. This organization has no authority over local school affairs, but it raises the general standards of interscholastic athletics through its influence in connection with selecting officials, handling protests, ruling on migrant athletes, and in many other ways.

b. The final control of athletics should be vested in the Board of Education.

2. Policies Relating to the Coaching and Teaching Staff

a. Coaches of teams representing the institution in interscholastic competition must be members of the school faculty.

b. Instructors of physical education classes must at least have teaching minors in physical education. The requirements for the Iowa Standard Secondary Certificate state that to qualify for additional teaching fields the teacher must present a minimum of ten semester hours in each of those fields.

c. Coaches and physical education instructors should be members of the American Association for Health, Physical Education, and Recreation and of the Iowa Association for Health, Physical Education, and Recreation. Membership in the national association will be particularly valuable to teachers with only a teaching minor in physical education, for the publications of the national association, which are sent to all members, contain a wealth of information on the aspects of physical education which will add to teaching efficiency.

3. Policies Relating to the Departments

a. The responsibility for all health education and physical education activities, including coaching, should be centered in one person if a faculty member trained for such a position is available.

b. An accurate budget should be kept for a proper apportioning of available funds and to assist in keeping expenditures within the income.

c. The public should be informed as to the values of physical education and specifically as to what is being accomplished in the program. Newspaper articles, and talks to the P.T.A.'s and local service clubs may accomplish this purpose.

d. An intramural program guaranteeing intensive competition for the whole student body should be carried on. A variety of activities to satisfy the desires and interests of every student should be included (see Chapter 5 on Intramural Athletics).

e. High standards of sanitation and of order should be maintained in the gymnasium, locker rooms, showers, and offices. Rules and regulations should be strictly enforced, and the coöperation of a conscientious janitor solicited.

f. Accurate records of attendance, excuses, and injuries should be kept. Many schools have special forms for this purpose, but a filing system is all that is needed.

4. Policies Relating to the Program

a. Adequate time allotment should be provided. The Iowa Association for Health, Physical Education, and Recreation recommends one class period daily. If scheduling is a problem, one of the following adjustments may offer a solution:

(1) Combine classes
(2) Reduce the number of electives
(3) Lengthen the school day

b. The program should include a variety of activities with the emphasis being placed upon strenuous conditioning activities. The need for a varied and well-balanced activity program cannot be stressed too much.

c. The program should be planned in advance to insure that each activity will be given its allotted time and that no activity will be overlooked. Many programs are made up of too few sports, and as a result the participants learn a limited number of skills. Experience has shown that the carry-over sports, such as swimming, golf, tennis, bowling, and yard games, are generally neglected.

d. Facilities should be provided in sufficient quantity to meet the needs of the largest classes. A program cannot function without adequate equipment, and it is the duty of the administration to see that the instructor has the tools that he needs.

e. Demonstrations or exhibitions with large groups participating to arouse interest should be planned, and the programs publicized.

5. Policies Relating to the Students

a. Every student should be given a medical and physical examination at the start of the school year. This is a protective measure and is sufficiently important to warrant careful consideration. If a school physician or nurse is not available, it may be possible to recruit the services of the local physicians for this undertaking. (See Chapter 28.)

b. Adequate locker and shower room facilities should be provided.

c. Students should be required to purchase regulation uniforms. Experience has shown that this requirement is a definite asset in maintaining high morale and an interest in the program. The uniform should be inexpensive and made of a material which launders well.

d. Absences should be made up. All written excuses from responsible sources should be recognized. All but medical excuses signed by a physician or school nurse should be made up.

e. The classes should be kept below the maximum which can be handled with the facilities available. Forty is accepted as the maximum, but in many schools this number is too large. Large classes are difficult to handle where facilities are meager, and as a result students do not get the required amount of participation.

f. Students should be grouped or classified as to age, size, and degree of skill. This recommendation is to protect the students as well as to guarantee interest and efficient learning. Many schools employ tests for this purpose, but in a small school the teacher's subjective judgment can usually be relied upon.

g. Training in leadership should be given by the use of students as squad leaders in physical education classes, and as student managers in intramural and interscholastic activities. Students with medical excuses may

likewise be employed for such tasks as handling records and issuing equipment.

h. Testing and re-testing programs should be used to measure the progress of the students. The tests should be varied and should serve as goals for all the students; but standards should not be set which can be attained by only a few students. (See Chapter 26.)

i. Students who are members of school teams should be excused from physical education classes during the season of practice and competition.

j. Physical education should be recognized as a school subject, with marks given, and credit awarded toward graduation for successful completion of the program.

## INTRAMURALS IN PHYSICAL EDUCATION

Intramurals, together with the required, the corrective, and the interscholastic programs, make up four areas in physical education. All are concerned with the development of the student through physical activity.

The intramural program attempts this development through a games program during out-of-school hours, with students choosing their own activities. The integration of this program with that of the required program leads to a more efficient attainment of objectives. The required program is limited by an insufficient time allotment and by an overload of facilities. If the program recognizes this limitation and confines itself to the necessary fitness drills, the introduction to activities and the teaching of basic skills, the intramural program may proceed from this point. Every student may then choose his preferred activities and continue on his own time to improve his physical fitness, as well as to acquire some of the social, mental, and moral development inherent in such activity. Supervision of the program, however, is essential to assure its direction toward desired educational outcomes.

CHAPTER 3

# PROGRAM PLANNING

The physical education instructor should endeavor to include in the program a wide variety of the activities described in this book. The expressed desires of the students should be considered, but not to the point of outweighing their needs. A proper balance between team sports, individual and dual sports, and conditioning activities should be maintained to provide numerous educational experiences. It may not be possible to offer all the activities mentioned in this book in any one school because of limited facilities and inadequate time allotment, but every attempt should be made to introduce additional activities into the program from time to time as opportunities arise.

The core sports activity schedule presented in this chapter should be used as a foundation program. It should serve as a general guide to program planning, but changes or additions should be made to encompass activities which have local interest. The so-called major sports (football, basketball, baseball, and track and field athletics) should be offered in season. The remaining activities may be presented during any period of the school year, although it is customary to conduct gymnasium activities such as wrestling, boxing, apparatus exercises, and tumbling during the winter season. If the program is offered five days a week, the core sports may be offered only three times a week, and other programs be used the other days.

The fall and spring activity programs must be modified when the weather precludes outdoor activity. Apparatus work and self-testing activities may be substituted for the regular activity, or practice drills in game skills may be adapted for indoor use. It may also be advisable to use part of this time for lectures and discussions on sports rules and techniques or for instruction in hygiene. The physical fitness testing program is generally administered during the first few periods in the fall and during the last few periods in the spring, but the tests which are indoor events may be administered during inclement weather.

CORE SPORTS ACTIVITY SCHEDULE FOR HIGH SCHOOL BOYS

| | Junior High School | | | Senior High School | | |
|---|---|---|---|---|---|---|
| | VII | VIII | IX | X | XI | XII |
| September-October | Touch Football | Touch Football | Touch Football | Football | Football | Football |
| November | Speedball | Speedball | Speedball | Soccer | Soccer | Soccer |
| December | Games and Relays | Games and Relays | Volleyball | Volleyball | Badminton | Handball |
| January | Basketball | Basketball | Basketball | Basketball | Basketball | Basketball |
| February | Basketball | Basketball | Basketball | Basketball | Basketball | Basketball |
| March | Tumbling, Stunts, & Pyramids | Tumbling, Stunts, & Pyramids | Tumbling, Stunts, & Pyramids | Wrestling | Wrestling | Boxing |
| April | Track and Field | Track and Field | Track and Field | Track and Field | Track and Field | Track and Field |
| May-June | Softball | Softball | Softball | Baseball | Baseball | Baseball |

In addition to the core activity program the instructor should insist that a part of every period be devoted to conditioning activities. The first ten to twenty minutes of each period should be reserved for these exercises. Running, grass drills, guerrilla exercises, or traversing an obstacle course may constitute the conditioning activity during the fall and spring. Conditioning exercises, weight training, rope jumping, or drill in home exercises may be used as the conditioning activity during the indoor season.

To illustrate methods of planning the activity program for a single period, the following examples are offered:

EXAMPLE No. 1

*Class:* Junior High School Boys.
*Time of Year:* Fall.
*Length of Period:* One hour.
9:00–9:05 Dressing.
9:05–9:20 Grass drills ending with two laps around running track.
9:20–9:35 Practice drills in speedball skills (five minutes of goal-kicking, five minutes of dribbling with feet, and five minutes of trapping).
9:35–9:45 Informal game of speedball between squads chosen by squad leaders during practice drills.
9:45–9:50 Traversing the outdoor obstacle course and running to showers.
9:50–10:00 Bathing and dressing.

EXAMPLE No. 2

*Class:* Junior High School Boys.
*Time of Year:* Winter.
*Length of Period:* One hour.
9:00–9:05 Dressing.
9:05–9:20 Weight training.
9:20–9:25 Guerrilla exercises.
9:25–9:50 Apparatus exercises and tumbling.
9:50–10:00 Bathing and dressing.

EXAMPLE No. 3

*Class:* Senior High School Boys.
*Time of Year:* Winter.
*Length of Period:* One hour.
10:00–10:05 Dressing.
10:05–10:15 Conditioning excercise drill.
10:15–10:25 Combatives.
10:25–10:40 Practice drills in basketball (five minutes on lay-up shots, five minutes on dribbling, and five minutes on defensive play).
10:40–10:50 Informal games between squads chosen before class by squad leaders.
10:50–11:00 Bathing and dressing.

EXAMPLE No. 4

*Class:* Senior High School Boys.
*Time of Year:* Spring.
*Length of Period:* One hour.
2:00–2:05 Dressing.
2:05–2:15 Conditioning exercises with poles.
2:15–2:20 Rope jumping.
2:20–2:40 Games.
2:40–2:50 Steeplechase and walking to cool off.
2:50–3:00 Bathing and dressing.

The physical education instructor should prepare each lesson in advance.

All activities not in the core activity schedule should be varied from time to time in order to lend variety to the program. The students should be cognizant of the year's schedule of core activities, but the instructor should use ingenuity in selecting other activities to arouse interest and provide an element of surprise in each lesson.

Another method of program arrangement that gives the pupils greater freedom of choice may be considered. This method is predicated upon the teacher's first discussing the program and its possibilities with the class. Here the teacher should take care to present all aspects clearly, and to make every effort to cause the pupils to understand all of the implications of all types of activities. Then the pupils indicate on a questionnaire their range of choices. After these questionnaires have been tabulated, the teacher considers the results carefully in his arrangements. He then offers numerous choices.

Since the teacher is responsible for seeing that the program is a constructive one, he will not be bound by the results of the questionnaire if those results are not helpful. This method does not imply that the activities must be dictated by the temporary whims of the boys. This will not be a serious problem under good leadership.

For example, a class might start with some warming-up exercises or with a run. This might be followed by several choices of squad activities such as (1) wrestling technique instructions, (2) horizontal bar stunts, (3) tumbling, (4) high jumping practice, and (5) rope climbing. There may be more than one squad on an activity if the demand is great enough. This squad work may last for from twenty to twenty-five minutes. The boys choose which squad they wish to join. It is to be remembered that the items offered are based largely on the questionnaire returns. Following the squad work, the next offering might be some aspect of a directly conditioning activity, such as weight training, a conditioning drill with heavy iron wands, or intensive guerrilla exercises. This could be followed by several choices in recreational activities. For example, if basketball is played, usually only ten or twelve boys may participate at one time. But if two games are played on one court *across* the gymnasium, one game centering on each basket (see p. 84), other activities may be organized in the rest of the gymnasium. For example, a group of wrestling enthusiasts may be engaged on mats arranged in a corner. Boxing enthusiasts may be engaged in training with head protectors in another corner. Another group may be playing goal-hi in the remainder of the space. This sort of organization offers much more freedom of choice than is usually seen, and gives a much greater elasticity to the program.

### Training of Leaders

Success in this sort of program will depend upon two things: (1) the ability of the teacher to lead without being overrun by the boys, and (2) the organization and thorough training of a leaders' corps. Each squad must have good leadership. Hence the selection and the training of the leaders are of great importance. The best technique is usually to have the leaders assume responsibility primarily for the activities for which they are best fitted. For instance, some boys will assume leadership primarily in the organization and conduct of games, others in teaching track and field events, others in wrestling, some in swimming, and some in apparatus exercises and tumbling. Some boys may be leaders for several activities, and the teacher should endeavor to enlarge the scope of the leaders' training and interest. Special training classes should be held for these boys, and they should be as carefully coached in the theory and practice of their activities as are major students in physical education.

## THE CORRECTIVE PROGRAM, OR THE PROGRAM OF SPECIAL PURPOSE EXERCISES

In many small schools the teachers will not be especially well trained in this type of activity. These teachers should keep very carefully in touch

with the school physician, and follow carefully the instructions in Chapter 25. The emphasis given to this class will determine to a large extent the interest of the boys. It is well to call the class a "Developmental Class," rather than a corrective class. It should meet at a different time from the regular class, and have very careful supervision. Much of the instruction will be in games and modified activities for handicapped students—teaching them skills in activities which they can learn to do well in spite of their handicaps. Skills with large carry-over value should be stressed. This class should be very carefully organized, and the teacher should put his greatest enthusiasm into it.

## CHAPTER 4

## GENERAL METHODS

The problem of general method involves a full consideration of the accepted principles upon which the science of physical education is based. These principles must be scientifically and fundamentally sound, and founded on research in the fields of health, biology, psychology, physiology, and anatomy. Methods in physical education should involve the aim of education itself. Its objectives should parallel those of factual education.

The teacher should consider the total situation and not an isolated part. Naturally his teaching will reflect his background, experiences, and personal interests. These factors must be weighed carefully against the most modern methods of getting results. If the teacher's methods are based on sound principles, his teaching will provide an opportunity for the expression of his own individuality and personality. Perhaps this expression is one difference between mediocre teaching and good teaching.

Certain time-tried methods in physical education have been with proper administration universally successful. These methods will be reviewed briefly.

The use of repeated drills cannot be over-emphasized. The teaching of skills cannot be a fleeting thing. If the desired results are to be obtained, these drills should result in conditioned responses.

The "why" as well as the "how" should be explained to the students. Too often the teacher-coach expects students to follow instruction blindly. Correct insight leads to quicker learning. There is a reason—for example, mechanical and anatomical—that good form results in optimal performance.

The learning of skills is not in itself the ultimate goal. Associated and concomitant learnings will provide a vehicle for a more complete product. Attitudes, rules of the game, health factors, problems of sleep, rest, and diet are some of these concomitant learnings. The attitudes of the teacher are equally important. The best teaching comes from individuals who have high professional standards and who are intensely concerned with the attainment of their objectives.

Factors involved in good teaching include tact, cheerfulness, courtesy, decisiveness, initiative, loyalty, discipline, and knowledge of the subject at hand. There should be constant self-analysis and retrospection to see whether some of these factors have been neglected.

Crawford* lists rules which may well be reviewed, not only from a learner's point of view, but also from an instructor's:

1. Get a clear idea of the skills to be performed.
2. Learn the underlying principles and theory of the skill.
3. If possible, perform the skill yourself.
4. Analyze the probabilities of success or failure.
5. See how others perform the skill.
6. Find out what constitutes good form in the task, and then adopt it.
7. Start right, and stay out of blind alleys.
8. Pay more attention to results than to processes.
9. Sacrifice speed in favor of accuracy and coördination in the early stages.
10. Learn the elements of the operation together instead of separately.
11. Increase skill by constant repetition.
12. Distribute practice over several periods, providing opportunities for rest.
13. Measure your progress.
14. Permit no exceptions.
15. Practice under varying conditions and situations.

* C. C. Crawford, *Techniques of Study*, Chicago: Houghton Mifflin Company, 1928.

The scientific bases for determining underlying methods in physical education might be divided into four main headings. Only a few facts in each group will be given as examples.

A. BIOLOGICAL

1. Knowledge of the stages of growth and development of the child will enhance the instructor's understanding of the physical and mental unfoldings. The growth of the individual is rhythmic, not continuous; this is, he develops in spurts. Many skills are taught before the child is ready for them.

2. Knowledge of physical traits, characteristics, individual differences, likes, dislikes, urges, instincts, and inherited and environmental behavior patterns affords avenues of approach for understanding the child.

3. Each individual has a performance ceiling. Different individuals will attain different degrees of proficiency in skills, regardless of the amount of training. Physical skills follow the probability curve: not all the boys will be "all-staters."

4. Knowledge of body mechanics should be applied. Since at best a trained athlete can achieve an efficiency of only about 40 per cent, wasted motion should be avoided wherever possible.

5. Because of individual differences, the best form for one individual may not be the best for another. Only those techniques are good which produce desirable results.

B. PHYSIOLOGICAL

1. A working knowledge of fatigue—its cause and the recovery from—is extremely important. There is a difference between a well warmed-up, and a tired, fatigued, or exhausted boy. Fatigue results in the loss of accuracy and coördination, and in other response changes. A tired boy continues to tire rapidly. He should not be forced to call on his reserves.

2. Knowledge of the physiology of the warm-up, with its accompanying changes and compensations, should be a part of every teacher's equipment.

3. The nature of oxygen consumption, the development of the oxygen debt, and the results of the lack of oxygen should be a part of every teacher's background.

4. A full understanding of compensatory adjustments, second wind, systemic changes resulting from training, the overload principle, and tapering off will give the teacher complete confidence in prescribing exercise.

5. Strength and endurance can be increased only through strenuous exercise.

C. PSYCHOLOGICAL

1. The application of the laws of learning—effect, readiness, mindset, partial activity, exercise, use, frequency, disuse, recency, vividness, intensity of stimulus, learning curves and plateaus, and motivation—is a useful vehicle in teaching.

2. The problem of conditionings, habit formation, reactions, and reflexes should be well understood.

3. A general knowledge of students at each age—their interests, capacities, abilities, limitations, original nature, and morals—cannot be overestimated.

4. A younger child has a shorter interest span than does an older student. The older student tends also to narrow his interests and to desire specialization.

5. Students learn by seeing, hearing, and doing. In the teaching process, use should be made of all three of these factors.

D. SOCIOLOGICAL

1. Methods used in one community may, because of community traditions, industrial and religious influences, and likes and dislikes, have to be modified before they can be used successfully in another community.

2. The home training of the children has a wide variation. Many attitudes must be changed.

3. Play affords a common meeting ground where people of any race can find an interest.

4. The increase in human interdependence shows a real need for such qualities as coöperation, fair play, honesty, and courtesy.

5. Student leadership should be efficiently utilized, especially in its potential contribution to character moulding.

The teacher's personality is reflected in his group. Enthusiasm and drive, and an interest in the profession must be coördinated with a knowledge of instructional methods and a mastery of techniques.

In the mechanism of method, the following steps are progressively arranged:

1. *Preparation.*—The material to be taught must be assembled and analyzed.

2. *Explanations.*—These must be complete, correct, and no longer than required by the difficulty of the material.

3. *Demonstration.*—Visual education is not made use of as much as it should be. Demonstration may be accomplished by charts, drawings, still slides, and movies. The ability of the instructor to demonstrate is of intrinsic value, for such demonstration enables the learner to get a complete picture of the performance.

4. *Application.*—This aspect involves actual practice and repetition.

5. *Discussion.*—This means should be used for clearing up doubtful points and misunderstandings.

6. *Examinations.*—These should involve only the essentials; they are a part of the testing program.

Factors aiding in good teaching include the use of contrasts and analogies. The procedure should be from the known to the unknown in a step-by-step progression. Timing and rhythm should be emphasized, for skillful movements are as important as strength building exercises.

The demonstrations should be rehearsed, and then strictly supervised so that no bad habits are formed. Pupils should be selected at random to demonstrate, for many feel that they never will be called upon.

The methods for presenting the subject matter are as follows:

For beginners, the coach and pupil method is very good. This may be coupled with the "Buddy System," in which experienced boys are coupled with inexperienced, or the boys are merely paired off, one supervising, the other practicing. However, the instructor must oversee the work carefully.

The use of the whole method carries certain advantages over the part method. But the part method should be used at first if it is needed to make clear what the various parts of the movement are. Understanding of all of the parts of the whole skill is essential. After initial progress has been made, attention should be focused on the integrated whole.

Formal teaching should not be entirely disregarded. Many activities, such as gymnastics, can well be taught formally. Much coaching is actually formal teaching.

The direct method is most universally employed by coaches with good results. It is possible to do a good job of coaching informally, however. The project method has been successfully used in athletics, and is of untold value in many activities, such as floor work. Here good use can be made of student leadership, choice, and self-direction. The questionnaire should be utilized to ascertain the desires of the students.

The program should be planned so that there is an orderly progression of daily, weekly, monthly, and yearly units, all incorporating a variety of activities.

Complex presentations should be avoided. The more complex the stimulus pattern, the greater the confusion. A lack of knowledge should not be covered by bluffing. The use of arrogance, sarcasm, and ridicule should never be resorted to. Praise is better than rebuff.

The simplest methods of calling roll should be used. The classes should be moved quickly and quietly. Safety precautions should not be forgotten. Mental and emotional hazards should be reduced to a minimum.

If the class seems disinterested, the teacher should indulge in a little retrospection in order to analyze the probable causes—a poor instructional voice, lack of professional interest, worry, discouragement, lack of self-confidence, over-tension, laziness, or a lack of good subject matter.

## CHAPTER 5

# INTRAMURAL ATHLETICS

## I. AIMS AND OBJECTIVES

*Aims:*

To provide supervision and facilities for a voluntary program of wholesome recreation activities, basically physical, which are mentally stimulating and socially sound, so designed as to contribute to the development of every student.

*Objectives:*

*Immediate*

To provide free-time fun for the students.

To provide wholesome developmental activities.

To provide every student with an opportunity to take part in an activity of his choice.

To develop an active, wholesome out-of-school play spirit.

To develop hobbies.

*Associated:*

To stimulate the desire for a greater knowledge and greater skill in any particular activity.

To develop the student through these activities.

*Physically,* by stimulating the desire to take part in vigorous games leading to the muscular activity so essential to the normal development of youth.

*Mentally,* through game situations demanding clear, quick thinking; and, in addition, to present those situations demanding need for the exercise of emotional control.

*Socially,* by the organization of the students for the program itself, giving them the opportunities for leadership and followership training.

*Morally,* through the development of sportsmanship in game situations. This sense of sportsmanship can well become the basis for transfer to life situations and the ultimate development of ethical character.

## II. GENERAL GUIDING POLICIES FOR SETTING UP THE PROGRAM

1. The program must be kept on a voluntary basis.
2. Activities must be wholesome, healthful, and socially sound.
3. Provision must be made to include all students.
4. Physical examinations should be given each student, and his limitations indicated thereby. The program must provide appropriate activities for the handicapped.
5. Success is an essential experience for every youth. Procedures for classifying teams and players, or for equalizing the abilities of groups must be used so that this objective may be effected.
6. Trained adult supervision is as essential in this program as the coach is in the interscholastic program. Guidance determines the direction of the development. Adult guidance, therefore, is essential.
7. Students should conduct this program themselves under faculty guidance. The educational possibilities of this program are enhanced by this feature. The experience of leading teams, deciding policies, and officiating are experiences not often available in the interscholastic program.
8. This should be kept a play program. Teaching in techniques should be conducted in the required classes. Teams may themselves arrange for coaching and practice.

9. The program should, when possible, be financed by the educational funds. It should not be dependent upon the gate receipts of the interscholastic program for its existence.

10. The program of activities should be sufficiently diversified to include activities of interest to every student. Types of games varying from strenuously active to non-active should be provided on both the team and individual basis.

11. Facilities must be provided. Where conflicts in after-school use of facilities arise, the responsibility of an equitable time allotment of such facilities to the various phases of the students' extra-curricular program rests with the administration.

12. Rewards must be planned for their help in stimulating interest, recognizing achievement, and motivating continued activity.

## III. Organization of the Program

There will be a great variance in the size of student bodies and in facilities available in schools of different sizes. The administrators and teachers interested in the intramural program will adjust the material in this chapter to fit their needs.

### A. *Administration and Supervision.*

The administration of this program should be a function of the physical education department. The administrator of this department or program is usually, in most Iowa schools, also the teacher of physical education and the coach of *all* interschool athletic teams. The coaching responsibilities do not leave adequate time for the coach to supervise intramural activities. Adult supervision is essential, however, and it is best when thought of and functioning as guidance.

The students should be organized to plan, promote, organize, and conduct their own programs so that they themselves might have all the experiences inherent in such a task. The adult guiding the program then has a real task. Whom should the administrator choose for such an assignment? One of the faculty interested in sports, understanding and enthusiastic, who is desirous of contributing to the general development of the pupils would be ideal. In the larger systems several faculty members might be assigned, for the limit to the possibilities of the program is the size of the student body itself. It can and should include 100 per cent of them.

### B. *Time Allotted for Use of Facilities.*

The time allotment of facilities is always a problem. This is especially true during the winter months when the demand is greatest.

Extra-curricular activities, including interscholastic contests or practices, intramural contests, and band practices usually are in conflict concerning the use of the much demanded gymnasium floor space. If the use of the gymnasium is left for settlement among the staff members in charge of the various activities, the strength of personalities usually predominates to the detriment of one phase of the program. This decision is a responsibility of the school administration and demands a decision equitable to the pupils as a whole.

*The band's requirement is space, not necessarily the facilities available in the gymnasium.* The band should be cared for in one of the larger rooms. The real conflict then is between the interscholastic practices and intramural contests, the intramurals including those for both boys and girls.

A schedule worked out in advance to exchange evenings and afternoons between the two, and use of more Saturdays will help to solve this problem.

C. *Student Time Allotment for the Program.*

When can the student best play?

1. Morning before school.
2. Noon.
3. After school (4:00 to 5:30).
4. Evening (7:00 to 8:30).
5. Saturday (9:00 to 12:00).
6. Short vacation periods.
   a. Thanksgiving. b. Christmas. c. Easter.

This program is one in which the student should be encouraged to participate in after-school hours. The tradition of locking the school at four o'clock should be a thing of the past. Education is a continuous process, and the program should be conducted on that basis.

Faculty responsibilities should, if necessary, span Saturdays and the short vacation periods.

Each student should be limited to not more than one week-day evening in the school building. The varsity team practices may also take an evening session each week, particularly when their number involves fewer pupils.

In the morning the time before school is not a good period but may be utilized especially for individual contests.

Noon periods are excellent for the less strenuous sports.

Noon periods for the strenuous sports should be used only when satisfactory adjustments can be made to allow for the later lunch period.

The time after school is the ideal period.

Evening is good but must be limited.

Saturdays and short vacation periods are good to relieve crowded facilities and also good from the standpoint of the pupils playing.

The shortage of labor in some cities, with the resultant use of boy labor, might limit the number of boys able to play.

D. *Grouping the Student Body for Competition.*

The underlying principle in devising units for competition is that the resultant units be comparable in ability.

The development of strength from group membership is dependent upon favorable competition with like groups. That there is a need for group-consciousness, coöperation, self-sacrifice, and loyalty, as qualities important and desirable in the development of every boy and girl, is agreed. This problem needs to be given careful consideration if the best educational outcomes are to emerge.

The home room is the most acceptable unit, provided that the several home rooms are comparable on an athletic basis. It can be readily understood that if such groups are originally set up by classes, the Senior home rooms should be far superior to the Sophomore rooms and should not compete on a comparable basis. In some larger schools where this is the case, teams play for their class championships only.

These home rooms are natural units and aid in the administration of the program as well as in giving the pupil a rather natural unit to which to attach his allegiance.

Some schools use color squads, formed by the equal distribution of classified incoming students, age, weight, and height being the factors usually used for such classification.

Other schools have divided the town into geographic areas radiating from the school as the hub.

The success of the color and geographic groupings will depend upon the traditions established through their use. Some have had to guard against building up the geographic area rivalries too strongly.

E. *Program Content.*

**The program of activities shall include as many activities as facilities permit and as interest warrants.**

**The following is a list of suggestions:**

| A | Fall | Winter | Spring |
|---|---|---|---|
| Strenuous | Touch Football | Basketball | Track |
| | Soccer | Wrestling | |
| | Speedball | Indoor-track | |
| | Cross Country | Swimming | |
| | | Water Polo | |
| | | Ice Hockey | |
| **B** | **Fall** | **Winter** | **Spring** |
| Moderately | Tennis | Volleyball | Softball |
| Strenuous | Football Field Meet | Handball | Softball Field |
| | (skills) | Water Baseball | Meet |
| | Aerial Tennis Dart | Winter Sports (skating, | Tennis |
| | | tobogganing, skiing) | Aerial Tennis Dart |
| | | Badminton | |
| | | Paddle Tennis | |
| | | Fencing | |
| | | Gymnastics | |
| | | Diving | |
| | | Aerial Tennis Dart | |
| C | Fall | Winter | Spring |
| Non- | Horseshoes | Table Tennis | Horseshoes |
| Strenuous | Archery | Bowling | Archery |
| | Golf | Free Throw Contest | Golf |
| | Golf Putting | Shuffle Board | Golf Putting |
| | Shuffle Board | | Roque |
| | Roque | | Croquet |
| | Croquet | | |
| D | | Winter | |
| Non- | | Checkers | |
| Active | | Chess | |

Many of the above activities under the C and D groupings are suitable for co-recreation on noon-day programs.

F. *Finances.*

The program, where possible, should be financed through educational funds; the program is definitely supplementary to the required physical education program. However, where this is impossible because of board of education accounting technicalities, methods of raising funds from other sources must be found. Some of these sources follow:

1. Civic clubs subscribing to its support. Every father is interested in his boy, and the fathers of the boys in this program are just as interested in their boys' progress as are those having sons on the varsity teams.

2. Through the staging of championship contests at night and charging an admission to the public.

3. Granting concession rights at athletic contests to the intramural board, with selling to be done by its members.

4. Through a nominal charge made to all students.

5. Carnivals and entertainments.

6. Interscholastic program profit. This program, however, should not be dependent upon an indefinite source for its existence.

## IV. Conduct of the Program

### A. *Management.*

Definite organization of student help in a managers' set-up is essential to getting the program to run and to giving the youngsters the opportunities in the experiences available.

1. Staff managers should be directly responsible to the faculty member in charge. Their duties are to help conduct the general program. They would be responsible for such details as

   a. Caring for and handling equipment.
   b. Making schedules.
   c. Making announcement posters.
   d. Keeping bulletin boards.
   e. Assigning officials.
   f. Delivering announcements.
   g. Keeping records.

These managers should be chosen on a competitive basis working toward the head manager.

2. Unit managers should be chosen by, and responsible for, the activities of each unit.

3. The managers' council or intramural board should be the student control-body of the program. Membership should be composed of representatives of all units, preferably the unit managers and established personnel of the staff management organization.

4. Needless to say, there will always be a good many details of management remaining for the faculty member in charge to administer.

### B. *Officiating.*

Games must be officiated, and in most cases at no cost. Practices in handling this item of the program vary somewhat. They range as follows—officiating by:

1. Coaches.
2. Faculty members.
3. Townsmen.
4. Young alumni.
5. Lettermen's club members.
6. Sports club members.
7. Officials' club members.

Officiating must be good if the desired educational outcomes inherent in competition are to be realized. However, student officiating can fulfill the purpose if the proper supervision is given to it. In the use of students for this purpose another field of experience is opened up to them.

### C. *Teaching Activities.*

This program is usually thought of as being the outgrowth or the practical application of techniques learned in the required program which, in practice, eliminates the need for teaching techniques to intramural teams. However, that is not entirely the case, for often the required program is too pressed for time with its short periods and large enrollment. Consequently, some instructional work must be done.

Examples of such cases would be activities requiring a higher degree of skill, individually, or a higher type of team organization for team games. Archery, fencing, tennis, and golf would be illustrations of activities of the individual type; while the team games of touch football and basketball would illustrate the latter example. In the former, a common practice is the formation of clubs of interested players, with an equally interested faculty member

acting as leader. Each group can then practice and learn to play the sport before starting competition.

A similar practice in the team sports is advisable. The provision of a definite practice period preceding actual play will do much to improve the calibre of play and to give the players a better understanding of the strategy of the game, and a better mastery of the skills involved. The supervisor of such a series of practice sessions would call all squads together for general instructions and demonstrations as many times during the period as necessary. They would practice as separate squads after each general discussion. Observation of their practice is, of course, essential.

Clinic-styled demonstrations are very good in many activities. The visual approach through the use of available sports films is effective for mass instruction.

The play of students should continually be improved. Too often, and rightfully so, intramural programs are criticized for being concerned only with *quantity* and not with *quality*. The concern is first with quantity at whatever degree of skill, but the program should also be so conducted that each individual will feel a definite challenge to improve his play.

D. *Participation Limitations.*

Every student should be included in this program. However, there must necessarily be some limitations placed upon some for various reasons. The general reasons for such limitations are health and sports squad status.

1. *Health*

Every student should have a physical examination, with those having disabilities being restricted in accordance with the recommendations of their examining physician.

Reference to the classfication of activities under III E, Program Content, might be used as a guide by the examining physician.

2. *Sports Squads.*

Limitations of sports squad members should be made on the basis of conflicting activity, excessive activity, or of superior ability.

a. Members of a sports squad should definitely be ineligible to take part in the same activity in which they are competing as a member of the interscholastic squad. Exception to this would be the border line squad individual who never had the opportunity to compete in the interscolastic program in the sport but because of his interest was kept on the squad. He should be given the opportunity in this case to compete in the intramural program in that sport, provided that it does not involve excessive activity or time spent in the sport. The best practice is for coaches to name their squad members, who will thereafter be ineligible for intramural sports during their season of competition. However, provision may be made to scratch from that list the border-line cases who may be allowed to get their competition in the sport in intramurals.

b. A letter winner in a sport one season should not be permitted to play in that sport in intramurals the next season, if for some reason he is not on the varsity squad. He is presumably superior in ability to the rest of the boys.

c. Sports squad members should not be restricted from taking part in any intramural activities that are not also included in the interscholastic program. Exception to this, of course, would be if the time of play conflicted with squad practices, or if the activity in the intramural sport made the activity excessive for the day.

E. *Methods of Conducting Competitions.*

The meet and tournament plans of competition in general cover methods quite completely.

The meet plan provides for the scoring of established points for places won. The tournament plan determines a champion by the elimination of the losers, round robin where all contestants play each other, and the ladder type in which the players are ranked and the players then challenge those immediately above them, with winning permitting a change of position on the ladder.

The choice of the method to be used in a competition must be determined on the basis of the number of players, the time, and the facilities available.

It must be kept in mind that interest is stimulated over a period of time, provided that the competition is challenging. The possibility of success or winning offers the challenge; so if there is a possibility of equalizing ability, a greater amount of competition is indicated; otherwise the first play should be used to classify contestants, with subsequent competition being limited within ability groupings.

F. *Rewards.*

Rewards to the students in the program must be planned for their help in stimulating interest, for recognizing achievement, and for motivating continued activity.

The most common practice is a point system, operating over the school year, in which achievement and participation are rewarded by points. At the end of the period, all students having acquired a minimum total of points are awarded a school intramural monogram. Points systems may also be operated in competition between units in recognition for all-round achievement in the program.

Rewards for sports championships should capitalize on building desire for team membership, and the award should take a form that will accomplish this; for example, a basketball banner held by the winning home room for the year during which they are champions.

G. *Publicity.*

Publicity in respect to this program is important from the angle of the students, the parents, and the general public. The parents will be interested in their youngsters' part. They will appreciate that there can be a balanced program in which their own boys can take part even though not athletically good enough to play on the varsity team. Human interest stories depicting the desired outcomes of the program are very good to use in the local papers.

The general public needs to know what is going on and what the department is trying to accomplish. Through this program they will gain a broader viewpoint of athletics in the school program with a better understanding of the fact that the school physical education is dealing with the all-round development of the pupils. The undesirable exploitation of school athletics to prove superiority of one town over the neighboring village will likely become a thing of the past through such enlightenment of the public.

V. *Measuring Progress.*

An estimate of progress must be made in the light of the aims and objectives: Are the goals that have been set up being attained?

The extent to which the students take part will be the yardstick in respect to interest.

The actual development from a physical standpoint may show up in a testing program if such is conducted in the required program.

Mental, social, and moral development will merely have to be judged, but if the program is stimulating and the setting wholesome, progress will be practically assured.

## CHAPTER 6

# NOON-HOUR AND CO-RECREATION PROGRAMS

The general function of education is to assist each individual in making an adequate personal adjustment to the problems and processes of daily living. The physical education program, with its accompanying recreational activities, may well be the workshop for the discovery and solution of such problems.

Activities in which high school people are interested should be taught in the regular physical education period, for they form a nucleus for the recreational out-of-school program. Some of these activities which would coördinate with the recreational program are listed for boys, and the *Iowa Plan of Physical Education for High School Girls* covers the material very thoroughly for girls:

Rhythmic activities: social dancing, square dancing.

Stunts and tumbling.

Combat activities: boxing, wrestling (boys only).

Group games: deck tennis.

Team games: volleyball, baseball.

Individual and dual games: archery, bowling, ping-pong, shuffleboard, tetherball.

Out-of-class: intramurals, free recreation, out of school.

The free recreation activities, including the noon-hour program, should be the outgrowth of the physical education program of the school. They should provide activities which are suitable and enjoyable as leisure time recreation. Those participating in the program have been confined to a long morning work period and are faced with another period equally confining: it is imperative to their well-being that the noon program present relaxation that satisfies the needs and wants of each individual, furthering emotional, social, and physical well-being.

The factors involved in a successful noon-day program are essentially the same as those found in any recreational program. There is a heterogeneous group of pupils with a wide variety of preferences; thus, the problems of time, space, equipment, accessibility of materials, many kinds of activities, and the corresponding health needs must be the basic fundamentals from which planning is started.

*Organization.*—There are many ways of organizing a recreational program, but undoubtedly the most democratic procedure is for the boys and girls to plan their own programs. A noon-hour co-recreational planning committee, with members representing each interest group or grade, might well be the nucleus of such an organization. The committee first determines the needs and wishes of the group, and then plans a program which will accommodate the greatest number of people in the most effective manner. Such a program must encompass the entire school, including not only building and playground facilities, but also the teaching and student personnel.

Team games, folk games, dancing, or games using many people may be played in the gymnasium, while dual and individual activities may be carried on in a more limited space. Tournaments, co-recreational or otherwise, add interest to the activities, and may be scheduled, umpired, and scored by students who have been given instruction through the regular physical education period.

A program for a school of any size where the gymnasium, corridors, and a room for special activities are available for the noon hour is suggested below, with the hope that it may serve as a structure for the organization of a workable program in any school. Volleyball is recommended rather than basketball as a team sport for winter, for it is a co-recreational game, allowing both boys and girls to participate in the gymnasium together, and is less strenuous than basketball, thus making it more desirable as an activity immediately following lunch. The girls may use the double bat if it is desired.

| | Gymnasium | Playground | Corridors | Game Room | Any Room |
|---|---|---|---|---|---|
| FALL | Badminton<br>Handball<br>Dancing | Soccer<br>Touch Football | Shuffleboard<br>Bowling<br>Sidewalk Tennis | Box Football<br>Box Hockey | (with floor space for mats)<br>Stunts and Tumbling<br>Boxing<br>Wrestling |
| WINTER | Volleyball<br>Dancing | Winter Sports (coasting, skiing, snow games) | Beanbag Toss<br>Ping–Pong<br>Ring Toss<br>Rope Jumping | Darts<br>Checkers<br>Lotto<br>Blackboard Games | |
| SPRING | Deck Tennis<br>Dancing | Softball<br>Track and Field | Archery | | |

Arts and crafts, such as wood carving, soap carving, net tapping, leather work, puppetry, and painting, would be an excellent addition to such a program.

In schools where two gymnasia are available, it is possible to administer an extensive program. Such a program would include archery, badminton, ping-pong, and shuffleboard in the fall, a continuation of these activities with the addition of social dancing, darts, and bean-bag toss in the winter and spring. The facilities necessary for the successful administration of this program are: one playground, two gymnasia, four shuffleboard courts in a corridor, four ping-pong tables, three archery targets, three badminton courts, and an electric victrola with records for dancing.

One of the particularly interesting activities to include in the noon-hour program is co-recreational volleyball intramurals. Each team is composed of ten members, five boys and five girls, and round robin tournaments are played by the eight or ten teams in each league. The number of participants determines the number of leagues necessary in the organization of these tournaments. The games are held at noon, starting at 12:05 and are completed at 12:45. If the volleyball net is stretched lengthwise of the gymnasium, two games may be played at the same time.

*Suggested Recreational Activities*

- Gymnasium
  - Team Sports
    - Volleyball
    - Deck Tennis
    - Basketball
  - Individual and Dual
    - Badminton
    - Aerial Darts
    - Handball
  - Rhythmic
    - Social Dancing
    - Folk Dancing
    - Cowboy Dancing
    - Country Dancing
- Playground
  - Team Sports
    - Soccer
    - Softball
    - Touch Football
  - Individual and Dual
    - Tetherball
    - Rope Jumping
    - Group Games
    - Sidewalk Games (Hopscotch, Sidewalk Tennis)
    - Horseshoes
    - Winter Sports (Coasting, Skiing)
    - Track and Field Events
- Corridors or Hallways
  - Individual and Dual
    - Shuffleboard
    - Bowling
    - Sidewalk Tennis
    - Bean Bag Toss
    - Ping-Pong
    - Ring Toss
    - Rope Jumping
    - Archery
- Game Room
  - Individual and Dual
    - Box Hockey
    - Box Football
    - Darts
    - Quiet Games
    - Blackboard Games
- Special Room (Floor Space for Mats)
  - Individual and Dual
    - Stunts and Tumbling
    - Wrestling
    - Boxing

## CHAPTER 7

## FACILITIES AND EQUIPMENT

Small gymnasia and a lack of equipment are two handicaps frequently met in the Iowa high schools. The material in this chapter is an attempt to aid in the solution of these problems.

In many places, for example, with meager facilities, if a number of boys desire to play such games as basketball and volleyball indoors, only a few of them can play at one time, and a group has to wait. This situation may be largely remedied in the following manner:

1. *Basketball.*—Arrange two courts crosswise of the gymnasium, putting the baskets against the side walls, if necessary, to get more length. Play two games on each court, according to the instructions in the game of one goal basketball on page 184. In this way, with the two courts, eight teams may be playing at one time, and with all of the boys participating. In other words, forty boys may be playing at one time.

2. *Volleyball.*—Two courts may be drawn crosswise of the gymnasium. If the gymnasium is not sixty feet wide, end lines and side lines (continuation of the side lines painted on the floor) may be painted upon the rear wall. In volleyball, the rear row never stands on the end lines but a distance in front of them. In the crosswise game, they stand nearer to the end wall. If the ball strikes the side wall below the line representing the end line, the ball is counted as good. The height of these lines on the wall will vary with the width of the gymnasium. A good way to determine the height of these lines on the wall is to station observers at the point on the side lines of the volleyball court corresponding to the wall in the crosswise game while a game is being played lengthwise of the floor. These observers watch the height at that point of the balls that land in the court. After such observation, the height at which to mark the end lines on the wall may readily be determined with a high degree of accuracy.

Shuffleboard courts may be painted in halls, corridors, and locker rooms, or, in the larger gymnasium, outside the side lines on the gymnasium floor. If there is a gallery, some equipment for games may be provided there. Gymnasia should be built with some blank and smooth wall space where single-wall handball courts may be marked out, and where there may be some rallying of tennis balls against the wall. Markings for these games should be provided.

Box hockey may be played almost anywhere. It is a very noisy game, but may often be played while volleyball or basketball is under way. It can be played in any lighted space six by eight feet, and can keep some boys busy that might otherwise be idle for a short time.

*Lines on the Floor or Ground.*

Lines painted on the floor should be in different colors and sometimes of different widths. For example, lines for basketball should be black, and about two inches wide. Lines for badminton may be red and an inch wide; for volleyball, white and an inch wide; and for softball, green, with the base lines but half an inch wide. Temporary markings, as for goal-hi or for testing, may be painted on the floor with cold water paint, which dries in five minutes, wears well for a couple of weeks, and washes off readily with water.

Outdoor clay courts may have permanent lines made of crushed tile or brick, which are well rolled into the court surface. Grass areas may have

lines dug out of the sod, which can be reinforced with a liberal application of any good weed killer. (This effectively kills the grass as well as the weeds.)

Before equipment is purchased, it should be carefully investigated, and, in so far as possible, only first-class equipment should be purchased. Good apparatus, secured from the standard companies, should last for twenty years if it is adequately kept up. Cheaper apparatus is likely to deteriorate, and to be much more productive of accidents than is good apparatus. All apparatus should be checked at least once a month, and tightened up if there is any indication of looseness. Ropes should be tested for strength by having about three heavy boys hang on each one.

In purchasing mats, the purchaser should ask the manufacturer to tell exactly what the inside is made of. Mats of very slightly differing prices differ greatly in wearing qualities. If the mats are to be used out of doors, and are left there to be rained on, the fiber filled ones are best. For indoor use, the long staple goat hair filling is best. The trade names of fillers are often deceiving. Hence the *description* of the filler (with a sample) should be requested, not just the trade name. The way handles are fastened should be investigated.

There will probably be an increasing use of rubber covered balls after they are fully available again. The ones of better quality are as satisfactory as leather balls, and usually outwear leather ones two to one, especially for outdoor use. Rain does not hurt them in the least.

For badminton, "Flying Fleece" balls, manufactured by the Oregon Worsted Company, 8300 Southeast McLoughlin Boulevard, Portland 2, Oregon, are almost as satisfactory as the regular birds. They have the advantage of being inexpensive and of lasting for months.

For weight training with heavy weights, lifting platforms should be built to protect the floors. These are built seven feet square of two-ply one-inch boards. The two layers are at right angles to each other. They need not be painted. Benches for exercises done on the back should be four feet long, sixteen inches high, and one foot wide. The top should be well padded. Methods of making home made barbells are outlined in Chapter 10. If barbells are purchased, those manufactured by concerns specializing in this equipment are, at present, superior to those made by the standard apparatus manufacturers.

For indoor golf driving practice, if a golf driving cage is not available, yarn golf balls may be used. Practice with these is not as effective as practice in hitting the regular ball, but will do if there is no better alternative. A temporary driving cage can be made by hanging up a strip of canvas about ten feet wide and ten feet high. If the boys stand not over eight or ten feet away from it, there is little likelihood of the balls hitting beyond those boundaries. The canvas should not, of course, rest against a wall. To protect the floor, a fiber door mat should be used from which to drive.

For deck tennis, if the regular rubber rings are not obtainable, a good substitute may be made from either a piece of three-quarters inch rope or a piece of hose bent in a circle, with the ends securely fastened together. If a rope is used, it should be covered with adhesive tape to keep it from burning the hands.

*Height of Nets*

| | Height at Posts | Height at Center |
|---|---|---|
| Aerial Tennis Dart | 7 ft. 3 in. | 7 ft. |
| Badminton | 5 ft. 1 in. | 5 ft. |
| Deck Tennis | 4 ft. 10 in. | 4 ft. 8 in. |
| Paddle Tennis | 2 ft. 9 in. | 2 ft. 6 in. |
| Tennis | 3 ft. 6 in. | 3 ft. |
| Volleyball (Men) | 8 ft. 3 in. | 8 ft. |
| Volleyball (Women) | 7 ft. 9 in. | 7 ft. 6 in. |

(For junior high school boys and groups of other boys not over five feet six inches in height, the girls' height of net is recommended for volleyball. The lower height is more favorable to learning the more scientific type of spiking game.)

*Distance for Horseshoes*

Boys—40 feet from stake to stake.
Girls—30 feet from stake to stake.

For diagrams of commonly used playing fields, see Figures 2 to 17.

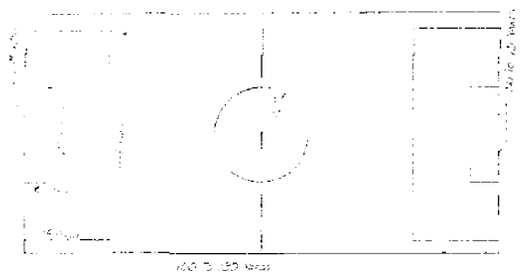


Fig. 2. Soccer Football

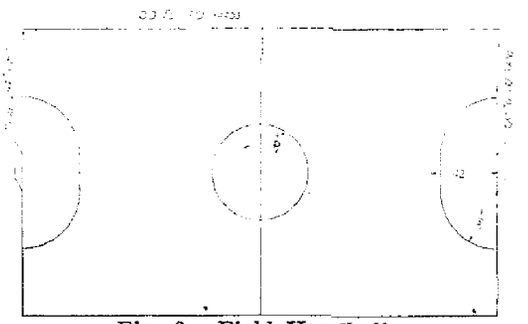


Fig. 3. Field Handball

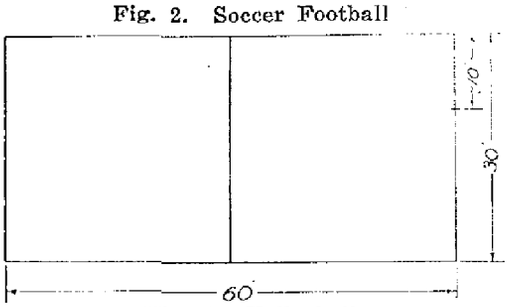



Fig. 4. Volleyball

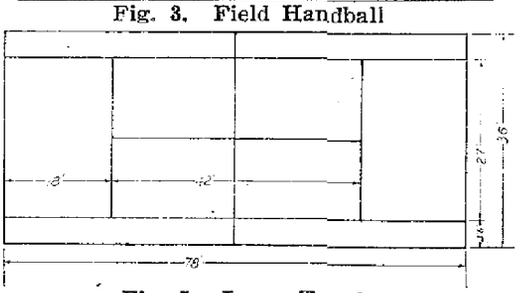


Fig. 5. Lawn Tennis

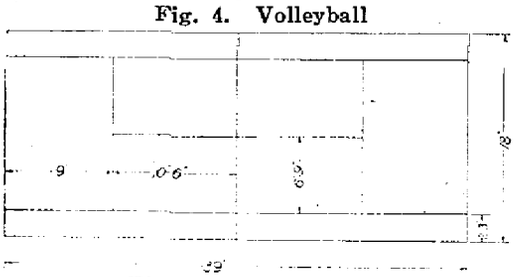


Fig. 6. Paddle Tennis

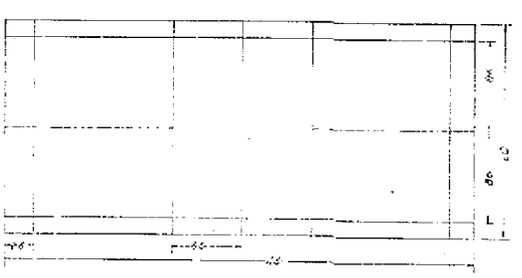


Fig. 7. Badminton

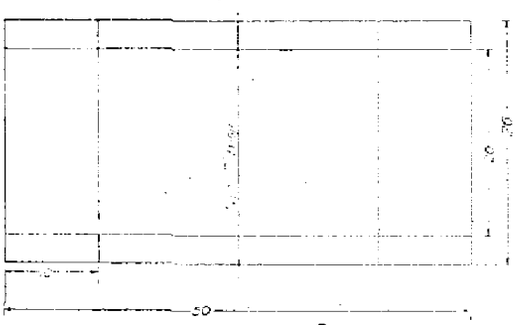


Fig. 8. Aerial Tennis Dart

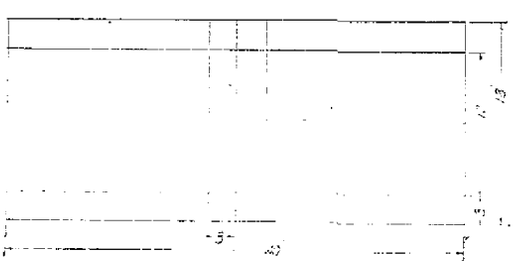


Fig. 9. Deck Tennis

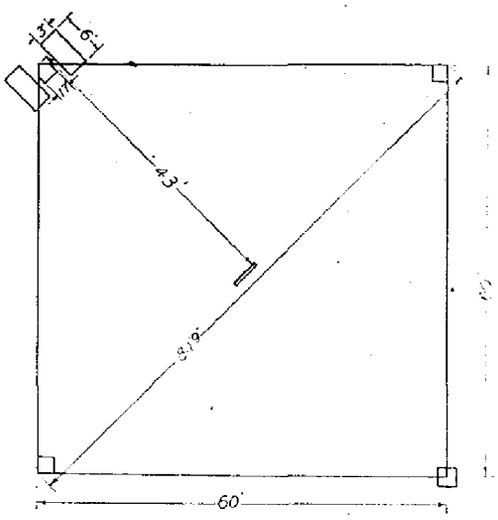



Fig. 10. Softball

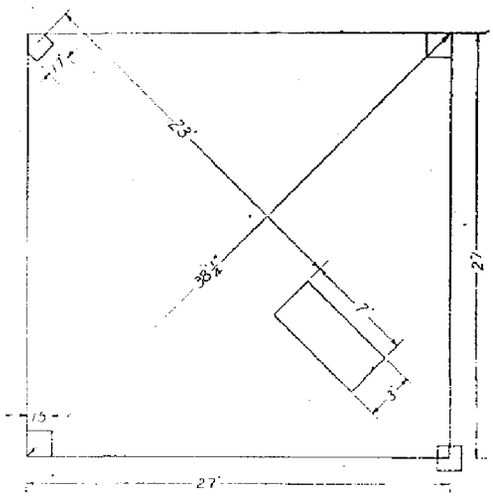



Fig. 11. Indoor Softball

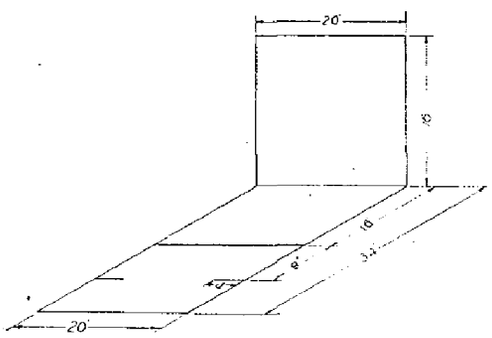



Fig. 12. One Wall Handball

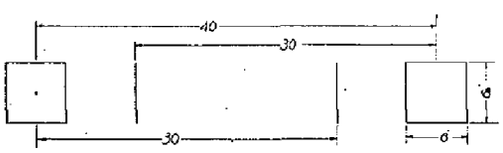



Fig. 13. Horseshoe Pitching Court

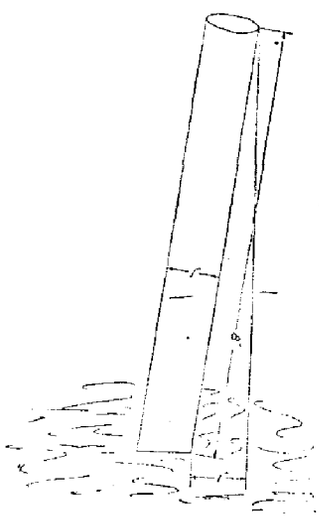


Fig. 14. Horseshoe Pitching Stake

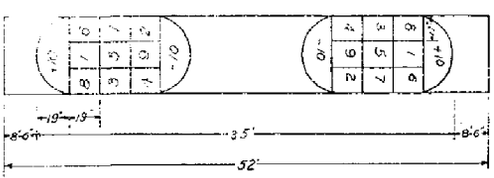



Fig. 15. Shuffleboard

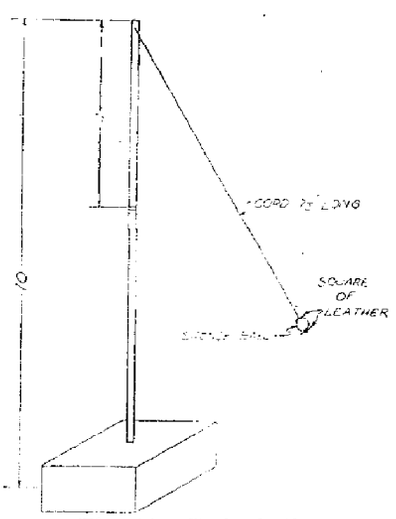



Fig. 16. Tetherball

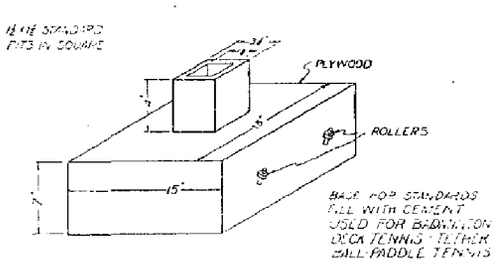



Fig. 17. Base for Standards

# PART II

# TRAINING ACTIVITIES

## CHAPTER 8

## MARCHING

In teaching marching in the gymnasium class the instructor has, and should keep, several objectives in mind:

1. To teach the boys the fundamental commands and movements which will enable the instructor to move them quickly and effectively to the places where they will carry on various activities, especially the training activities.
2. To enable the instructor to have orderly control over the class at any time, especially when giving explanations for the activity of the period.
3. To provide a method of teaching proper body carriage, mental alertness, attention, and the execution of commands while the pupils are moving.
4. To provide a warm-up drill and prepare the class both physically and mentally for the activity of the rest of the period.

Marching, along with the facings, is the first thing that should be taught to a class in the early meetings. During this time, from ten to fifteen minutes of every period should be devoted to this part of the program. After adequate skill has been attained, then marching may be used only as necessary or desired. A brisk workout may be provided by marching, especially if the marching is done out of doors and if use is made of double-time and precision drills.

Before the instructor attempts to teach marching, he should familiarize himself with the necessary commands and get practice in giving them.

## PRECISION DRILL

The precision drill is essentially a non-regulation drill designed to develop snap and coördination in the infantry drill. It further serves to keep the boys mentally alert and interested, thus being an ideal drill for exercises in the gymnasium or on the athletic field.

The precision drill is an application of the fundamental marching movements with shortened commands that not only give snap, but simplify the drill.

### *Cadence*

The cadence for the precision drill is increased from the regulation 120 thirty-inch steps a minute to 135 thirty-inch steps a minute. This cadence makes the drill snappy and keeps the boys alert and attentive.

### *Commands*

In the precision drill the commands are given in an ordinary tone of voice sufficiently loud for every boy in the class to hear. A raised voice permits the boys to relax, whereas an ordinary tone of voice requires their complete attention.

The commands are shortened to quicken the execution of the drill and to make possible a series of movements in cadence. These shortened commands should not be confused with the regulation drill commands.

### *Forming for Precision Drill*

The boys fall in line, and "dress" by extending the left arm and touching the shoulder of the boy to the left. The command for "dressing" is, "Dress Right, Dress." Each boy except the one on the right flank, turns his eyes and head to the right, and each boy extends his left arm to the side horizontal. The distance between the ranks is an arm's length. The command for the return to attention is "Ready, Front." In this formation the boys may be marched in any direction, with a normal walking interval being maintained.

*Fundamental Movement*

Before the precision drill is given to a class, the boys should be taught the simple facing movements, left and right flank, to the rear march, left step, right step, backward step, and oblique movements. After these fundamental movements have been learned, the class should be given the precision drill to speed up the execution of the fundamental movements.

*Precision Drill*

The precision drill should be started by marching the boys off at a 135-step cadence and keeping the cadence count, preferably with the use of a singsong, such as "Halup— halup— hope—heap." Flank and rear march movements should then be given in cadence as follows:

STEP IN MARCHING

| | *Left* | *Right* | *Left* | *Right* | *Left* | *Right* |
|---|---|---|---|---|---|---|
| Command | Left | Flank, | March! | | | |
| | | Right | Flank, | March! | | |
| | Rear, | March! | | | | |

When the platoon has learned to execute the individual movements as above, a series of movements should be given in succession as follows:

STEP IN MARCHING

| | *Left* | *Right* | *Left* | *Right* | *Left* | *Right* |
|---|---|---|---|---|---|---|
| Command | Left | Flank, | March, | Right | Flank, | March, |
| | Rear, | March, | Rear, | March. | (Cadence count to be picked up immediately) | |

It is important to note that the preliminary command for a left flank movement is started on the left foot, for a right flank on the right foot, and for rear march on the left foot. Other movements on the march are as follows:

1. Series of flank and rear march movements, with halt and forward march in cadence
2. Left and right steps and backward march
3. Squads rear march movement, starting command on left foot
   First squad rear march
   Second squad rear march
   Third squad rear march
   Fourth squad rear march
   First squad rear march
   Second squad rear march
   Third squad rear march
   Fourth squad rear march

   This series of commands will bring all the squads back into position.
4. Heels, March. All hands execute rear march twice—halt and forward march in cadence
5. To the Winds, March. (To be given only when the platoon is marching in a column—march to be given on the left foot.)
   First squad does a left flank
   Second squad continues the march
   Third squad does a rear march
   Fourth squad does a right flank

On command—Rear, March, all hands rear march and as they come together into position—

First squad does a left flank
Second squad does a rear march
Third squad continues the march
Fourth squad does a right flank

From a halt the class may be given a rear march movement, with all the hands taking one full step forward with the left foot, and rear marching in cadence. A well drilled class looks snappy on the command, "Platoon, Halt—Forward, March" in cadence.

The command may also be given "In Cadence, Count," the "Count" coming on the right foot. All hands in the platoon will count, "One, two, three, four, left, right, left, right."

The best results can be obtained if simple movements easily learned are given and if every effort is concentrated on the perfection of these movements. The precision drill should be snappy and with frequent rest periods. Emphasis should be placed on the perfect execution of every movement by every boy in the platoon.

*Kinds of Commands*

(1) The preparatory command, such as "Forward," which indicates the movement that is to be executed.

(2) The command of execution, such as *"March,"* or *"Halt."*

The preparatory command is given at such an interval before the command of execution as to admit the proper understanding of the meaning of the command; the command of execution is given at the instant the movement is to begin.

The tone of the command should be animated, distinct, and loud in proportion to the size of the class.

If the class is at a halt, the commands for movements involving marching, such as "Column right, *March,*" are not prefaced by the command "Forward."

*Instruction by the Numbers*

All movements for the purpose of instruction may be divided into parts and executed in detail. All parts, depending on the number, are executed at the commands, "One, two, three, four." For the execution of the movement in detail, the instructor first cautions, "By the numbers." All movements are then executed in detail, one motion for each count until the instructor cautions, "Without the numbers."

*Mass Commands*

Mass commands assist the boys in overcoming diffidence, timidity, and awkwardness. They help to develop confidence, self-reliance, assertiveness, and enthusiasm. They require the boys to rely upon their own initiative and intelligence in order both to give commands correctly and to execute properly the movement required by the command. They develop proficiency by making each boy his own drill instructor, and through their use the benefits of individual instruction may be transmitted to large masses.

Each boy is required to give the commands as if he alone were giving them to the entire unit. The volume and smash of combined voices impel each boy to extend himself to the limit of performing the movements with snap and precision. Giving the commands in unison results in an early development of coördination and in a sense of cadence in the boy.

Each movement should be explained in detail and illustrated before it is attempted by the mass. The necessary commands for putting the required movement into operation should be rehearsed, without the movement being

performed, until the mass has learned to give the command properly. When this has been accomplished, the movement should be performed at the command of the mass.

The interval between the preparatory command and the command of execution will depend upon the number of boys being drilled and upon their degree of proficiency. Care must be exercised that this interval is not too short.

Instructors should give their preparatory commands with a rising inflection, lifting the entire class with an intonation that rouses the boys and makes them eager to respond when the command of execution is given. In no other phase of training is the quality of instruction as accurately reflected as in mass commands, because of the natural emulation of the instructor by the student.

Mass commands in drill are usually confined to simple movements: those requiring short preparatory commands and commands of execution, and those which are executed simultaneously by all elements of the class. No movement which requires a repetition of the preparatory command by subordinate leaders or instructors is applicable to mass commands.

The instructor first describes the exercise to be executed, and then gives the instructions necessary to the movements or to the cadence of the exercise. He then causes the mass to give the necessary command to put the exercise into operation.

1. Instructor: Call the class to attention
   *Command*
2. Mass: 1. Class, 2. *Attention*
1. Instructor: Face the class to the right
   *Command*
2. Mass: 1. Right, 2. *Face*

GENERAL PROCEDURE

In organizing a class to teach marching, the instructor should group the class into three or four equal squads, with the tall boys on the right. The normal formation of the squad is a single rank or single file. This formation permits variation in the number of boys composing the squad. The squad facing the instructor is known as the first squad. The middle or second squad is next, and the rear or third squad is last. The boys' places in this line-up should be permanent.

1. *Fall In.*—The command given by the instructor for the boys to group themselves into their positions in squads is "Fall in."

2. *Alignment.*—1. Dress right, 2. Dress.

At the command "Dress," each boy, except the one on the left, extends his left arm (or if at a close interval, places his left hand upon his hip), and each boy lines himself to the right. The instructor places himself on the right flank and faces down the line. From this position he verifies the alignment of the squads, ordering individuals to move forward or back as is necessary. Having checked the alignment, he faces to the right in marching and moves three paces forward, halts, faces to the left, and commands: 1. "Ready," 2. "Front." At the command, "Front," the arms are dropped quietly and smartly to the sides and the heads turned to the front.

POSITIONS

1. *Position of attention*

   a. The heels on a line and as near each other as the comformation of the body permits

   b. The feet turned out equally and forming an angle of forty-five degrees

c. The knees straight without stiffness

d. The hips level and drawn back slightly, the body erect and resting equally on the hips, the chest lifted and arched, and the shoulders square and falling equally

e. The arms hanging naturally so that the thumbs are along the sides of the legs, the backs of the hands out, and the fingers held naturally

f. The head erect and squarely to the front, the chin in, and the eyes straight to the front

g. The weight of the body resting equally on the heels and on the balls of the feet

2. *Facings*

a. 1. Right (left), 2. Face.

At the command, "Face," slightly raise the left heels and the right toes. Face to the right, turning on the right heels, assisted by a slight pressure on the ball of the left foot. Hold the left leg straight without stiffness. Then place the left foot beside the right.

b. 1. Left, 2. Face. (To be executed on the left heel in a corresponding manner)

c. 1. About, 2. Face.

At the command, "Face," carry the toes of the right foot the length of half a foot to the rear and slightly to the left of the left heel, without changing the position of the left foot. The weight of the body is mainly on the heel of the left foot, the right leg is straight without stiffness. Then face to the rear, turning to the right on the left heel and on the ball of the right foot; place the right heel beside the left.

STEPS AND MARCHING

*General*

a. Execute all steps and marchings from the halt, except the right step. Begin with the left foot.

b. The instructor indicates, when necessary, the proper cadence by calling "One, two, three, four," as the left and the right foot, respectively, strike the ground.

*Quick Time*

Being at a halt, to march forward in quick time—the commands are: 1. Forward, 2. March. At the command "Forward," shift the weight of the body to the right leg without perceptible movement. At the command "March," step off smartly with the left foot and continue the march with thirty-inch steps taken straight forward without stiffness or exaggeration of movements. Swing the arms slightly and easily in their natural arcs, six inches to the front and three inches to the rear of the body.

*Double Time*

a. Being at a halt or in march in quick time, to march in double time—the commands are: 1. Double time, 2. *March.*

(1) If at a halt, at the command, "Double time," shift the weight of the body to the right leg without perceptible movement. At the command, "March," raise the forearms, the fingers closed, the knuckles out, to a horizontal position along the waistline; take up an easy run with the step and cadence of double time, allowing a natural swinging motion to the arms.

(2) If marching in quick time, at the command, "March," given as either foot strikes the ground, take one more step in quick time and then step off in double time.

b. To resume the quick time from double time—the commands are: 1. Quick time, 2. *March.* At the command, "March," given as either foot strikes the ground, advance and plant the other foot in double time: resume the quick time, dropping the hands by the sides.

HALT

a. To halt when marching in quick time—the commands are: 1. Class, 2. *Halt.* At the command, "Halt," given as either foot strikes the ground, execute the halt in two counts by advancing and planting the other foot and then bringing up the foot in the rear.

b. To halt when marching in double time—the commands are: 1. Class, 2. *Halt.* At the command, "Halt," given as either foot strikes the ground, advance and plant the other foot as in double time; then halt in two counts as in quick time.

c. To halt from side step—the commands are: 1. Class, 2. *Halt.* At the command, "Halt," given as the heels are together, plant the foot next in cadence and come to the halt when the heels are next brought together.

*Mark Time.*—The commands are: 1. Mark time. 2. *March.*

a. Being in march, at the command, "March," given as either foot strikes the ground, advance and plant the other foot; bring up the foot in rear, placing it so that both the heels are on the line, and continue the cadence by alternately raising and placing each foot. The feet are raised two inches from the ground.

b. Being at a halt, at the command, "March," raise and plant first the left foot, then the right as prescribed above.

c. Mark time may be executed in either quick time or double time.

d. The halt is executed from mark time as from quick time or double time by the boys taking two-inch vertical in place of thirty-inch horizontal steps.

Forward, Halt, and Mark Time may be executed one from the other in quick time or double time.

*Half Step*

a. The commands are: 1. Half step. 2. *March.* At the command, "March," take fifteen-inch steps in quick time. The half step is executed in quick time only.

b. To resume the full step from half step or mark time the commands are: 1. Forward, 2. *March.*

*Side Step*

a. At a halt, the commands are: 1. Right, (left) step, 2. *March.* At the command, "March," carry the right foot twelve inches to the right; place the left foot beside the right, the left knee straight. Continue in the cadence of quick time.

b. The side step is executed in quick time from a halt and for short distances only.

*Back Step*

a. At a halt, the commands are: 1. Backward, 2. *March.* At the command, "March," take fifteen-inch steps straight to the rear.

b. The back step is executed in quick time from a halt and for short distances only.

*Face in Marching.*—The facings in marching are an important part of movements, such as Column Right, Close, Take Interval, and Extend.

a. To face to the right in marching and advance from a halt, at the command of the execution of the movement, turn to the right on the ball of the right foot and at the same time step off in the new direction with the left foot with a half step, full, or in double time, as the case may be.

b. To face to the right in marching and advance, being in march, at the command of execution, given as the right foot strikes the ground, advance and plant the left foot; then face to the right in marching and step

off in the new direction with the right foot with a half step, full step, or in double time, as the case may be.

c. To face to the rear in marching, being in march: 1. To the rear, 2. *March.* At the command, "March," given as the right foot strikes the ground, advance and plant the left foot; turn to the right about on the balls of both feet and immediately step off with the left foot.

*March by Flank.*—In march the commands are: 1. By the right (left) flank, 2. *March.* At the command, "March," given as the right foot strikes the ground, advance and plant the left foot, then face to the right in marching, and step off in the new direction with the right foot.

*Change Step.*—The commands are: 1. Change step. 2. *March.*

a. Being in march in quick time, at the command, "March," given as the right foot strikes the ground, advance and plant the left foot; plant the toes of the right foot near the heel of the left, and step off with the left foot.

b. Execute the change on the right foot similarly.

CHAPTER 9

# CONDITIONING EXERCISES

*Evaluation of Conditioning Exercises in the Total Conditioning Program*

Conditioning exercises, sometimes called "calisthenics," constitute a widely used activity in any physical education program that emphasizes physical conditioning. Conditioning exercises have a number of advantages: (1) they may be conducted anywhere, (2) they may be executed without equipment, (3) they are readily adaptable to any size of group, (4) they may be easily adapted to individual physiological differences, (5) they may be regulated for dosage and progression, and (6) if properly selected, they may reach and exercise any desired muscle group in the body.

*Arrangement of Exercises in Set Drills*

There are literally thousands of possible exercises. From this vast number three sets of freehand exercises, and two sets of exercises with heavy bells, iron wands, or guns are presented in this manual. These exercises have been selected because (1) they reach all fundamental muscle groups of the body, (2) they are easy to learn and to perform, and (3) they are simple to administer and to supervise. They are arranged in the proper sequence to secure the best results. It is essential, therefore, that each set be performed in the order prescribed.

Since several of the exercises in four of the drills are executed from a supine position, appropriate exercises are included for substitution when it is impracticable for the boys to lie down. Other substitutions are not recommended.

Of the three sets of freehand drills provided, the first set is considerably easier and less demanding than the others, and is well adapted to use in junior high schools. The other two sets are selected to provide variation in the program. They are approximately equal in value and severity, but the exercises of the second of these two drills are slightly more difficult in coördination.

*Use of the Different Drills*

The teacher may adopt one drill and not use any of the other drills. If more than one drill is used, the drills should not be alternated from day to day, but one drill should be used for several months before another is introduced. Since each exercise in each set bears a relationship to all other exercises in the same drill, the exercises of the different drills should not be interchanged.

Two of the drills presented are of such a nature that they may be used with rifles if ROTC weapons are available. They may also be used with boy scouts' staves or with iron wands. The first of these drills has no exercises executed in the supine position.

If further variety is desired, the conditioning exercises may be supplemented by other forms of activities, such as by barbells (see Chapter 10).

*Necessity for Precision and Accuracy*

Since these conditioning exercises may lose much of their exercise value unless performed exactly as prescribed, considerable time and effort should be expended in the early days of the semester to teach the proper execution of all the exercises.

*Conducting Conditioning Exercises*

The exercises of the conditioning drills should be executed in continuous fashion. Each exercise has been given a nickname. After having performed the exercises a number of times, the boys are usually able to complete the entire drill with only enough pause between the exercises for the instructor to indicate the next exercise by name. This method of conducting the exercises intensifies the work load and conserves time.

After the boys have learned the exercises and know how to execute them properly, the exercises should be given rhythmically, with the cadence indicated by the instructor, by a leader, or by the entire group. The cadence will differ for the different exercises, being faster in some exercises than in others. It is recommended, where possible, that the exercises be done to the accompaniment of music. Some of the exercises, such as push-ups, squat jumps, and rowing exercises, may on occasion be executed at will. In this case the instructor merely indicates the number of repetitions to be done, and as soon as the boys have completed this number, they stand at ease. This method is frequently used when the exercises that are sometimes used as test exercises are executed.

*Progression*

In order to insure proper progression in the conditioning exercise program, it is necessary to know how much exercise is given from day to day. The relative amount of exercise, or the dosage of the conditioning exercises, can be accurately determined if the cumulative count is used. In this method the exercises are given in four-count movements (a two-count exercise is thus given twice), and the number of the repetition is indicated on the fourth count: 1-2-3-*1*; 1-2-3-*2*; 1-2-3-*3*; 1-2-3-*4*. The use of the cumulative count is strongly recommended. (1) It provides the instructor with an excellent method of counting the number of repetitions performed. (2) It enables the instructor to make the exercises progressive from day to day and from week to week. (3) It serves as a sub-testing and motivating device. The boys like, in the first place, to know how much they are expected to perform and, in the second place, to continue to show improvement. (4) It provides a method of prescribing an exact dosage of exercise for any group, even when conducted by untrained personnel. If the boys start by executing six four-count repetitions of the exercises, they can gradually increase the repetitions until they reach the recommended standard, which might well be as follows for the four major drills:

| Week | Repetitions | Rest after |
|---|---|---|
| 1 | 6 | Every exercise |
| 2 | 7 | Exercises 2,4,6,8,10 |
| 3 | 8 | Exercises 3,6,9 |
| 4 | 9 | Exercises 3,6,9 |
| 5 | 10 | Exercises 4,8 |
| 6 | 11 | Exercises 4,8 |
| 7 | 11 | Exercises 4,8 |
| 8 | 12 | Exercise 6 |
| 9 | 12 | Exercise 6 |
| 10 | 14 | Exercise 6 |
| 11 | 14 | Exercise 6 |
| 12 | 16 | Exercise 6 |

During the first week, the period of rest after each exercise may be utilized by the instructor for purposes of explanations, suggestions, and demonstrations of the next exercise. Because of the fact that the rest periods are diminished in number, even though the number of repetitions is increased,

the total time devoted to conditioning exercises will diminish from week to week. Even with the full number of sixteen repetitions, the class will usually be able to finish the drill in fifteen minutes. Usually not over twelve repetitions should be given in the junior high school.

*Warming-Up*

Warming-up exercises are necessary when the physical training activities are strenuous, or are conducted in cool or cold weather. In general, a warm-up is desirable unless vigorous activities have been participated in immediately before the physical training period. Whenever it is practicable, the boys should be warmed up by double timing—jogging out to the exercising area or maze running in the gymnasium. If this procedure is not feasible, a warm-up drill may be used. A drill of this type is presented below (see p. 52). Usually these exercises should not be continued beyond four to six repetitions each, except the stationary run, which may be done for twenty to forty steps.

*Commands*

In teaching new conditioning exercises, the instructor may use two methods of giving commands. The exercise should first be taught according to *command*. In this method there are (a) a *preparatory command*, which describes the exercise, (b) a *pause*, and (c) a *command of execution*. The command of execution is a verb; for example, "Arms sideward, *swing*." The word "swing" is the command of execution. In this method of instruction the movement itself is not begun until after the command of execution has been given.

After the exercises have been learned, they are done in rhythmic cadence. In this method there are (a) a *preparatory command*, (b) a *pause*, and (c) a *command of execution*. The command of execution is usually the verb "begin." After the command of execution has been given, the movement begins immediately, and the instructor then counts out the cadence. Each *count* coincides with the *end* of a movement in the exercise, just as would be the case with beating time in music. Eventually the name of the exercise may be substituted for the preparatory command. When the boys know the preliminary positions for each exercise, these commands may be simplified. For example, "Push-ups—position! One — Two — Ready — Begin! 1-2-3-1; 1-2-3-2 . . . . ." If the term "position" is a command of execution for assuming the starting position for doing push-ups, this position is taken in two counts. "Ready" is then a second preliminary command, and "begin" is the command of execution. To end an exercise, the instructor commands, "Class—Halt." This command is given on the last two counts of the exercise; for example, if eight repetitions are being given, the counts for the last two will be "1-2-3-7; 1-2-Class-Halt." The group then maintains that position until the next command. In the continuous method of giving the exercises, the next preparatory command may be the name of the next exercise. In all other respects the methods of giving commands follow the precedent set in commands given for marching.

## TERMINOLOGY

*Conditioning Exercises—Freehand*

1. *Directions.*—In all gymnastics the directions are with reference to clock hands. Forward and backward movement is with reference to a clock hung on the left wall, facing the performers left side. Clockwise is forward; counterclockwise is backward. Right and left movement is with reference to a clock hung in front of the performer (for side bends) or face up (in rotations). Clockwise is right; counterclockwise is left.

2. *Hands on hips.*—Hands are placed just over the crests of ilia, thumbs to the rear elbows backward.
3. *Hands behind head.*—Hands are placed behind head, fingers interlaced, elbows well back, and head erect.
4. *Arms downward.*—Arms are by the sides. (Note: In arm positions, the position of the arms is with reference to the body *as it would be in a standing position.* Thus *arms downward* when the boy is lying on his back is arms by sides).
5. *Arms forward.*—Arms are parallel and at the forward horizontal position.
6. *Arms sideward.*—Arms are in line, and held horizontally out at the sides at shoulder level.
7. *Arms upward.*—Arms are parallel and upward, in line with trunk.
8. *Arms to thrust.*—Upper arms are backward to a position about forty-five degrees to the vertical, and forearms are flexed forward to the horizontal. Fingers are closed to a fist, and palms may be up or inward, according to directions. If it is not specified, palms are inward toward chest.
9. *Side straddle position.*—Feet are separated sideways about 2½ feet.
10. *Squat rest.*—Knees are fully bent and separated, and hands are on floor, shoulder width apart in front of feet. Fingers are pointed forward.
11. *Full knee bend.*—Full squat downward, heels raised, trunk erect, and thighs approximately horizontal and slightly separated.
12. *Trunk forward bend.*—From any position, trunk bends forward from hips. Spine bends forward during the movement.
13. *Trunk sideward bend.*—From any standing position, trunk is inclined to the side from pelvis. Spine bends sideward during the process.
14. *Trunk backward bend.*—From the standing position—spine is hyper-extended and whole trunk bends backward. *The most of the bend should be in upper spine,* not in lumbar spine. Chest should be very strongly elevated.
15. *Trunk rotation.*—From the standing position—thorax is turned to the indicated side, rotating with reference to pelvis. In most trunk rotation there is also an accompanying rotation in the hip joints.
16. *Trunk rotate and bend.*—Here trunk first rotates, and then bends forward over the hip on the indicated side.
17. *Front leaning rest.*—In this position toes and hands are on the floor, legs and trunk in a straight line, face downward, and arms vertical beneath shoulders.

RIFLE POSITIONS

1. *Rifle (wand) downward.*—Arms are downward and the rifle is horizontal, resting against fronts of thighs, muzzle to the left.
2. *Thrust position.*—The rifle is in front of shoulders, with upper arms downward, and elbows completely flexed.
3. *Overhead position.*—Arms are vertical, and rifle is horizontal over head, parallel to lateral axis of the body.
4. *Low front horizontal.*—Trunk is bent forward, and the rifle is horizontal, parallel to lateral axis, and in front of the designated part—as knees or ankles.
5. *Low side horizontal.*—With trunk bent forward, or rotated and bent forward, the rifle is horizontal, parallel to the forward-backward axis, and by the side of one ankle.
6. *Extended low horizontal between legs.*—Feet in side straddle position, rifle between legs, parallel to the ground, and pointing forward and backward.
7. *Front perpendicular.*—Arms are forward, one arm forward-upward oblique and the other forward-downward oblique; the rifle is vertical, in front of chest.
8. *High side perpendicular.*—One arm is upward, and with hand from the opposite side in front of arm pit of vertical arm. The rifle is vertical, parallel, and in contact with the upward arm.

Abbreviations—

S. P.=Starting position.
Mov.=Movement.

## WARM-UP DRILL

1. *Stork Walk*

S. P.—Attention.
Mov.—Execute a slow, powerful, stationary walk, lifting knees high, and arms swinging in a larger and larger amplitude until they are swinging almost to the vertical on the up swing, and downward and backward past the hips on the down swing. (Four to eight four-count repetitions.)

2. *Backfield Crouch*

S. P.—Feet apart about eighteen inches; otherwise as at attention.
Mov.—a. Squat until fingers are on the ground about twelve to eighteen inches in front of feet, knees bent, back straight, and head looking up.
b. Return to original position.
c. Repeat *a*.
d. Repeat *b*. (Four to eight repetitions.)

3. *The 440*

S. P.—Erect, arms at thrust, fists lightly clenched.
Mov.—Stationary running. Begin slowly, but speed up somewhat, raising knees to the height of hips; then run for a while at full speed, raising knees very hard; then slow down.

4. *The Bobber*

S. P.—Side straddle.
Mov.—a. Bend forward and reach hands to the ground between feet.
b. Relax slightly, and "bob" again, reaching out about six inches farther forward.
c. Again relax and "bob" downward, reaching forward about twelve inches or more.
d. Recover original position.

In executing this exercise, the boys should go down only so far as they can without strain, going down farther and farther with each succeeding repetition, until the back and the backs of the legs have been limbered up. (Four to six repetitions.)

## CONDITIONING DRILLS

### CONDITIONING DRILL I*

1. *Crow Hopper*

S. P.—Trunk leaning forward, knees slightly bent, feet parallel and separated about twelve inches, arms raised backward.
Mov.—a. Swing arms forward and upward to about the height of shoulders, and execute a small upward jump.
b. Swing arms downward and backward, and execute another small jump upward.
c. Repeat *a*.
d. Repeat *b*.

* Some of these exercises are executed with the boys sitting or lying down. Alternative exercises are given for use when the drill may be given outside and when the ground conditions may be unfavorable.

The jump in this exercise is a very low one, only a few inches off the floor. When the boys are in good enough condition and are well warmed up before beginning the drill, they may either jump a little higher or may bend the knees more with each arm swing just preceding the jump. This movement is much like the preliminary arm swing of the standing broad jump, with a crow hop on each upward arm swing. The movement of the arms is continuous like the swing of a pendulum.

2. *Turn and Punch*

S. P.—Feet in wide side straddle position; arms to the thrust.

Mov.—a. Rotate trunk to left, and bend forward over left leg, at the same time bending left knee and executing a punching or striking movement with right fist outside and in front of left foot.

b. Rotate trunk to right without straightening up, and punch outside and in front of right foot with left hand, returning right arm to thrust position, straightening left knee and bending right knee.

c. Rotate trunk to left without raising it up, and repeat punch with right hand outside left foot.

d. Recover to starting position.

(On alternate repetitions start on opposite side.)

3. *Reach and Twist*

S. P.—On back, feet separated about twenty-four inches, hands on tops of thighs.

Mov.—a. Sit up, reach across with right hand, and touch toes on left foot.

b. Recover to starting position.

c. Repeat *a*, touching left hand to right foot.

d. Recover to starting position.

(The cadence of this exercise is slow.)

*or*

3a. *Reacher-Upper*

S. P.—Arms upward, feet together.

Mov.—a. Reach as high as possible upward and backward, raising chest high, looking upward, with head back, tightening the muscles of abdomen, and rising high on toes.

b. Recover to starting position.

c. Repeat *a*.

d. Recover to starting position.

(The cadence of this exercise is very slow. The fact should be emphasized that the back bend is primarily in the thoracic spine, not in the lumbar spine.)

4. *Breaking Chains*

S. P.—Erect, elbows at side horizontal, hands in front of shoulders, palms down, and fists clenched.

Mov.—a. Pull elbows back hard as though trying to break a chain held between the two hands.

b. Relax the tension slightly without returning to starting position. Then pull arms backward again.

c. Repeat *b*.

d. Recover to starting position.

(The cadence of this exercise is very slow and the movement very powerful. Chin should be pulled in, head should be erect, and the movement should be done with a steady pull, not with a jerk.)

5. ***Rowing Exercise***

S. P.—On back, arms upward, feet together.
Mov.—a. Sit up, and at the same time bend knees sharply; lean forward, thrusting or swinging arms forward to a rowing position, with knees together and against chest, and feet flat on the ground, heels close to buttocks, arms extended forward.
b. Recover to starting position.
c. Repeat *a*.
d. Repeat *b*.

*or*

5a. *Front Kick*

S. P.—Arms sideward, palms up, feet together.
Mov.—a. Swing left leg forward, with knee straight, until foot is approximately the height of shoulders. At the same time swing arms forward, touching foot on either side with hands. Right knee may be somewhat bent.
b. Recover to starting position.
c. Repeat *a* with right foot.
d. Recover to starting position.

6. *Push-ups*

S. P.—Front leaning rest.
Mov.—a. Bend elbows and touch chest to floor, keeping body straight from shoulders to knees.
b. Straighten elbows, raising body to front leaning rest.
c. Repeat *a*.
d. Repeat *b*.

7. *Squat Swing-up*

S. P.—Erect, arms upward, feet separated about twelve inches.
Mov.—a. Drop to squat rest position, fingertips on floor between feet.
b. Recover to starting position, with forward-upward swing of arms, accompanied by a very strong chest lift.
c. Repeat *a*.
d. Repeat *b*.

8. *V-ups*

S. P.—On back, palms down, arms resting on ground, abducted from sides of body from forty-five to sixty degrees.
Mov.—a. Sit up with trunk, and at the same time raise legs, with knees straight, until trunk and legs form a V. Hands remain on the floor for balance.
b. Recover to starting position.
c. Repeat *a*.
d. Repeat *b*.

*or*

8a. *"How"* (Indian Greeting)

S. P.—Erect.
Mov.—a. Swing left arm diagonally forward and sideward to upward position, at the same time looking upward and raising chest high (bending trunk backward diagonally to the right, and sliding right hand down the back of right thigh. Stretch hard upward and backward with left hand.
b. Recover to starting position.
c. Repeat *a* to opposite side.
d. Recover to starting position.

9. *Side Bend*

S. P.—Feet in side straddle position, hands behind head, chest high.

Mov.—a. Bend sideward left, keeping knees straight.
b Recover to starting position.
c. Bend sideward right.
d. Recover to starting position.

10. *The Bobber*

S. P.—Side straddle.

Mov.—a. Bend forward with knees straight, and touch floor between feet with fingers.
b. Relax slightly, and "bob" downward again, touching floor from six to eight inches farther forward.
c. Repeat *b*, touching floor still farther forward.
d. Recover to starting position.

11. *The 440*

S. P.—Erect, arms at thrust, fists lightly clenched.

Mov.—Stationary running. Begin slowly, but speed up somewhat, raising knees to the height of hips; then run for a while at full speed raising knees very hard; then slow down.

(The total time spent should be from thirty seconds to one minute.)

12. *Stair Climber*

S. P.—Erect.

Mov.—Execute a stationary walk, lifting knees to the height of hips and swinging arms momentarily. Breathe deeply in cadence with the steps, two steps while inhaling, two while exhaling.

(This exercise may be executed continuously with the end of *The 440*, in which case the change from the stationary run to the stationary walk is usually made in four steps.)

CONDITIONING DRILL II

1. *The High Jumper*

S. P.—Feet separated about twelve inches, knees slightly bent, body bent forward about forty-five degrees at waist, arms raised backward.

Mov.—a. Swing arms forward, and jump upward a few inches.
b. Swing arms backward, and jump upward a few inches.
c. Swing arms forward and upward vigorously, and jump upward at least twelve inches.
d. Swing arms backward, and jump upward on the back swing of arms.

(These movements are continuous, much like the arm swing performed just prior to a standing broad jump. The jumps on counts *a*, *b*, and *d* are merely crow hops. The jump on *c* should be a hard, full effort jump.)

2. *Bend and Reach*

S. P.—Feet in side straddle, arms upward.

Mov.—a. Bend trunk forward and downward, swinging arms between legs and touching fingers to the floor between and behind heels. Knees may be bent as much as necessary.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

3. *Squat Thrust*

S. P.—Erect.

Mov.—a. Bend at knees and hips, placing hands on floor in front of feet in squat thrust position.
b. Thrust feet and legs backward to a front leaning rest position.
c. Recover to squat rest position.
d. Recover to starting position.

4. *Rowing Exercise*

S. P.—On back, arms upward, feet together.

Mov.—a. Sit up, and at the same time bend knees sharply; lean forward, thrusting or swinging arms forward to a rowing position, with knees together and against chest, feet flat on the ground, heels close to buttocks, arms extended forward.
b. Recover to starting position.
c. Repeat *a*.
d. Repeat *b*.

*or*

4a. *Bottoms Up*

S. P.—Front leaning rest.

Mov.—a. Push downward against floor with feet, knees straight, raising hips sharply, and jumping feet forward so that hips are elevated, and trunk and legs form an inverted *V*. With knees straight, jump as far forward as possible.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

5. *Squat Bender*

S. P.—Standing, with feet slightly separated, hands on hips.

Mov.—a. Full knee bend, thrust arms forward, fingers extended, palms down, trunk erect.
b. Recover to starting position.
c. Bend trunk forward, knees straight, touching floor in front of toes.
d. Recover to starting position.

6. *Push-up*

S. P.—Front leaning rest (body straight from head to heels, weight supported on hands and toes).

Mov.—a. Bend elbows, and touch chest to floor, keeping body straight.
b. Straighten elbows, recovering to starting position.
c. Repeat *a*.
d. Repeat *b*.

7. *Side Bender*

S. P.—Side straddle, arms upward, fingers interlaced.

Mov.—a. Bend sideward sharply to the left, bending left knee. Bend straight to the side without rotating trunk or shoulders.
b. Recover slightly and repeat with a bounce.
c. Again recover slightly and repeat with a bounce.
d. Recover to starting position.

(Alternate sides.)

8. *Bank Twist*

S. P.—On back, arms on floor and extended sideward, palms down, legs vertical, feet together, knees straight.

Mov.—a. Lower legs to the left, rotating trunk and touching floor near left hand. Keep knees straight, with both shoulders on floor. Legs must be lowered, not dropped.

b. Recover to starting position.

c. Lower legs to right, twisting trunk, and touching floor near right hand.

d. Recover to starting position.

*or*

8a. *Turn and Bounce*

S. P.—Side straddle, arms sideward, palms up.

Mov.—a. Rotate trunk sharply to the left to limit of motion; then relax rotation slightly.

b. Bounce to the left, and relax slightly.

c. Repeat *b*.

d. Recover to starting position.

(Alternate movements on right side.)

9. *Squat Jumper**

S. P.—Full knee bend, with feet separated about eight inches and left foot forward about eight inches, fingers interlaced on top of head.

Mov.—Spring upward, straightening knees and causing both feet to leave the ground. Reverse the position of feet while in the air, moving right foot forward and left foot backward. Return to starting position and repeat without pause. Repeat on the second, third, and fourth counts.

10. *Trunk Twister*

S. P.—Side straddle, hands behind head, elbows back, chin up.

Mov.—a. Bend forward sharply, knees straight, with a slight bouncing movement so that there is a slight recovery from the bend. (This is a vigorous movement.)

b. Bounce downward, and simultaneously turn trunk sharply to the left so that right elbow swings downward between knees.

c. Same to the right, left elbow swings down between knees.

d. Recover to starting position, pulling head back and chin inward strongly.

11. *The 440*

S. P.—Standing, with arms in loose thrust position.

Mov.—Stationary run. Begin slowly, then speed up somewhat, raising knees above hips. Increase gradually to full speed, raising knees hard; then slow down. (When the boys are in good condition, this exercise should continue for approximately one to one and one-half minutes, the middle half minute of "running" being at top speed.

* This exercise should be performed only half the number of repetitions used for other exercises.

12. *Eight Count Push-up*

S. P.—Erect.

Mov.—a. Bend at knees and hips, and place hands on floor in front of feet in squat rest position.
b. Thrust feet and legs backward to a front leaning rest position, body straight from head to heels, weight supported on hands and toes.
c. Bend elbows, and touch chest to ground.
d. Recover to front leaning rest position.
e. Bend elbows and touch chest to ground.
f. Recover to front leaning rest position.
g. Recover to squatting position.
h. Recover to starting position.

CONDITIONING DRILL III

1. *Squat and Straddle*

S. P.—Side straddle, arms upward.

Mov.—a. Jump to position with feet together, and squat to full knee bend position, swinging arms sideward and downward and placing hands on floor in front of feet when in rest position.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

2. *Lunge and Wrap*

S. P.—Attention.

Mov.—a. Lunge diagonally forward left, arms sideward, palms up.
b. Bend sharply forward and downward, and wrap arms around left thigh above knee, "folding arms" around thigh.
c. Recover to *a*.
d. Recover to starting position.

(Repeat alternate movements on right side.)

3. *Diagonal Squat Thrust*

S. P.—Erect.

Mov.—a. Bend slightly at knees and sharply at hips; place hands on the floor in front of feet in a squat rest position, with elbows inside knees.
b. Thrust feet and legs diagonally backward to the left to a front leaning rest position, body straight from head to heels, but at a forty-five degree angle from hands.
c. Recover to the squat rest position.
d. Recover to starting position.

(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

4. *V-up and Bounce*

S. P.—On back, arms on ground forty-five degrees from sides, palms down.

Mov.—a. Raise legs, with knees straight, and at the same time sit up until trunk and legs form a *V* position; then relax slightly. (This is a "bounce" movement.)
b. Again pull vigorously to the *V* position and again relax.
c. Repeat *b*.
d. Recover to starting position.

*or*

4a. *Back Bender*

S. P.—Standing, hands behind head.

Mov.—a. Bend *upper* trunk backward, raising chest high, pulling elbows back and looking upward. Keep knees straight.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

(This is a slow movement.)

5. *Squat Stretch*

S. P.—Erect.
Mov.—a. Squat to squat rest position, hands on ground about twelve inches in front of feet.
b. Keeping hands on ground, straighten knees completely, raising hips.
c. Recover to *a*.
d. Recover to starting position.

6. *One Legged Push-up*

S. P.—Front leaning rest, with left leg raised backward, knee straight, foot about twenty-four inches off the floor.
Mov.—a. Bend elbows, and touch chest to floor, keeping body straight, and lower left foot to floor.
b. Straighten elbows, and push up to straight arm position, and at the same time raise right leg.
c. Bend elbows, and touch chest to floor, lowering right foot to the floor.
d. Recover to starting position.

7. *Lunge and Bend*

S. P.—Attention.
Mov.—a. Lunge sideward left, and swing arms sideward and upward.
b. Bend trunk sideward, keeping arms parallel.
c. Recover to *a*.
d. Recover to starting position.

(Repeat alternate movements on right side.)

8. *Leg Circler*

S. P.—On back, arms stretched sideward, palms down, feet raised about twelve inches from floor, knees straight.
Mov.—a. With the legs describe a large circle to the left, keeping knees straight; swing legs as far as possible to the side, and then flex thighs as close as possible in front of trunk, and complete the circle. After having completed half the number of exercises, reverse the direction of leg circles. This is a four-count movement: (1) when legs reach left side, (2) when legs are in front of chest, (3) when legs are to the right, and (4) upon return to original position.

*or*

8a. *Arch Thrust*

S. P.—Squat rest position, hands on floor in front of feet.
Mov.—a. Thrust both legs backward, coming to rest with right foot on floor, but with left leg raised backward with knee straight. (Hips should not be elevated. Head should be raised facing forward.)
b. Recover to starting position.
c. Repeat *a*, raising right leg.
d. Recover to starting position.

9. *Double High Jumper*

S. P.—Feet separated about twelve inches, knees slightly bent, arms raised backward, body bent slightly forward at the waist.

Mov.—a. Swing arms forward and upward, and jump upward vigorously.
b. Swing arms downward and backward, and jump upward slightly.
c. Repeat *a*.
d. Repeat *b*.

10. *Turn and Bend*

S. P.—Side straddle, arms upward.

Mov.—a. Rotate trunk to left, and bend forward over left thigh, touching hands to floor outside left foot. (On successive movements attempt to touch farther and farther to the side.)
b. Recover to starting position. (Chest should be high, and arms should reach upward hard.)
c. Rotate trunk to right, and bend forward over right thigh, touching hands to floor outside right foot.
d. Recover to starting position.

11. *The 440*

S. P.—Erect, arms at thrust, fists lightly clenched.

Mov.—Stationary running. Begin slowly, but speed up somewhat, raising knees to the height of hips; then run for a while at full speed, raising knees very hard; then slow down. (The total time spent should be from thirty seconds to one minute).

12. *Leg Thrust and Dip*

S. P.—Squat rest position.

Mov.—a Thrust legs backward to front leaning rest.
b. Bend elbows, and touch chest to floor, keeping body straight.
c. Straighten elbows, raising body in a straight line.
d. Recover to starting position.

## HOME CONDITIONING DRILL

In view of the fact that few schools have enough physical education periods a week, the total exercise dosage is seldom adequate for proper conditioning. This home drill is offered as a supplement. It is usually most convenient to perform it in the morning immediately upon arising; hence the first exercise is to be done while the boy is still in bed. The exercises should be executed regularly and with eight to sixteen four-count repetitions.

1. *Legs Up*

S. P.—On back.

Mov.—a. Raise legs, with knees straight, to the vertical. At the same time place hands on the fronts of thighs, raise head and shoulders (not the back) from the bed, and press with hands as is desired against thighs. (This pressure increases the effort and makes the exercise more effective.)
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

2. *Push-up*

S. P.—Front leaning rest.

Mov.—a. Bend elbows and touch chest to floor, keeping body straight from shoulders to knees.
b. Straighten elbows, raising body to front leaning rest.
c. Repeat *a*.
d. Repeat *b*.

3. *Back Lifts*

S. P.—Face down on floor, hands behind head, elbows high.

Mov.—a. Raise trunk and legs (with knees straight) from the floor, pulling head and elbows back hard.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

4. *Squat Thrusts*

S. P.—Erect.

Mov.—a. Bend at knees and hips, placing hands on floor in front of feet in squat thrust position.
b. Thrust feet and legs backward to a front leaning rest position.
c. Recover to squat rest position.
d. Recover to starting position.

5. *Shoulder Puller*

S. P.—Standing, trunk inclined forward forty-five degrees, arms forward, palms facing each other.

Mov.—a. Swing arms sideward and backward, turning palms up, at same time pulling head back and chin in; then relax slightly, without swinging arms forward more than a few inches.
b. Again pull arms and head backward hard.
c. Repeat *b*.
d. Recover to starting position.

6. *Turn and Bob*

S. P.—Feet in side straddle, arms upward.

Mov.—a. Rotate to left and bend forward over hip, and swing arms down, trying to touch floor with fingers beside left foot, keeping knees straight, and then relax slightly.
b. "Bob" downward, trying to touch the floor farther out away from feet, and relax.
c. Again "bob" downward, touching still farther out.
d. Recover to starting position.

(Repeat alternate times to opposite side.)

7. *The 440*

S. P.—Erect, arms at thrust, fists lightly clenched.

Mov.—Stationary running. Begin slowly, but speed up somewhat, raising knees to the height of hips; then run for a while at full speed, raising knees very hard; then slow down. (The total time spent should be from thirty seconds to one minute. The ordinary four-count cadence with cumulative count should be used.)

*or*

7a. *Squat Jump*

S. P.—Full knee bend, with feet separated about eight inches, and left foot forward about eight inches, fingers interlaced on top of head.

Mov.—Spring upward, straightening knees and causing both feet to leave the ground. Reverse the position of feet while in the air, moving right foot forward and left foot backward. Return to starting position and repeat without pause. Repeat on the second, third, and fourth counts.

8. *Toes and Heels*

S. P.—Erect, hands on hips, feet separated slightly, and toes pointed inward about thirty degrees.

Mov.—a. Rise on toes high and hard, and inhale deeply, pressing downward on hips with hands.
b. Recover to starting position, and immediately rise on heels hard, exhaling fully.
c. Repeat *a*.
d. Repeat *b*.

(Note: Further home conditioning drills for use by the family will be found at the end of Chapter 27.)

## RIFLE EXERCISES

Rifle exercises are, in effect, conditioning exercises performed with a rifle, with a boy scout's staff, or with a steel wand. The additional weight of the implement makes the exercise more strenuous and provides greater development, particularly of the upper body. For the terminology, see page 51.

Two set drills are given here. In the first drill there are no exercises executed while the boys are lying down. This drill is particularly useful for military units or for outdoors when the ground is wet. The cumulative count should be used, but the number of repetitions will seldom be increased beyond twelve. If the boys are using rifles, they have the stock in the right hand and the barrel in the left hand.

RIFLE DRILL I

1. *Forward and Twist*

S. P.—Rifle downward.

Mov.—a. Swing arms forward.
b. Raise right hand and lower left hand to front perpendicular, bend trunk to left.
c. Recover to *a*.
d. Recover to starting position.

(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

2. *Side Lunge and Bend*

S. P.—Rifle downward.

Mov.—a. Lunge sideward left, flex elbows to thrust position.
b. Swing rifle to extended low horizontal between legs with muzzle backward, rifle parallel to ground and just above level of ankles.
c. Recover to *a*.
d. Recover to starting position.

(Repeat on right side on *5*, *6*, *7*, and *8*.)

3. *Fore-up, Full Squat*

S. P.—Rifle downward, feet twelve inches apart.

Mov.—a. Swing arms forward and upward to overhead position.
b. Swing arms forward with full knee bend.
c. Recover to *a*.
d. Recover to starting position.

4. *Fore-up, Back Bend*

S. P.—Rifle downward.

Mov.—a. Swing arms forward and upward to overhead.
b. Bend backward, emphasizing the bend in upper back. Head should face upward. Keep knees straight.
c. Recover to *a*.
d. Recover to starting position.

5. *Lunge and Turn*

S. P.—Rifle downward.
Mov.—a. Lunge sideward left, raising arms forward.
b. Rotate trunk to left.
c. Recover to *a*.
d. Recover to starting position.
(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

6. *High Gun Side Bend*

S. P.—Rifle downward.
Mov.—a. Step sideward left with left foot, swinging rifle to high side perpendicular right, left hand immediately in front of right shoulder, right arm upward.
b. Bend sideward left.
c. Recover to *a*.
d. Recover to starting position.
(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

7. *Leg and Arm Forward*

S. P.—Rifle downward.
Mov.—a. Swing arms forward and upward to overhead position.
b. Raise left leg forward to the horizontal, with knee straight, and swing arms forward. (Right knee bends slightly.)
c. Recover to *a*.
d. Recover to starting position.
(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

8. *Squat Bender*

S. P.—Rifle at thrust position.
Mov.—a. Full knee bend, and thrust arms forward.
b. Recover to starting position.
c. Bend forward and thrust rifle downward to low front horizontal (rifle in front of ankles).
d. Recover to starting position.

9. *Step Left, Turn, and Bend*

S. P.—Rifle downward.
Mov.—a. Flex elbows to thrust position, and step sideward with left foot.
b. Rotate trunk to left, and bend forward over left hip, thrusting rifle downward to low side horizontal, rifle pointing forward and backward.
c. Recover to *a*.
d. Recover to starting position.
(Repeat on right side on counts *5*, *6*, *7*, and *8*.)

10. *Jumping Jack*

S. P.—Rifle downward.
Mov.—a. Jump to side straddle, and swing arms forward and upward to overhead position.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

*or*

10a. *The 440*

S. P.—Rifle held at high port.
Mov.—Stationary run. Begin slowly, then speed up somewhat, raising

knees above hips. Increase tempo gradually to full speed, raising knees hard; then slow down. When the boys are in good condition, this exercise should continue for approximately one to one and one-half minutes. The middle half minute of "running" should be at full speed.

11. *Thrust and Bend*

S. P.—Rifle downward.
Mov.—a. Flex elbows, moving rifle to thrust position.
b. Thrust downward, bending forward about forty-five degrees, rifle in front of knees in low front horizontal.
c. Recover to *a*.
d. Recover to starting position.

RIFLE DRILL II

Some of the exercises in this drill require that the boys sit or lie down. If the drill is conducted outdoors, these exercises should be used only when the ground conditions are favorable.

1. *Flex and Thrust-up*

S. P.—Rifle downward.
Mov.—a. Flex elbows, rifle to thrust position.
b. Thrust upward to overhead position.
c. Recover to *a*.
d. Recover to starting position.

2. *Full Knee Bend*

S. P.—Rifle downward.
Mov.—a. Swing rifle forward and upward, and place behind shoulders.
b. Full knee bend.
c. Recover to *a*.
d. Recover to starting position.

3. *Sit-up, Thrust Forward*

S. P.—On back, rifle downward.
Mov.—a. Sit up, with knees straight, and thrust rifle forward until just over ankles.
b. Recover to starting position.
c. Repeat *a*.
d. Recover to starting position.

4. *Sit and Turn*

S. P.—Seated on ground, feet apart about thirty-six inches, arms forward.
Mov.—a. Rotate trunk to left.
b. Recover to starting position.
c. Rotate trunk to right.
d. Recover to starting position.

5. *Arms Forward, Side Bend*

S. P.—Side straddle, rifle forward.
Mov.—a. Bend trunk to left.
b. Recover to starting position.
c. Bend trunk to right.
d. Recover to starting position.

6. *Lunge, Front Bend*

S. P.—Rifle downward.

Mov.—a. Lunge forward with left foot, arms swinging forward and upward to overhead position.

b. Bend trunk forword, swinging rifle down to low front horizontal in front of left ankle.

c. Recover to *a*.

d. Recover to starting position.

(Repeat to right side.)

7. *Sit-up Left and Right*

S. P.—On back, feet separated about thirty-six inches, rifle overhead.

Mov.—a. Sit up, swinging rifle forward and to left so that the center of the rifle is over left ankle. Knees are kept straight.

b. Recover to starting position.

c. Repeat *a*, but extend rifle to right foot.

d. Recover to starting position.

8. *Rowing Exercise*

S. P.—Seated on ground, rifle to thrust position, legs straight and together.

Mov.—a. Bend forward, thrusting rifle forward, and at the same time raising knees and pulling feet in close to buttocks.

b. Recover to starting position.

c. Repeat *a*.

d. Repeat *b*.

9. *Lunge Side, Rotate and Bend*

S. P.—Rifle downward.

Mov.—a. Lunge sideward left, rifle swinging forward and upward to overhead position.

b. Rotate trunk to left and bend forward over left hip, swinging rifle to low horizontal by the side of left ankle.

c. Recover to *a*.

d. Recover to starting position.

(Repeat on right side.)

10. *Squat Jumps*

S. P.—Rifle behind shoulders, left foot about eight inches in front of right foot and feet separated about eight inches.

Mov.—a. Squat down rapidly until hip is over rear heel.

b. Spring upward, straightening knees and causing feet to leave the ground. Reverse position of feet while in the air, moving right foot forward and left foot backward.

c. Repeat *a*.

d. Repeat *b*, and continue. (This movement is continuous.)

11. *Fore-up Behind Neck*

S. P.—Rifle downward.

Mov.—a. Swing arms forward upward to overhead position and inhale.

b. Lower rifle to behind shoulders. Exhale.

c. Recover to *a* and inhale.

d. Recover to starting position and exhale.

## CHAPTER 10

## WEIGHT TRAINING

Muscular strength can be developed more rapidly through progressive weight training than through almost any other convenient means. The usual equipment is an adjustable barbell, or several barbells graded in weight, and dumbbells graded in weight. If regulation barbells are not available, substitute barbells may be made with concrete cast in number nine cans on the ends of a pipe or pole. Barbells should be adjustable from 30 to 120 pounds. Dumbbells should be adjustable in five-pound units from 10 to 40 pounds.

Weight training should not be engaged in more than three or four times a week. There is likely to be an excessive muscular soreness if this rule is violated. Weight training alternated with other activities is preferable to weight training alone.

Boys who have hernia or who have been recently operated on should not engage in weight training with heavy bells without the permission of their physicians.

A warm-up drill (see p. 52) should precede exercises with barbells or dumbbells.

Each squad should consist of three to five boys, who are approximately of the same strength, working with one barbell or with two dumbbells. This arrangement affords the boys a proper balance between the dosage of exercise and the amount of rest.

The exercises are so arranged that only two changes of weights with the barbells and only one change with the dumbbells are necessary in the drill. A weight that can be handled without too much strain should be used for the first three exercises. The weight of the barbells is increased by 30 to 50 per cent after the third exercise, and by another 30 to 50 per cent after the seventh exercise. Thus a boy starting with a weight of twenty pounds would change to weights of thirty and forty-five pounds, respectively. A boy starting with a weight of forty pounds would change to weights of fifty-five or sixty, and then to about seventy-five to ninety pounds. If barbells with adjustable weights are used, the smaller discs should be toward the center of the bar; this arrangement will reduce the number of discs needed to be changed. (For example, if the bar weighs 15 pounds, two 2½-pound discs and two 5-pound discs will bring the weight to 30 pounds. The addition of two 10-pound discs will bring the weight to fifty pounds. The addition of two 12½-pound discs will bring the weight to 75 pounds.) In the use of dumbbells, the weight should be almost doubled after the sixth exercise.

In exercises with barbells, the initial weights should be from twenty to fifty pounds, according to the strength of the boy. A good rule is to start with a weight that can be "curled" (see Exercise 2) about eight times. When this can be curled fifteen times, the weight should be increased. After the fourth exercise, a weight that can be "pressed" about eight times is about right. In exercises with dumbbells, the initial weight should be from five to twenty pounds. Here a good rule is to begin with a weight that can be raised to the side horizontal position about eight times.

The number of repetitions should be increased from week to week. In the beginning there should be about eight or ten repetitions, and this number should be increased to about fifteen repetitions. When the boy can perform that number of repetitions without undue distress, the weight of the barbell should be increased.

Boys who are not in good condition should begin easily and should not

try to force development too rapidly. They should not try to lift a maximum amount for at least two weeks after beginning the activity. In the beginning they should be content with increasing the number of times they lift a light weight. They should start with a weight that they can lift about twenty times. After having become accustomed to the activity, they should progress to a weight that they can lift only six to ten times, and continue *with that weight* until they can lift it at least fifteen times in succession without undue strain. Then they may progress to the next heavier weight, and repeat the process.

Teachers should strongly discourage the practice of building up enormous strength. Such development adds much more muscle than is needed for the normal functions of living. Besides, the muscle development must be supplied with blood for many years to come, an unnecessary burden thus being put on the heart. A reasonable goal for exercises with barbells is to *curl* (Barbell Exercise 2) a weight six-tenths the weight of the body, to press and snatch a weight seven-tenths the weight of the body, and to clean and jerk a weight equal to the weight of the body.

In the "ordinary grasp" the palms are toward the thighs (barbell in front of the thighs). In the "reverse grasp" the palms are away from the thighs. The "ordinary grasp" should be used unless the directions call for the "reverse grasp." The feet should be about shoulder width apart unless the directions call for a different distance.

In weight training, *there should be no closing off of the breathing* ("holding the breath"). There should be, usually, inhalation on the upward movement, and exhalation on the downward movement. This free breathing movement should be maintained, for it insures that the exercise interferes as little as possible with the circulation, and it also permits the arterial pressure to be maintained at a minimum.

## BARBELL DRILL

WEIGHT OF BARBELL, 20 TO 50 POUNDS

1.(a)* *High Pull-up.*—Place the barbell on the floor in front of the toes. Bend down, grasp the barbell, lift it rapidly to just above the height of the head, and return it almost to the floor. Keep the back as straight as possible.

1.(b) *Alternate Lift and Press.*—Place the barbell on the floor in front of the toes. Lift the barbell rapidly to the chest. Then, without a jump, press the barbell upward to the full overhead position, and return the barbell in reverse order almost to the floor. Keep the back straight.

2. *Curl.*—Hold the barbell in front of the thighs with the reverse grasp (palms forward). Flex the elbows slowly until the barbell is close to the upper chest. The elbows should be fully flexed on the upward movement, and the movement should not be aided with a sway or a jerk of the body.

3.(a) *Side Bend.*—Lift the barbell rapidly above the head, and then lower it to a position behind the neck. With the feet about twenty-four inches apart, bend to the left side and then to the right. Repeat the movement from ten to fifteen times on each side.

3.(b) *Rotate and Bend.*—Hold the barbell in front of the thighs, with the feet about twenty-four to thirty inches apart. Turn the body to the left, and lower the bell to a position just by the side of the left ankle, and return to the original position. Repeat the movement to the right side. Keep the back as flat as possible.

3.(c) *Side Bend.*—With a ten to fifteen pound weight held at arm's length overhead, and with feet apart, bend to the left side and then to the right side.

* If two exercises (*a* and *b*) are given under one number, the second exercise is slightly more difficult than the first. In some instances, the coördination required by the second exercise is more difficult than that required by the first. Frequently the boy will be able to progress from Exercise *a* to Exercise *b* after the second or third week of weight training.

4. *Walking Squat.*—With the barbell resting on the shoulders behind the neck, do twenty full knee bends. Start with one foot a foot's length in front of the other. After each knee bend, step forward with the rear foot, which then becomes the forward foot.

WEIGHT OF BARBELL INCREASED 30 TO 50 PER CENT

5. *Military Press.*—Hold the barbell in front of the chest. Thrust the barbell slowly upward to a position above the head, and return to the original position. (This movement may be initiated from a position of the barbell behind the neck.)

6.(a) *Stiff Leg Dead Lift.*—Place the barbell on the floor in front of the feet. With the back as straight as possible lift the barbell until standing erect with barbell in front of the thighs. Lower the barbell as far as possible *with the knees kept straight* and with back about straight.

6.(b) *Two Hand Repetition Snatch.*—With the feet slightly apart, stand close to the barbell and grasp it *with the hands wide apart.* With a long continuous pull, raise the barbell close to the chest, and as the bell passes the face, "split," one foot going forward with the knee bent, and the other going backward with the knee straight, and with the arms at the same time extending fully overhead. Straighten up, moving the feet under the body, and return the barbell to the floor. This is a three-count movement, up on the first count, feet under the body on the second count, and bell returned to the floor on the third count. Most weight trainers always place the same foot forward, but there is no reason that, with this fairly light weight, the feet should not be alternated.

7. *Shoulder Shrug.*—Hold the barbell in front of the thighs, with the palms toward the body. Without bending the elbows, lift the barbell as high as possible by lifting the shoulders.

8. *Half-Bend Rowing Motion.*—Lift the barbell from the floor, and stand with knees and the back straight, but with the hips bent so that the trunk is inclined forward nearly parallel to the floor. Flex the arms and pull the barbell upward until the bar touches the chest.

WEIGHT OF BARBELL INCREASED 30 TO 50 PERCENT

9. *Flat Foot Squat.*—Stand with the barbell behind the neck and the feet twelve to fifteen inches apart. Squat completely down, keeping the soles of the feet on the floor and separating the knees. (If the legs are particularly strong, do the movement on the toes, first raising the heels from the floor.)

10. *On Toes.*—Lift the barbell to a position behind the neck. Rise as high as possible on the toes. Rise ten times with the toes turned in, ten times with the toes straight, and ten times with the toes turned slightly outward.

11.(a) *High Rapid Dead Lift.*—This exercise is like Exercise *1(a)*, except that the barbell is lifted only to the height of the chest, and the movement is very rapid, without a pause at either end of the movement.

11.(b) *Continuous "Clean and Jerks."*—Grasp the barbell, and pull it up in one motion to the chest ("clean it"). Then "jerk" it up to a position over the head, with the arms straight. This movement may be done with a split as in Exercise *6(b)*. Then lower the barbell nearly to the floor.

12. *Sit-ups.*—Lying on the back with the feet held down, and holding a weight (5 to 25 pounds) behind the neck, sit up and recline as many times as possible. When more than twenty sit-ups can be done, increase the weight.

## DUMBBELL DRILL

WEIGHT OF DUMBBELLS, 5 TO 20 POUNDS

1. *Dumbbells Sideward and Forward-Upward.*—Raise the dumbbells sideward to the level of the shoulders, and return. Then lift them forward and upward to the vertical and return.

2. *Curl and Press Upward.*—From position with dumbbells at sides, flex both elbows until the dumbbells are in front of the shoulders. Then extend them upward to the vertical. Return to the initial position in reverse order.

3. *Stationary Run.*—Execute a stationary run, bringing the knees up to a position level with the hips and swinging the arms vigorously in the usual motions used in running.

4. *Leaning Side Swing.*—From a position of the trunk bent forward, the knees straight and the *back flat*, swing the dumbbells sideward to shoulder level. Keep the head in line with the trunk and keep the chin pulled in.

5. *Forward and Up.*—Lying on the back, with the arms out at the sides and at right angles to the body, swing the dumbbells forward (above the chest), then upward (along the side of the head), and back to the original position in reverse order.

6. *Rotate and Bend.*—Standing with the feet apart and with the elbows flexed sideward so that the elbows are close to the sides and the dumbbells are by the sides of the shoulders, turn the trunk to the left and thrust the dumbbells down to the floor just outside the left ankle. Return to the first position, and repeat the movement to the opposite side.

WEIGHT OF THE DUMBBELLS DOUBLED

7. *On Toes.*—Holding the dumbbells in the hands, rise on the toes. As you become stronger, you can do this exercise by rising on the toes of one foot at a time, using one foot until that leg is tired, and then changing to the other foot.

8. *Swing between Legs.*—Standing with the feet apart, and with the dumbbells raised to the vertical, bend forward, swinging the bells between the legs and backward, and return to the original position. This movement may be varied as follows:

(a) Swing only one dumbbell, changing the hands as the dumbbell swings upward to the vertical. You may place the free hand on the knee to that side as you swing down.

(b) Swinging with both dumbbells, as you swing up, you may execute the "split" by thrusting one leg forward with the knee bent and the other backward with the knee straight, and *jumping* to the straddle position as the arms swing downward.

9. *Full Squat and Thrust.*—With the dumbbells thrust over the head to the vertical position and with the feet about twelve inches apart, squat to a full squat position, at the same time lowering the bells to a thrust position alongside the shoulders. Until the legs are strong enough, this is best done with the feet flat on the floor and the toes turned out. After the legs become stronger, it can be done in the usual way—raising the heels and squatting down on the heels.

10. *Upright Rowing Motion.*—With the dumbbells by the sides of the thighs, pull the dumbbells upward, with the elbows high and at the sides, until the dumbbells are in front of the shoulders.

11. *Continuous Snatch.*—Bend forward, feet apart about shoulder width, and grasp the dumbbells on the floor in front of the feet. Straighten up, and pull the dumbbells rapidly past the front of the body and up to a position of arms vertical. If desired, this movement can be combined with a "split."

12. *Single V-up.*—Lying on the back, dumbbells on the floor about opposite the hips (the position will vary slightly with different boys) and keeping the chest high, raise the trunk and the legs (with the knees straight) from the floor, hold a position of a *V* for about a second, and then recover to the original position. This exercise should be done about forty times when the boy is in excellent condition.

CHAPTER 11

## GUERRILLA EXERCISES

Guerrilla exercises serve two general purposes: (1) They contribute materially to conditioning and developing the body (and maintaining a high level of condition and development once this has been attained). (2) They give practice in activities that are similar to or identical with activities to be performed when fighting is engaged in.

The exercises included in this type of drill are usually performed while the boys are moving forward in a circle.

The class is assembled in a circle formation. If the class numbers between ten and thirty, place the boys in single file; if between thirty and sixty, place the boys in pairs; in other words, in a double circle. The boys should face right around the circle, each boy (or pair) about eight feet behind the boy (or pair) ahead.

After the class has been arranged in circle formation, the instructor directs the members to walk forward at a slow relaxed pace (eighty to ninety short steps per minute), and to keep the circle formation. (The class does not walk in step.) The instructor, standing in the center of the circle, calls the names of an exercise, then demonstrates it, and then commands "(name of exercise), *March.*" Immediately each member starts to perform the exercise, continuing to move about the circle. After the exercise has been performed for an adequate period (ten to thirty seconds), the instructor commands "Route step, *March,*" upon which all class members resume the original slow walk. After a sufficient pause (five to fifteen seconds), the instructor names and demonstrates a new exercise, and at the signal "Start," the class starts to perform it. The exercises are all performed in this manner.

It will be noted that at all times (whether walking or performing an exercise) the performers continue moving around the circle. Also, the length of the period of exercise and the period of rest will vary with the nature of the exercise and the condition of the boys. The participants should be required to maintain these positions in the circle at all times. The instructor should require the class members to execute all orders instantly, and further should require all members to continue to perform each exercise until the command "Route step, *March*" is given. Order should be maintained at all times.

There are four types of exercises: (1) ground (on hands and feet), (2) stooping (bending trunk or legs), (3) erect, and (4) double (in pairs). In general, it is advisable to use a variety of the first three types for the first part of the period, and then to close the period with two or three double exercises or a short "dog trot" run.

Exercises executed on one foot, such as hopping, may be transferred to the other foot by the command "Change."

Some of the more common exercises that may be used in this type of work are as follows (others may be designed by the instructor):

1. GROUND EXERCISES

*All-Fours.*—Face down, on hands and feet walk forward.

*Elephant Walk.*—Face down, on hands and feet, with knees and elbows stiff, walk forward.

*Lame Dog* (on left leg).—Face down, on two hands and one foot travel forward, moving both hands and the foot alternately.

*Frog-Jump.*—From squat position, with hands on floor between legs, leap forward to hands, bringing up legs to squat position.

*Crab Walk, Forward.*—Back down, on hands and feet (with feet forward), walk in direction of hands.

*Measuring Worm.*—Support body on hands and feet, with legs extended backward. Keeping hands in place and knees stiff, walk on toes with short steps until feet are near hands. Then keeping feet in place, walk forward with hands with short steps until the original position is attained.

*Bouncing Ball.*—Support body on hands and feet—hands at shoulder width, feet twenty-four inches apart, back and legs in line. Travel forward by means of a series of short upward springs of hands and feet simultaneously (bounce hips up and down).

2. STOOPING EXERCISES

*Duck Waddle.*—Knees-bent position, hands on hips; retaining this position, walk forward.

*Chicken Walk.*—Knees-bent position, grasp ankles (left hand on left ankle, right hand on right ankle). Retaining this position, walk forward.

*Squat Jumps.*—Knees-bent position; retaining this position, travel forward by short bouncing jumps.

*Indian Walk.*—Bend knees slightly, bend trunk forward, arms hanging down until backs of hands touch ground. Retaining this position, walk forward.

*Crouch Run.*—Lean forward at waist until trunk is parallel to the ground. Retaining this position, run forward at a "dog trot" pace.

*Toe Touch Walk.*—Walk forward, bending trunk forward, and touching, on each step, one hand to toe of opposite foot. The trunk should be raised to the vertical position between steps.

*Heel Touch Walk.*—Walk forward with fairly long steps, reach back and touch heel of rear foot after each step. Right hand touches right heel; left hand touches left heel.

*Knee Touch Walk.*—Walk forward, bending knees and touching knee of rear leg to the ground on each step. Knees are bent and straightened on each step.

*Steam Engine.*—Clasp hands behind neck, walk forward in the following manner: As left leg is brought forward, raise knee, bend trunk forward, and touch right elbow to knee; then step forward on to left foot, and raise trunk. Repeat with right leg and left elbow.

3. ERECT EXERCISES

*Walk on Toes.*—Walk forward on toes.

*Giant Step Walk.*—Walk forward, making each step as long as possible.

*Fast Walk.*—Walk forward at a fast pace, swinging arms vigorously (avoid running).

*Knee Raise Walk.*—Walk forward, raising bent knee of advancing leg as high as possible on each step. Make each step long by extending leg forward.

*Goose Step.*—Walk forward, swinging advancing foot hip high and then down to ground vigorously on each step. Keep knee of advancing leg stiff. Steps should be of normal length. Swing arms vigorously.

*Hand Kick Walk.*—Walking forward, kicking foot upward on each step, at the same time leaning forward and touching toe with hand of opposite arm. Left hand touches right foot, and right hand touches left foot.

*Straddle Run.*—Run forward, leaping to the right as right foot advances, leaping to the left as left foot advances.

*Kick Run.*—Run forward, kicking foot of advancing leg upward on each step.

*Knee Raise Run.*—Run forward, raising knee of the advancing leg as high as possible on each step.

*Hop on Left Foot.*—Travel forward by hopping on left foot.

*Hobble Hopping on Left Foot.*—Holding right foot in left hand behind buttocks, travel forward by hopping on left foot.

*Broad Jumping.*—Travel forward by means of a series of broad jumps off both feet.

*Stiff Knee Jumping.*—Holding knees stiff, travel forward by means of continuous short jumps (toe springs).

*Heel Click Jumping.*—Travel forward by means of continuous high jumps, clicking heels together on each jump.

*Hop Step.*—Travel forward by means of a series of hops and steps. Step on left foot, hop on left foot, step on right foot, hop on right foot, etc.

4. DOUBLE EXERCISES

Before starting these exercises, have the group count off by two's, and then place them in pairs (side by side). In all cases the I's carry the II's at the signal "(name of exercise), *March.*" At the signal "Change" the boys reverse positions; II's carry I's, and continue the same exercise. On the signal "Route step, *March*" both resume their original positions and walk forward.

*Hip Carry.*—I stands in front of II. II mounts I's hips, and I grasps II's thighs. Retaining this position, I runs forward.

*Arm Carry.*—I, standing sideways beside II, bends knees and leans forward, placing one arm behind II's back and one arm under II's knees. I straightens up, lifting II from the ground. II places near arm around I's shoulders and clasps his other hand. Retaining this position, I runs forward.

*Fireman's Carry.*—I, standing sideways in front of II, bends knee and leans forward, placing one arm through II's crotch. II leans forward until he lies across I's shoulders. I straightens up, lifting II off the ground. I, using hand of arm through II's crotch, grasps wrist of II's arm that is hanging over shoulder. Retaining this position, I runs forward.

*Cross Carry.*—I, standing sideways in front of II, leans forward. II bends forward until he is lying across the middle of I's back. I then places one arm around II's knees, one arm around II's shoulders, and straightens up, lifting II from the ground. Retaining this position, I runs forward.

*Shoulder Carry.*—I, standing behind II, leans forward, placing head between II's legs. I straightens up, raising II to a sitting position astride neck and shoulders. II hooks feet around I's back. I grasps II's legs. Retaining this position, I runs forward.

*Waist Carry.*—I, standing behind II, bends knees slightly, places arms around II's waist. I straightens knees, lifting II from the ground. II raises feet by bending knees and leans backward. Retaining this position, I runs forward.

*Single Shoulder Carry.*—I standing in front of and facing II, assumes a semi-squatting position. II leans forward until he lies across I's left shoulder. I clasps arms around II's legs, and straightens up, lifting II from the ground. Retaining this position, I runs forward.

*Alternate Vaulting.*—I stands three feet in front of II—both face forward. I spreads feet (twenty-four inches), places hands on knees, and bends head forward. II straddle vaults over I. II then stands in the position formerly held by I. I then straddle vaults over II. This alternate vaulting is continued.

## CHAPTER 12

## HIKING, RUNNING, GRASS DRILLS, AND OBSTACLE COURSES

Hiking in the school program is, because of the time element, much more difficult to administer than it is in the armed services. Usually, the time of the physical education period does not exceed an hour, including the time needed for dressing, undressing, bathing, etc. Hence if the hike is kept within the limit of a class period, the distance covered cannot be very long. In some cases, however, it is possible to schedule longer hikes, if the activity is started in the last period in the afternoon, and continued past the school's usual closing time.

This activity differs in other ways from military hiking. First, the boys usually wear gymnasium clothing. Second, the boys do not carry packs and rifles. (This may not be true of R.O.T.C. groups.) Hence the pace may be faster than in military hiking.

In spite of the fact that most of the books on hiking advise the wearing of heavy leather shoes, basketball shoes will usually prove much more satisfactory. They protect the feet sufficiently, and are much less apt to produce blisters.

Hikes, if systematically carried on—say once a week—should be of increasing severity after the first two or three periods. Usually there is considerable double timing interspersed after the first few hikes.

*Double timing* is somewhat different from running as usually practiced. The boy should alight on the sole of the whole foot at once, neither on the heel nor on the ball of the foot. The feet skim the ground, and are not lifted high as in running. The body leans forward moderately, and the knees remain somewhat bent. The stride is about three to three and one-half feet long. It is more of a "dog-trot," or "jog," than a run. In this kind of double timing, the boys should stay in step unless they differ markedly in size. In the latter case, they may be divided into groups which follow each other, with boys of about the same size in each group.

After the double timing practice is begun, the boys hike or march several hundred yards and then double time about a hundred yards, and again hike. Gradually the double timing is increased in distance, and the marching is decreased. The description given under "Road Work" will suffice to describe this in slightly greater detail.

The following army standards might well be set forth as goals:

1. Hike four miles in forty-five minutes
2. Hike five miles in one hour
3. Hike nine miles in two hours
4. Hike sixteen miles in four hours
5. Hike twenty-five miles in eight hours (with a stop for lunch)
6. Hike and double time seven miles without a halt

In hiking for more than one hour, it is the usual practice to hike fifty minutes and rest ten.

When the boys are double timing, the advantage of favorable terrain should be taken into account. Thus, the boys should be double timed down grade. But, different from army practice, they should occasionally be double timed up hill for short distances.

### RUNNING

Running is the most effective activity for the development of circulo-respiratory endurance, or "wind," and some running should be included in the program every day. It may take the form of maze running indoors,

running around the athletic field, road work, wind sprints, cross country running, steeple chasing, or obstacle course running. Grass drills and some of the more strenuous running games accomplish the same purposes, and may be substituted freely for other forms of the running program.

There is a common error of assuming that no instruction in form need be given for this running. The fact is that few boys run well unless they have been taught the techniques. Hence the proper form for running should be taught to all. This form will be found described in the chapter on Track and Field Athletics (see p. 167). The boy in the regular gymnasium class should be as carefully coached in skills as is the boy on the athletic squad.

*Maze Running*

This form of activity is simply running in single file around the gymnasium or exercise ground, various evolutions being performed. For instance, the file may weave up and back, may run in a spiral, going first from the periphery to the center, and then reversing itself and spiraling outward again; or the column may cross itself, with the boys alternating in passing across the crossway. Various formations may be worked out. The pace should be rather brisk, and the running should continue from three to five minutes.

*Road Work*

Road work is a mixture of hiking and running, which is very extensively used in conditioning programs, particularly in the early stages. (This is real running, as distinguished from double timing.) The major emphasis is on increasing the amount of time given to running until the activity gradually changes into cross country running. Usually the program begins with the proportion of about one hundred strides of running to two or three hundred strides of marching. The amount of running is rapidly increased until, about midway in the conditioning program, the boys are running three to four hundred steps and walking about one to two hundred steps. The total time devoted to this activity is from ten to thirty minutes. If less time is allotted to this activity, the proportionate amount of running is increased, or the speed of the running is increased. In the advanced stages of conditioning, some of the running should be done at a very fast pace for a distance of one to two hundred yards.

*Wind Sprints*

Wind sprints provide a very strenuous work-out in a short time, but should not be used before the third or fourth week of the conditioning program. Parallel lines are drawn from forty to sixty yards apart (the running may be crosswise on a football field). The instructor stations himself midway between the lines. All of the boys are lined up behind one of the lines. Some system of matching the boys should be devised. If, for example, the group is a group of football candidates, the instructor may call out, "All centers, guards, and tackles take their marks." The next time it may be the backs and ends. Or the instructor may call all boys over 160 pounds to line up, etc. Then upon the blowing of the whistle, all of those lined up sprint as fast as possible past the instructor, who calls out the names of the two leading boys. This group then coasts on to the other restraining line and lines up there. This is repeated until all behind the first line have sprinted past the instructor. They then repeat in the opposite direction. This process is repeated several times, or until the boys have had enough running. The severity can be regulated by the distance run and by the number of times the boys run.

*Cross Country Running*

Cross country running is usually thought of as distance running over rough ground for an extended distance. Where possible, the course should

be up and down hill, and have a number of natural obstacles for the boys to surmount, such as small streams to jump, fences to jump or vault, and very steep embankments to climb. In the beginning, the running should be interspersed with some walking, especially on the uphill stretches, as in road work. But the walking should be discontinued early, and the severity determined by the distance to be run. As soon as the abilities of the boys have been determined, it is well to divide them into about three squads according to condition, and to start the slowest squad out first, and the next faster squad second, and the fast squad last. They should be so spaced as to come in at about the same time. There should be two leaders with each group, one to take the lead, and the other to run at the rear and keep the stragglers running. In the beginning the run may be from half a mile to a mile. Later, it may be increased to as much as two or three miles. After finishing, the boys should walk for from two to four minutes to cool off and to recover to a normal physiological state.

*Steeple Chase*

The steeple chase is a short version of a cross country run, usually conducted around a football field or park. The course may be covered several times. A number of artificial obstacles are provided, such as hurdles to be jumped, ditches—simulated by lime lines—to be jumped, and where the equipment permits it, bleachers or stadium seats to be climbed up and down again. This sort of course is run at a rather high rate of speed, and hence should usually not be more than half a mile in length.

*Grass Drills*

Grass drills are vigorous exercises, usually involving movements of going down on the ground and up again, interspersed either with short sprints, fast stationary running, or with other exercises. These drills are very strenuous, and should not be carried on for more than two or three minutes at first. Later the grass drills may be continued up to five minutes with the older boys. After some other activity, they may be repeated if desired. Since the object is to develop circulo-respiratory endurance and general stamina, the boys should be kept at the drills until there is some real respiratory distress.

The movements are changed to command. These commands, unlike those for the conditioning exercises or marching, are given informally, and without a preparatory command. The execution is carried out immediately after the command has been heard, as in general exercises of alertness. There should be no set sequence of commands, for one purpose is to keep the boys alert and to give training in quick and adaptive reactions.

The basic exercise in grass drills is either sprinting or stationary running, more frequently the latter. In the stationary running, the boys run in place vigorously, raising the knees above the level of the hips, and swinging the arms hard. If actual sprinting is used, the time given for the sprinting is enough that each sprint is for a distance of from ten to twenty yards only.

The following commands and their meaning should be taught gradually, with one or two new ones added every time the drill is used. It will be seen that some of these movements are usable only when the boys are sprinting, and are not applicable when they are doing stationary running.

1. *Front.*—From a standing or running position, the boys drop as quickly as possible to a prone (face downward) position on the ground. Or if the command is given when the boys are on their backs, they push up with the arms, and jump the feet backward between the arms or around through a sideward position as fast as possible.

2. *Back.*—From the standing or running position, the boys drop as quickly as possible to a position on the back. If the command is given while

the boys are in the *front* position, they push up with their arms, and jump the feet and legs through the hands to a supine position.

3. *Stop.*—From a position of running, the boys drop to a position of a lineman's crouch, with both hands or one hand on the ground.

4. *Up.*—This command is given when the boys are on the ground or in a crouch position. They then spring up to their feet and begin a fast stationary run, which continues until the next command.

5. *Go.*—This command is given during a sprinting drill, and is given from a position on the ground or from the crouch (*stop* position). The boys at once spring up and sprint forward about ten to twenty yards, much as linemen do in signal practice in football, keeping in one rank, and about two yards apart. They run until the next command.

6. *Right* (or *left*, or *to the rear*).—These commands may be given when the boys are on the ground or in the crouch. Immediately the boys spring up and start to run either forty-five degrees to the right (or left, according to command), or face about and run to the rear. These commands may be varied by the instructor's telling the boys that the movement will be *right and left alternately.* They are told that, when the command right is given, they will immediately obey that command. When they hear one blast of a whistle, they are to run to the other side (left in this case) at an angle of ninety degrees from the first direction, and to continue to change courses in this way at each whistle blast. When two whistle blasts are heard, the boys drop to the *front* position. Any other combination may be given, such as coming to the *stop* position when two blasts are heard.

7. *Zigzag.*—When the boys hear this command, they run with a very wide straddle stride, springing about four feet to the side as well as forward in running, or simply from side to side in stationary running.

8. Various other exercises may be done on the ground. These may be chosen from the Guerrilla Exercises (Chapter 11), or from the Conditioning Exercises (Chapter 9). Examples are as follows:

a. *Squat Thrust.*—This may also be done as a *diagonal squat thrust,* thrusting the legs forty-five degrees sideward instead of directly backward.

b. *Sit-ups.*—From the *back* position, the boys sit up, and touch the toes with the hands. The supine position should be with the arms upward after the first sit-up. The usual dosage before the boys change to another exercise is about twenty sit-ups.

c. *Legs Overhead.*—From the back position, the legs are raised, with the knees straight, and swung upward until the legs are about parallel with the ground, and directly over the face. The cadence is slow. The exercise is repeated ten to twenty times.

d. *V-ups.*—This is the conditioning exercise on page 54. This should be repeated from eight to fifteen times.

e. *Leg Circling*—From a back position, the arms are stretched out on the ground sideward, and the legs are raised slightly from the ground and swung in a large complete circle, first to the side, then in front of the chest, around to the opposite side, and back to the original position. The knees are kept straight.

f. *Bicycling Exercise.*—From the back position, the legs and the hips are raised about eighteen inches from the ground. The boys then peddle with the feet as in bicycling, but with the feet up in the air. This is continued for twenty to sixty seconds.

## OBSTACLE COURSE RUNNING

The obstacle race trains and conditions boys and develops a variety of skills necessary for bodily control, such as running, jumping, vaulting, climbing, crawling, falling, balancing, hurdling, hopping, swinging, wall scaling, suspension, traveling, and dodging.

Through these skills such desirable outcomes as endurance, speed, power, balance, strength, agility, confidence, self-reliance, competitive spirit, and the will to win in the face of opposition are acquired.

Criteria for designing and constructing a course are: (1) economy of construction, (2) facility of placement and removal, and (3) utilization of equipment already available. Possible uses of a course are: (1) test of general physical fitness, (2) self-test against time, (3) races, (4) intramural group competition, and (5) physical achievement time standards for various age groups.

Preliminary conditioning exercises should be given depending upon the physical condition of the participants. Before time trials, practice periods should be devoted to instruction, demonstration, practice, and training on the various obstacles. *The course should never be run for time without this preliminary instruction and practice.*

*Obstacle Course*

The course should be designed to train boys to meet a variety of physical obstacles under trying conditions. It should have enough variety to be both interesting and challenging. A good course should develop endurance, speed, agility, balance, and a sense of alertness.

In order to develop these abilities, obstacles should be selected that will make definite contributions toward this end.

In laying out the course it is advisable to utilize as much as possible all natural obstacles such as streams, ditches, trees, hills, embankments, and ravines.

There is no standard obstacle course. However, it is suggested that the total length of the course be from three to six hundred yards, and contain from twelve to twenty obstacles.

The obstacles to be constructed should include at least one of each basic type to develop the following skills: (1) running; (2) climbing walls, ropes, poles, or ladders; (3) hand-over-hand travel on ladders or ropes; (4) vaulting; (5) dodging; (6) swinging; (7) crawling on ground or through tunnels; (8) balancing; (9) jumping ditches; and (10) hurdling.

A definite check-up may be made to determine the runner's improvement in condition and skill if his running of the course is timed at regularly scheduled periods.

A suggested method for timing large groups is as follows:

1. Number all contestants.

2. Start four to ten men at a time, recording the numbers of the starters and the starting time. The watches are started with the first group and kept running. At the finish line the timer calls to a recorder the time of each man as he finishes. Beyond the finish line a funnel-shaped area, roped off, leads the runners to a table at the outlet, where another recorder lists the order of their finish by their numbers. If the finishing time list is superimposed over the order of finish, the complete results may be determined. The times for the groups, after the original starters, are determined by the subtraction of the starting times from the finish times.

## SAMPLE COURSES

### 440-Yard Obstacle Course

See **Fig. 18**

1. Climb ladder, 14 ft. high, go up, over and down.
2. Hand walk (parallel bars), 5 ft. long, 4 ft. 6 in. high, 22 in. apart.
3. Balance beams, 2 ft. high, 30 ft. long, 4 ft. wide.
4. Dodging posts (padded), 4 ft. 6 in. long, 6 ft. apart.
5. Hurdling wall, 2 ft. 6 in. wide, 3 ft. high.
6. Scaling wall, 7 ft. high, with sand and sawdust pit.
7. Crouching cage, 4 ft. high, 20 ft. long.
8. Broad jump pit, 12 ft.
9. Vaulting fence, 4 ft. high.

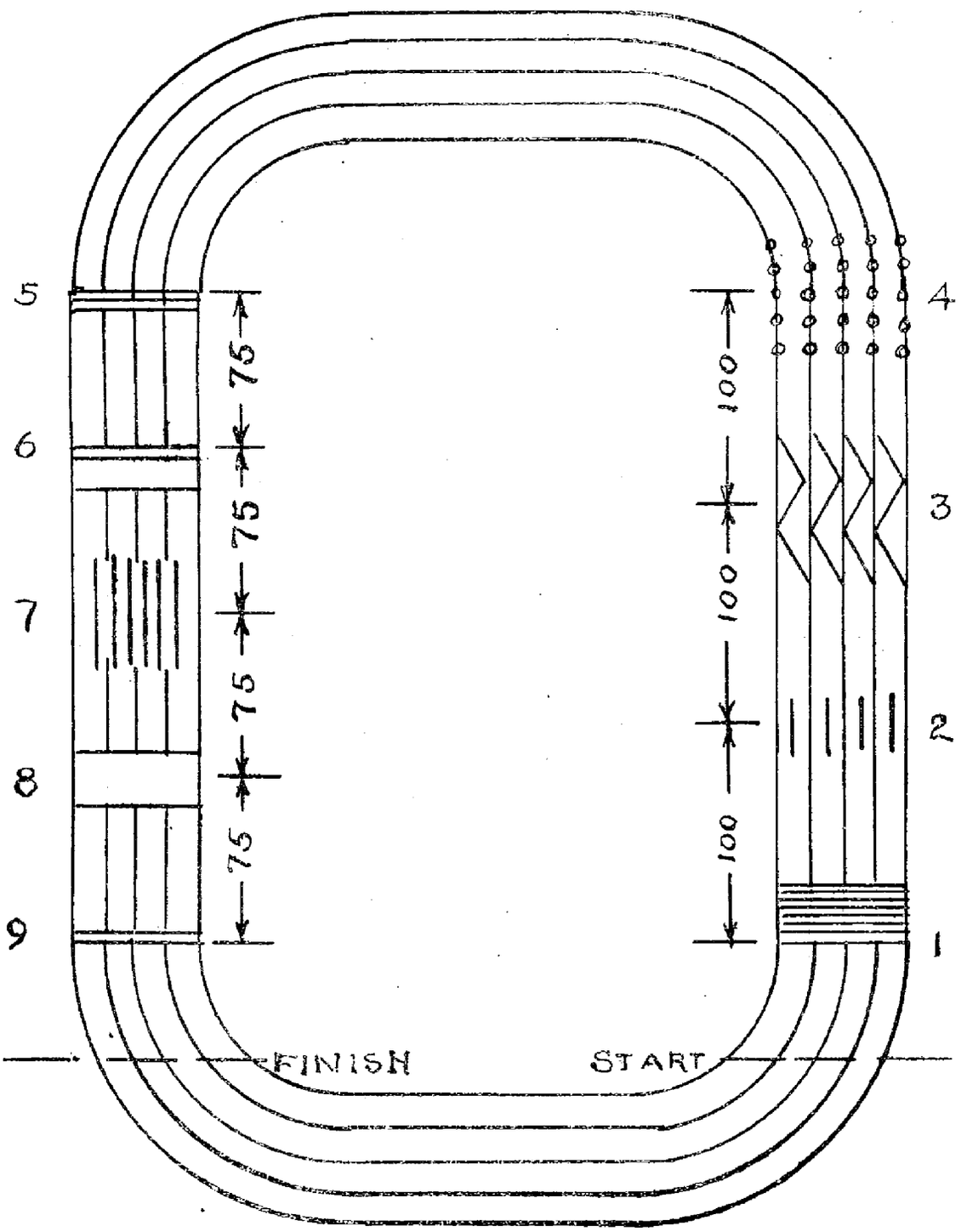



Fig. 18. 440-yard Obstacle Course

A SHORT COURSE

"The Missouri Toughener"
(University of Missouri)
See Fig. 19

Barrier, 3′ 6″ high—to jump or vault.

Ditch, 2′ deep, 7′ wide — to jump across.

Barriers, 18″ high—to crawl under.

Hurdles, 2′ 6″ high, 5 yards apart—to jump.

Wall, 8′ high—to scale.

Balance beams, telephone poles, 25′ long, 2′ 6″ above the ground — to walk.

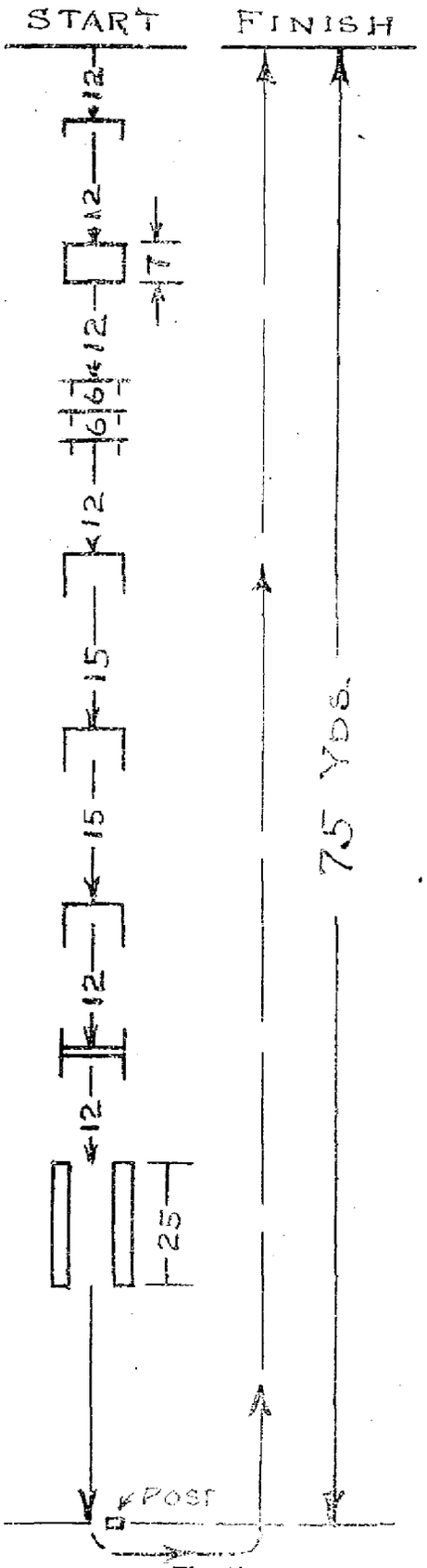



Fig. 19

The first barrier may be jumped or hand vaulted.
The second obstacle, which is the water hazard, must be leaped.
The third obstacle is one under which the individual may dive or roll.
(continued, top of page 81)

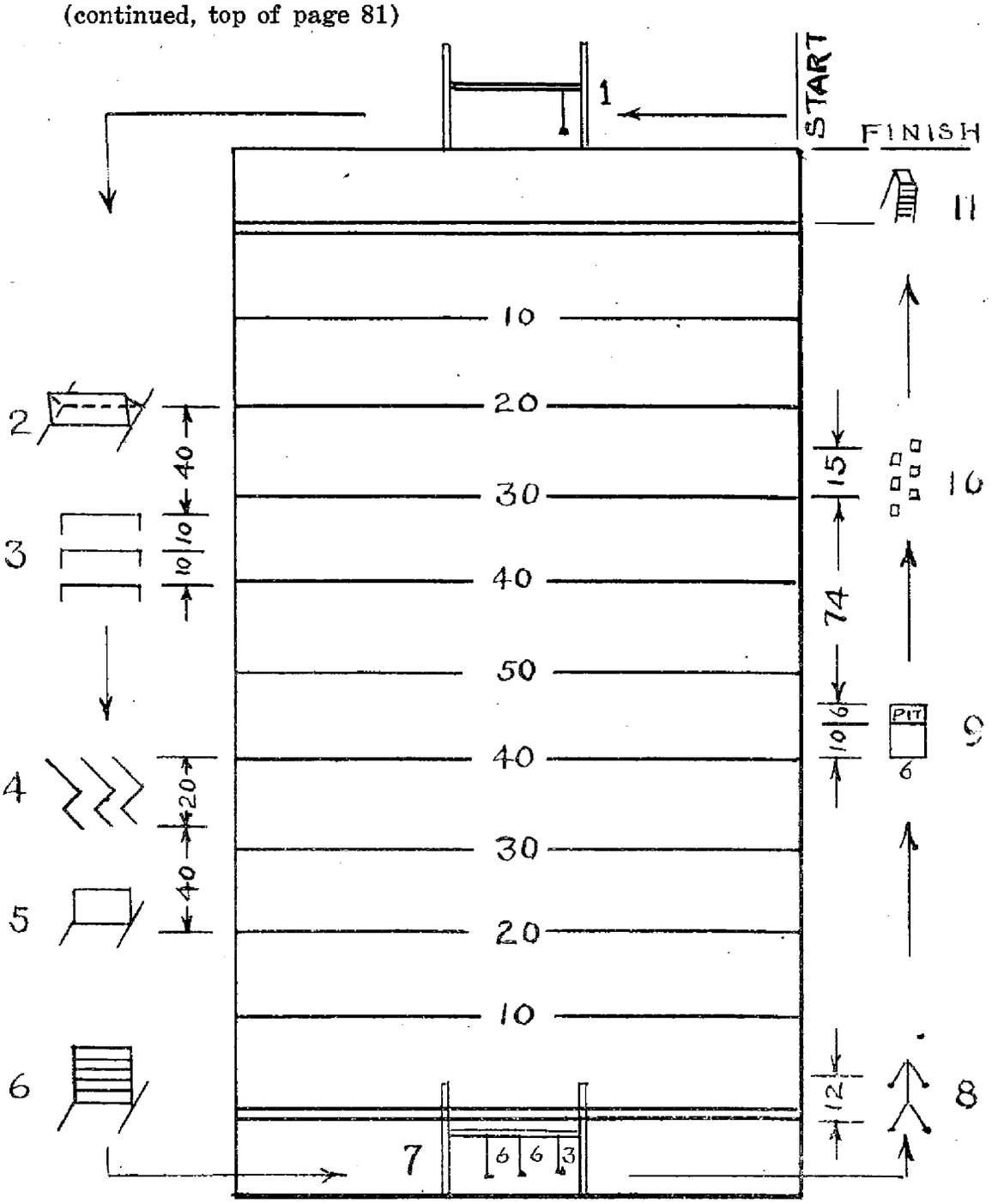



Fig. 20

1. Suspension Hand and Travel, rope 7 ft. long, 18 in. from post.
2. Vault, 6 ft. high, 4 ft. wide.
3. Undercrawl, Over Hurdle, Undercrawl.
4. Maze Run.
5. Hurdle.
6. Wall Scale.
7. Rope Swing on Goal Posts.
8. Balance Beam.
9. Broad Jump.
10. Hedge Hop—Each 20 x 12 x 9 in.
11. Ladder Climb and Jump, 6 ft. high, Platform, 2 ft. square.

The fourth barrier, and there are three obstacles in this group, may be hand vaulted or jumped or hurdled.

The wall is the next obstacle, and any method may be used in getting over it.

The last barrier is the balance beam. The competitor must walk the length of the beam without falling off. If the competitor falls off, he must go back to the start of the balance beam and attempt again to walk the entire length of the beam, without falling off.

After walking the length of the balance beam, the competitor is to run around the single turning post and return to the finish line, which is at a continuation of the starting line. The start and the finish lines are designated by line markings.

The runners may compete two at a time, and the object is to run the course in the shortest time possible. A course record set by some runner offers an incentive for the other runners to better his time.

MINNESOTA OBSTACLE COURSE

Location of Obstacles around Regulation Football Field.

See Fig. 20, p. 80

Illinois Obstacle Course*

| Distance in feet | | Obstacle | Specifications |
|---|---|---|---|
| 60 | 1. | Ditch jump | 10 ft. wide; 2 ft. 6 in. deep |
| 110 | 2. | Double fence vault (hands only) | 4 ft. 6 in. high |
| 160 | 3. | Roost walk (legs only) | Roof top shape |
| 210 | 4. | Fence crawl through | 1 ft. 4 in. opening |
| 260 | 5. | Arm support walk | 1 ft. 6 in. wide (similar to parallel bars) |
| 310 | 6. | Four log hurdles | 15 in. high |
| 360 | 7. | Fence weave | Crawl through 18 in. gap |
| 410 | 8. | Culvert crawl | 27 in. diameter, 21 ft. long |
| 460 | 9. | Wall scale | 7 ft. 3 in. high |
| 510 | 10. | Hedge jump | 3 ft. high |
| 560 | 11. | Stockade climb | Over 10 ft. high and down |
| 610 | 12. | Double mound hurdle | Over 2 ft. into 2 ft. 3 in. dip, over 2 ft. |
| 660 | 13. | Rope climb | Up 12 ft. rope, over top, down 12 ft. rope. |
| 710 | 14. | Log run | 2 ft. 6 in. high, 20 ft. long |
| 760 | 15. | Post vault | Four posts in line, 4 ft. high, 5 ft. 2 in. apart |
| 810 | 16. | Beam hand-over-hand walk | Climb 10 ft. post, swing hand-over-hand 10 ft., come down post |
| 860 | 17. | Double fence roll | Under 15 in. high, 10 ft. apart |
| 910 | 18. | Trench jump | 2 ft. 6 in. deep, over 3 ft. 6 in. far bank |
| 960 | 19. | Grid run (straddle high bar, run over low) | 16 ft. long, 8 spaces |
| 1010 | 20. | Corral climb | 8 ft. 2 in. high, steps 2 ft. apart |
| 1060 | 21. | Low bridge run (stoop over) | 16 ft. long, 3 ft. 6 in. high |
| 1110 | 22. | Log roll over (roll over log on belly) | 5 ft. high |
| 1160 | 23. | Roof run | 16 ft. wide, gabled, 6 ft. ride and 6 ft. drop |
| 1210 | 24. | Maze run | 14 ft. zigzag through |
| 1260 | 25. | Double log leap | 2 ft. 9 in. high, 10 ft. apart |
| 1320 (440 yards) | 26. | Finish, then run back 440 yds. | |

* Designed by S. C. Staley and W. W. Brown, July, 1942.

**OBSTACLE TRAINING FIELD**
**Health and Safety Service**
**Boy Scouts of America**
**See Fig. 21**

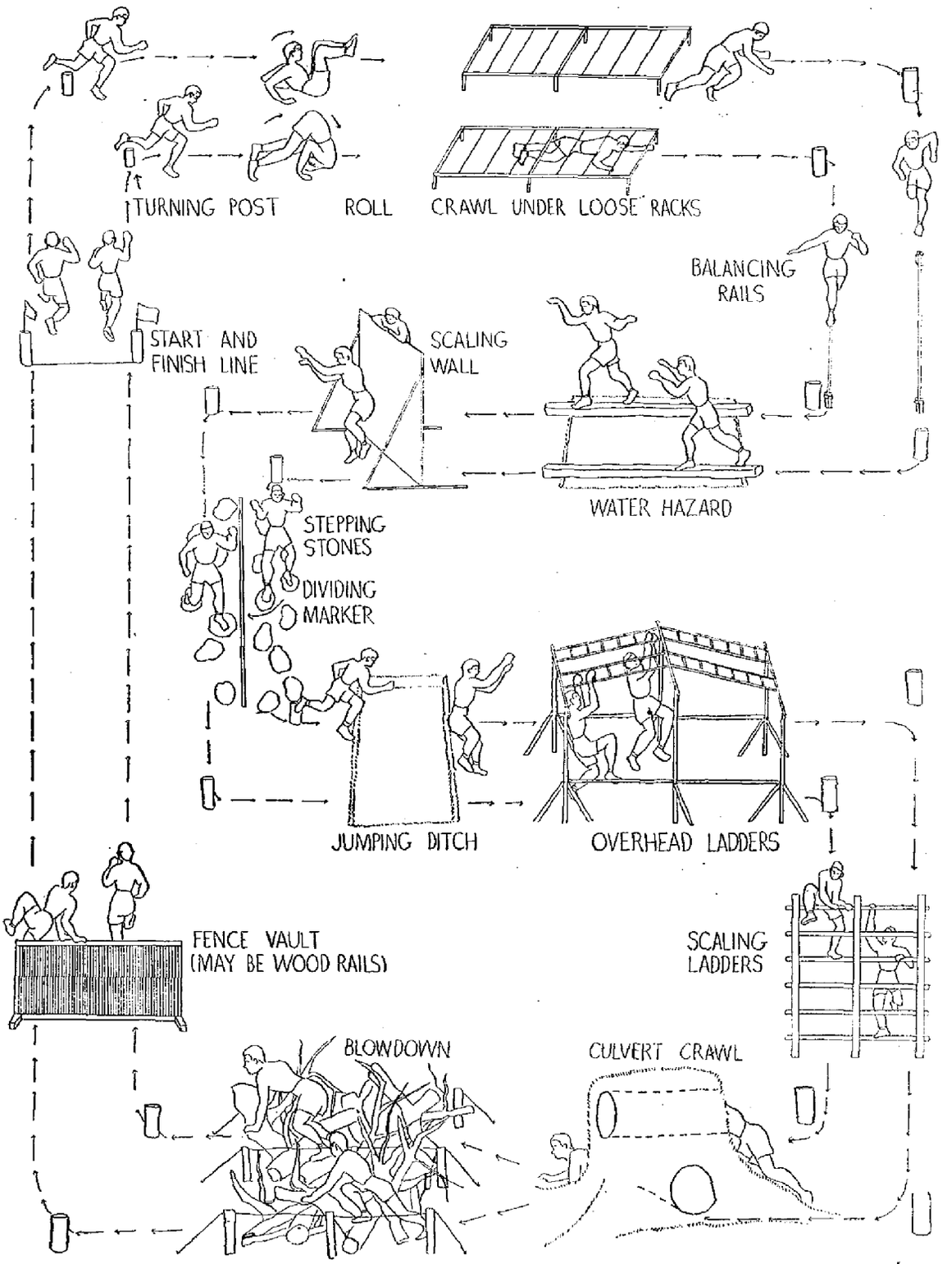



**Fig. 21**

**Each crawl rack should be 5 feet wide and 12 feet long. Logs across the water hazard are 14 to 16 feet long and about 6 inches in diameter. The scaling wall is 7½ feet tall. The ditch is 8 feet wide. The overhead ladders are each 12 feet long, making 24 feet in all. They should be 7 feet high at start and finish, and 10 feet high at the center. The scaling ladders should be 5 feet wide and 9 feet high. The "blowdown" is 20 feet long. This is made up of branches and logs scrambled at random. The vaulting fence is 4 feet high and 5 feet wide. The stepping stones may be of uneven height. They may be made of natural stones, or of segments of tree trunks projecting above the ground from 6 inches to a foot.**

*Suggested Intermediate Course*

1. Scale 6 ft. wall.
2. Jump into and climb out 5 ft. ditch.
3. Climb 10 ft. ladder.
4. Jump into sand pit.
5. Vault 5 ft. fence.
6. Crawl 10 yds.
7. Run 50 yds.
8. Crawl through barrel.
9. Run 50 yds., bent forward.
10. Run three mazes 10 yds. long.
11. Climb up and down 10 ft. inverted V ladder.
12. Jump 7 ft. ditch.
13. Crawl under brush for 20 yds.
14. Run zigzag line of poles 20 yds.
15. Scale two walls; first, 6 ft.; second, 8 ft.; hurdle 4 ft. fence.
16. Run 10 yds. to finish.

*Indoor Course 1*

1. Clear six low hurdles.
2. Vault 4 ft. bar.
3. Forward roll on mat.
4. Climb 8 ft. rope—hands only.
5. Swing on rope over 10 ft. mat.
6. Jump and vault over bars covered with mat.
7. Crawl 50 ft. under benches.
8. Climb stall bars and jump to mat.
9. Carry 50 lb. weight or man two lengths of gym.

*Indoor Course 2*

1. Jump and vault the buck.
2. Run and jump over long horse.
3. Crawl 20 ft.
4. Climb rope.
5. Return to floor and jump 4 ft. bar.
6. Vault parallel bars.
7. Running jump from spring board.
8. Two forward rolls.
9. Crawl across finish line.

Other courses can be designed by teachers and pupils.

## CHAPTER 13

# ROPE JUMPING

Rope jumping has long been considered by athletic coaches to be an excellent activity for body conditioning and agility. It is also an activity through which some techniques of creative endeavor can be learned and practiced. In addition, rope jumping is fun.

The equipment is inexpensive. Small ropes require nine feet of ordinary three-eighth-inch rope. Large ropes require twenty feet of one-half-inch rope.

Work may be conducted in mass, in small groups, or individually.

The following are single techniques with small ropes. In the titles given below, "forward" means that the rope passes from the back to the front over the head. The list given below includes only those techniques in which the rope moves forward. All these techniques can also be done with the rope moving backward.

1. *Forward two count jump.*—Jumping on both feet, jump twice on each circle made by the rope—once over the rope and once when the rope is overhead.
2. *Forward one count jump.*—Jumping on both feet, jump once only on each circle made by the rope—when the rope is on the floor.
3. *Forward one-half count jump, or "doubles."*—Jumping on both feet, jump once while the rope makes two complete circles.
4. *Forward run.*—Run in place. The rope passes under the feet on each step.
5. *Forward hop run.*—Run in place, taking an extra hop on each step. The rope passes under the feet on each step.
6. *Forward double hop on left (or right) foot.*—Standing on the indicated foot, hop twice on each circle made by the rope—once to clear the rope and once when the rope is overhead.
7. *Forward single hop on left (or right) foot.*—Standing on the indicated foot, hop once on each circle made by the rope—to clear the rope.
8. *Forward hop skip.*—Perform a hop skip on alternate feet. The rope passes under the feet on each hop.
9. *Forward squat jump.*—In a squat position, jump on both feet on each circle made by the rope.
10. *Forward crosses.*—Jump on both feet on the first circle made by the rope. Then cross the arms in front, and jump the second circle made by the rope. Continue alternating these two movements. (See middle figure in Figure 25.)

## VARIOUS INTERESTING COMBINATIONS

1. Two boys, face to face or face to back, may work with the same small rope. One turns the rope, and both jump it.
2. All of the techniques with the small rope may be combined with one large rope. The tempo of the small rope may be kept the same as that of the large rope, or it may be accelerated to twice the speed of the large rope.

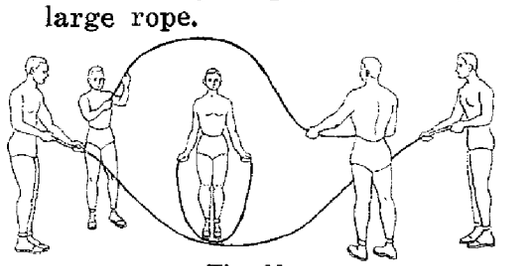


Fig. 22

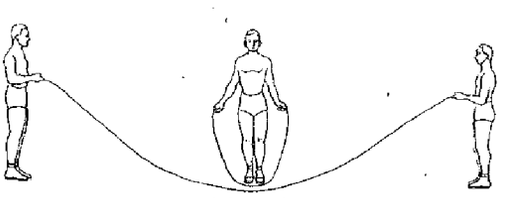


Fig. 23

3. Many of the techniques with the small rope may be combined with two large ropes crossed at right angles. (See Figure 22.)
4. In the "egg beater" type of turning, two turners use two long ropes, turning them in opposite directions. One or two performers jump between the two ropes. (Same as Figure 28, except that the middle boy does not use the small rope.)

It is also possible for a performer with a small rope to jump inside the two long ropes if he faces one of the turners.

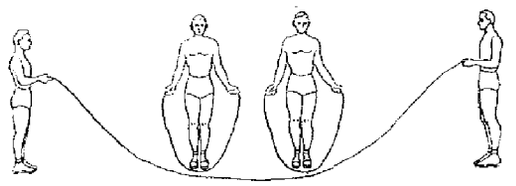


Fig. 24

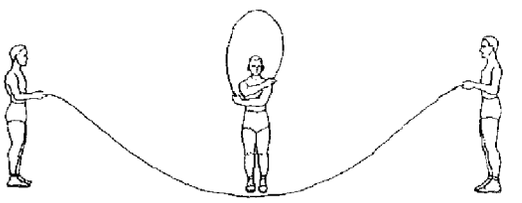


Fig. 25

## SUGGESTED PATTERNS

In addition to the following suggestions, the boys should devise other combinations.

1. The big rope is turned by two persons. A performer with a small rope runs in and jumps both ropes, using first a two-count jump, then a one-count jump. (See Figure 23.)
   For variation, the jumper may speed the small rope to two or three times the tempo of the large rope.
2. The big rope turns once while two boys, each with a small rope, jump a two-count and then a one-count rhythm over their small ropes. (See Figure 24.)

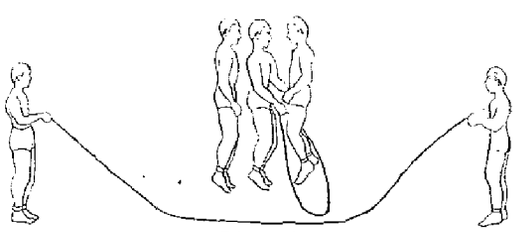


Fig. 26

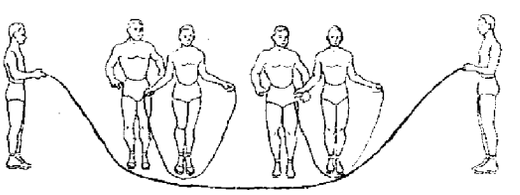


Fig. 27

3. The same as *2*, except that the jumpers jump backward.
4. The big rope turns once while the boy jumps a two-count and then a one-count rhythm with the small rope, first using crossed ropes forward and then backward. (See Figure 25.)
5. The same as *4*, except that the boy stands facing one of the turners.
6. Three boys jump in one small rope. The middle one swings the rope. Both one-count and two-count jumps are used. (See Figure 26.)
7. The big rope is turned in double tempo while the boy does the one-half-count jump (doubles) with the small rope.
8. The trot is done by the boy running in place with the small rope. The tempo of the big rope is increased to meet the tempo of the small rope.

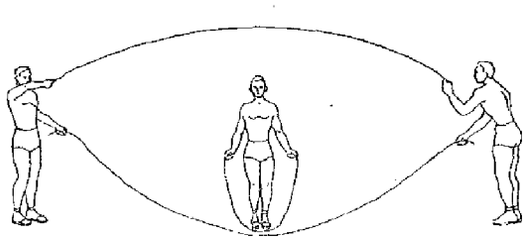


Fig. 28

9. The big rope turns once, while two groups of two performers jump, each group using one small rope. Two-count and one-count jumps are used. (See Figure 27.)
10. In the "egg beater" two long ropes are held parallel and turned in opposite directions. One or two boys go in and jump between the ropes. In a variation of this, one boy goes in with a small rope and faces one of the turners, and does plain jumps, crosses and doubles. (See Fig. 28.)
11. Two long ropes are crossed at right angles to each other. (See Fig. 22.)
    a. A boy goes into the center with a small rope and jumps with a two-count and a one-count rhythm.
    b. Two boys go in with one rope and jump with a two-count and a one-count rhythm.
    c. A boy goes in with a small rope and does crosses, forward and backward.
    d. A boy goes in with a small rope and jumps doubles (one-half count jumps).

## GENERAL SUGGESTIONS

The importance of good turners should be emphasized. Their rhythm must be excellent. They must coöperate with the jumpers. When a performer is being taught to run into the big rope with the small rope, both ropes should be turning in the same direction.

Use wrist action primarily in swinging the ropes. In jumping, push the body up from the floor by a straightening of the knees. When a boy is being taught to run in with the small rope, into the big rope, the ropes should be turning in the same direction.

# Part III

# COMBATIVES, GAMES, AND ATHLETIC ACTIVITIES

## CHAPTER 14

# INFORMAL COMBATIVES

The type of activities listed under this title consists of individual and group contests of a relatively rough and exceedingly strenuous nature. The purpose of such contest is to develop in the boy aggressiveness, initiative, and resourcefulness in contact sports and in personal combat; to train him to develop proper footwork and weight control; and to teach him to react violently with a maximum of energy for the purpose of overcoming an opponent. These contests gradually train the boy to disregard physical pain or discomfort in making an all-out attack. In the teaching of these activities every effort should be made to encourage the boy to make a quick direct attack and to attempt to achieve a victory at once. Frequently in boxing or in wrestling, and in like contests, the individual maneuvers for some time to gain a strategic advantage before throwing himself into violent hand-to-hand combat. In contests such as these, victory if achieved should usually come in a few seconds. Regardless of previously developed habits of maneuvering in such contests, the boys should be instructed to attempt to overthrow the opponent at once. Hence, each boy should be trained to give all he has, for the mental and emotional habits of cool-headed all-out controlled effort may be the difference between success and failure in personal combat in life and death situations later on. Defeats suffered in early practice in such combats will be compensated for by habits of aggressiveness and by quick and adaptive thinking which will grow from such practices.

In the administration of such contests, the physical education teacher, while encouraging the boys to strenuous and violent combat, should guard vigilantly against conduct which might result in injury. Many of the activities, especially standing wrestling practice, will be directly useful in preparing for hand-to-hand fighting. Hence these combative activities should be included in the program from time to time—perhaps two or three times a week during the season—with the less strenuous ones being used at first and then the more strenuous. The ones that are favored by the boys should be used in preference to those not so popular. A spirit of clean play, coupled with an all-out effort to win, should be encouraged.

## ORGANIZATION

These contests are divided into dual, and group or team contests. Many of the dual contests may be given in the usual open-order formation. The exercises in this case should be conducted to command until the procedure is understood. They should later be conducted more informally. Group or team activities are conducted in such group formations as are appropriate to the activity, and these will be discussed in connection with each contest. It is advisable to use a whistle as the signal for beginning and for ending the activity.

1. *Pull-Hands.*—The contestants are matched in pairs, and instructed as follows: Grasp hands and attempt to pull the opponent over to your own position. In grasping hands, grasp the wrists of the opponent so that there is a double grasp with the heels of the hands in contact and with each hand grasping the other's wrist.

   a. One hand; for example, first right hands and later left hands

   b. Both hands

2. *Hop and Pull-Hands.*—Grasp the opponent's hands, and hop on the

forward foot, attempting to pull the opponent. When grasping with the right hand, hop on the right foot.

a. One hand

b. Both hands (hop on either foot)

3. *Pull Neck.*—Grasp the back of the opponent's neck with one hand; for example, grasp the back of the opponent's neck with the right hand. In this case the right foot is forward. Attempt to pull the opponent out of position.

4. *Catch and Pull Tug-of-War.*—A line is drawn on the ground. The group is divided into two teams, one team on either side of the line, and instructed as follows: Attempt to grasp the hand or the wrist of one of the opposite team, and pull him across the line. (This is not necessarily an individual affair, for two or more of one team may gang up on one opponent.) When an individual is pulled across the line, that is, when he touches the ground on the other side of the line, he retires as a prisoner to the rear of his captor's territory. Continue until all of one team have been pulled across the line or until the survivors refuse to engage; that is, if only a few of one team are left on their own side, and they refuse to approach the line closely enough to engage the opponent, declare them defeated. Every effort should be made, however, to discourage such practices. As an informal variation of this, those pulled across the line may join with the opponents in attacking their former comrades, continuing until no one is left on one side.

5. The boys are each provided with a short wand or stick, are arranged in pairs, and instructed as follows:

a. *Stick Pull.*—Grasp the stick with one hand, and attempt to pull the opponent, as in a tug-of-war.

b. *Pull-Stick Tug-of-War.*—Sit on the ground with the soles of the feet in contact, that is, with the right foot of one against the left foot of the opponent. Grasp the stick, and begin with stick over the feet. At the signal try to pull the opponent from his position to his feet.

6. *One Hand Chest Push.*—Stand, with one hand against the opponent's chest. (For example, the right hand will be pressed against the right side of the opponent's chest; in each case the right foot is forward.) Then attempt to push the opponent from his position.

7. *Two Hand Chest Push.*—Same as *6*, with both hands being used.

8. *Chest Push.*—Hold the arms behind the back, and brace the right shoulders and the right sides of the chest against the opponent. Attempt then to push the opponent out of position.

9. *Tug-of-War.*—A rope approximately 100 feet in length should be marked in the middle by a strip of adhesive tape. At the command "Go," each team attempts to pull the other team from its position. A team wins when the mark in the center of the rope has been pulled six feet to either side from its original position. Each end boy may wrap the end of the rope around his body. Longer ropes may be used for larger units. The time of competition for one pull is usually limited to two minutes.

10. *Stick Twist.*—The boys are arranged in pairs, and instructed as follows: Grasp the wand with the right palm upward and the left palm downward. Upon hearing the signal, try to twist the stick to the left, or counterclockwise. (After several contests of this nature, the position of the palms is changed and the twist is to the right, or clockwise.)

11. *Stick Wrestle.*—Same as *10*, except that the contestants wrestle the stick in an attempt to take it away from the opponent, using any means they can devise.

12. *Pull from Referee's Hold.*—The contestants assume what is known as the "Referee's hold" in wrestling, and are instructed as follows: Grasp the back of the opponent's neck with the left hand, and grasp the left elbow with the right hand. In this position, attempt to pull oponent across a line.

13. *Bulling.*—Same as in *12*. Attempt to force the opponent to move one foot by pushing, or by otherwise manipulating.

14. *Rooster Fight.*—Hop on the left foot, with the arms folded across the chest. With the right shoulders and right sides of chests butt the opponent. The object is to make the opponent lose his balance and fall, to unfold his arms, or to touch his free foot to the ground.

15. *Figure Four Rooster Fight.*—Grasp the left foot behind the right thigh with the right hand, and grasp the right upper arm with the left hand. Hop on the right foot, and butt the opponent; or by feinting and sudden evasions, force the opponent to let go the foot or the arm. (The name is derived from the position of the left leg.)

16. *Chinese Rooster Fight.*—Grasp the right ankle with the left hand; place the right hand under the right knee, grasping the right lower leg just below the knee. Hopping on the left foot, force the opponent to fall or to release the grasp upon his foot or leg by butting him or by using the right knee to upset him.

17. The same as *14*, *15*, or *16*, except that the opponents begin the contest inside a twelve-foot circle. If an individual forces his opponent to let go the arms or foot, to touch the free foot to the ground, to fall or to leave the circle, he wins the contest. These contests have the same names, with "circle" added as "Circle Rooster Fight."

18. Engage in either form of Rooster Fight by sides. For example, there may be ten boys on a side. The teams may be designated by having one side remove their shirts. They may engage in individual combat, or two or more individuals may gang up on one opponent. This contest may be in free space, or conducted inside a large circle.

19. *Hand Wrestling.*—The opponents grasp (right or left) each other's hands, with the little fingers interlocked. The right foot is forward, and each boy attempts by pulling, pushing, sideward movements and maneuvering, to force the opponent to move one or both feet from the original position. Change hands after each bout.

20. *Harlequin Wrestling.*—Stand on one foot, holding right (or left) hands. The object is to overbalance the opponent or to force him to put the free foot to the ground. Pushing with the shoulders is not permitted. A modification of this is to require the free foot to be held by the free hand.

21. *Indian Wrestling.*—The contestants lie on the ground, side by side, with their heads in opposite directions, and link right elbows. Upon the signal of the instructor or by mutual agreement, each contestant raises the right leg, with the knee approximately straight, far enough to engage the heel of the opponent. In order to time the engagement of the boys, the individuals usually raise the leg three times rhythmically, and the third time engage the opponent's heel, attempting to roll him over backwards. After each three bouts, change legs.

22. *Poison Snake.*—Draw a circle about four feet in diameter on the floor or ground. A group of from eight to ten boys grasp hands and form a circle around this small circle drawn on the ground. By pulling, pushing, and sudden movements, attempt to force one or more of the boys to step into the circle. Anyone forced to touch the ground inside the circle is "poison"

and withdraws from the circle. The others re-grasp and continue until only one is left. Those forced out frequently are required to run as fast as possible to and around some object fifty yards away and back. When three or four have returned, they form another circle and start over again. Each retiring contestant from the original circle joins in the new circle.

23. *Circle Wrestling.*—This may be dual or team. If dual, circles of approximately twelve feet in diameter should be drawn on the ground; if team, circles should be about twenty-five feet in diameter.

a. *Dual Circle Wrestling.*—The contestant in the smaller circle tries to throw the opponent out of the ring by such methods as lifting and throwing him out, pushing him out, or grasping and swinging him around in a sort of "crack of whip" movement.

b. *Team Circle Wrestling.*—Teams of eight to ten on a side in the larger circle attempt to throw the opponents out of the ring. This may be done by individual combat or by ganging up on one opponent. The contest continues until all on one team have been ejected from the circle.

c. *Double Circle Wrestling.*—Have a small circle drawn inside the large circle. This is about three feet in diameter for dual contests and about six feet for team contests. Repeat the type of contests described in *a* and *b* above, except that the object is to throw the opponent *either* out of the large circle *or* into the small circle.

24. *Line Charging.*—There are two teams of boys from two lines opposite each other, much as in a football line. The two lines should be about one foot apart and the individual boys about a foot apart laterally. On the whistle, Team A attempts to break through the line of Team B. Team B blocks in every conceivable way, except by holding. Team A may use its hands, Team B may not. Team A may not go outside the end boys on Team B (the two ends should be husky boys). After from three to five seconds (usually three seconds at first, five seconds later) the instructor blows his whistle, and the number of boys who have broken through are counted. The procedure is then reversed, with Team B attempting to break through Team A. The winner is the team that has the largest number of boys who have broken through the opponents after five innings. In indoor competition this may be conducted on a line of mats.

25. *Mounted Wrestling.*—The boys fight in pairs. The "rider" sits astride the neck of the "horse," with his lower legs under the "horse's" arms and his feet clasped behind the "horse's" back.

a. *Dual Mounted Wrestling.*—Two pairs of such horse and rider combinations then wrestle, with the object being to unseat the rider or to cause the rider to touch the ground in any way. If both pairs fall at the same time, the rider touching the ground first is the loser.

b. *Team Mounted Wrestling.*—The same procedure is used in team wrestling. Here a team of five to ten pairs of boys engage the other team. This may be in a series of individual combats, or several pairs may gang up on one pair of opponents. This is frequently effective when one horse holds a leg behind the opponent's horse, and another of his own team pushes the opponent across the leg and trips him.

26. *Hog Tying.*—An exceedingly rough contest is provided by giving each boy of a pair a short rope about four feet long, which he fastens around his waist in such a way that it can be jerked loose quickly. Each boy attempts to throw his opponent to the ground and to tie his ankles. This may also be conducted as a team activity where frequently an individual may be thrown by one opponent and tied by another. The one who is doing the tying needs to be on his guard lest an opponent suddenly ties his feet while he is tying

the other's feet. This applies also to individuals who are holding the opponents down. The individual loses and retires from the contest when his feet are tied.

27. *Line Wrestling.*—This is a type of wrestling in which all of the work is done on the feet. The object is to throw the opponent to the ground. The important thing is not pinning an opponent's shoulders to the mat but throwing him off his feet. Hence a number of preliminary procedures should be practiced. They are an excellent training for formal wrestling.

The following types of formal contests in line wrestling are suggested:

28. *Wrestling to Lift Off Feet.*—Maneuver to grasp the opponent with front or rear waist hold, and lift him off his feet.

29. *Wrestling to cause the opponent to touch the ground with something other than with his feet.*

30. *Wrestling to get behind the opponent and to lift him off the ground.*

31. *Wrestling to trip the opponent only.*

32. *Cumberland Wrestling.*—The opponents stand with chests together. The left arm is over the opponent's right shoulder, the right arm under the opponent's left arm—grasping hands behind the back. Attempt to lift the opponent from the ground and/or to throw him to the ground. Holds may be changed after the bout has started.

33. *Collar and Elbow Wrestling.*—Assume the "referee's hold," and do not let go. The object is to make the opponent touch the ground with any part of the body other than the feet. Tripping is permissible.

34. *Team Wrestling.*—Any of the dual contests described above may be conducted on a rotating team basis as follows:

First, rank the members of a team roughly according to ability, and count off. For example, each team may be numbered from one to ten at the beginning. The first pair engages in combat. The loser is immediately replaced by the next boy on his team, who then engages the victor. The victor takes all comers as long as he wins. As soon as he has been defeated, he is replaced by the next boy on his team. This may be continued informally until the instructor calls time, or it may be made a formal contest by requiring them to continue until one boy has conquered five opponents in succession. Obviously, if a better opponent is opposing a poorer one, it is to the advantage of the poorer opponent's team to have him attempt to tire the good opponent while attempting to throw him. The successor may then be able to throw the tired boy. When all of the members of any given team have competed, the first member on the team starts in again.

35. Any of the wrestling contests may be modified as follows:

Wrestling within a circle or square from twelve to fifteen feet across, attempt either to throw the opponent or to force him outside the circle or square.

## CHAPTER 15

## BOXING

The teaching of boxing in high schools should be undertaken only if the conditions can be well controlled. The teacher should be one who is reasonably proficient in the techniques of amateur boxing. This does not mean that he has been a professional or even an amateur competitor in boxing, but that he has carefully studied the techniques of the sport. He must be a man who has absolute control of the boys, and should NEVER permit them to box except in his presence. Boxing is a sport in which, when carelessly administered, injuries are not uncommon.

In high school boxing, it should be remembered that the objective should be to teach the skills without injury to the boys. In view of the fact that blows to the head not infrequently result in subacute brain injuries (known as "punch drunkenness"), care should be taken to prevent such injuries. While such conditions are not too commonly found in high school boxers, every care should be exercised to see that it does not happen to even one boy. In view of the fact that many blows are aimed at the head and the abdomen, adequate protection should be provided. This means several things:

1. The gloves should be adequately large. For boys under 132 pounds in weight, the gloves should be at least twelve ounces in weight, and fourteen ounces is better. For the larger boys, the gloves should be from fourteen to sixteen ounces. The gloves with the thumb sewed to the palm should be used to keep the boy's thumbs from injury.

2. Adequate headgears should be used for protection. The type of headgear used should be one that protects the nose and jaw as well as the ears and forehead and temples. *These headgears should be worn at all times while the boys are boxing, even during competition bouts.* This practice will arouse the opposition of the sporting element who wish to see gore and knock-outs, but it will absolutely protect the boys—and will result in many more boys being interested in studying boxing. *Under no circumstances* should boys be permitted to "fight" without the protective headgear. Mouthpieces need not be worn with the headgear.

3. Protective metal groin cups should be worn inside the supporters when the boys are competing or whenever hard blows are permitted.

4. The boys should not be permitted to hit hard, even when wearing headgears, until they have been well drilled in defensive methods. It is not unusual to find that in the beginning the boys are much better at striking than they are at defense. Hence it is important that they be very well drilled on defense before being permitted to participate in free boxing. While learning, they should hit lightly.

5. Most boys are better with the right hand than they are with the left, and are apt to hit harder with the right. Hence practically all of the early emphasis should be on learning to use the left hand on offense, and both hands on defense and especially on defense against the opponent's right. In a contest, most blows are struck with the left hand; hence it is important that the use of this hand be well taught. The boys should, however, be taught always to be on guard against a sudden righthand blow, for this is often a hard one.

6. Methods of "covering up" and of evading a rushing opponent should be taught rather early so that the boy may get out of trouble if he is rushed by a superior opponent.

7. The teacher should match the boys as evenly as possible, the experts being matched with each other, and boys of approximately the same size being matched together.

8. In high school contests, the rounds should be of only one minute in duration, with one minute of rest. There are three rounds only. Again it should be emphasized that all such contests should be conducted with adequate headgear protection.

9. Boys should be advised at the beginning of the instructional season that they may engage in boxing contests ONLY in bouts managed and administered by the high school. According to the rules of both the high school and the college associations, ANY other boxing, sanctioned or otherwise, *forever* bars the boy from further high school or college boxing. This rigid rule has been proved necessary to minimize the exploitation of the boys by commercial interests. This rule applies to Golden Glove Contests, American Amateur Union boxing, and all other amateur or professional boxing. To prevent attempted exploiting of good boxers by commercial interests, the teachers should be on their guard and should make every effort to prevent such exploitation.

Much valuable information may be obtained from the Official Boxing Guide of the National Collegiate Athletic Association. This is published by A. S. Barnes and Company, 67 West 44th Street, New York, 18, New York. The price is fifty cents.

The teaching of mass or group boxing presents an entirely different problem than the coaching of team or individual boxing. Mass instruction requires the exact use of time, space, and equipment; it means knowledge of proper formations, commands, and terminology, and the use of proper teaching method and technique. A specific lesson plan, covering those drills designed to help the student most quickly master the simple rudiments of boxing without fear of injury, should be followed.

This chapter explains formation and commands to be used in the conduct of the class; describes lesson content and lesson plan; and explains the teaching method, technique, and drills to be used.

*Formation for the Teaching of Boxing*

Small Group—50 or Fewer Students

a. Half Circle
b. Circle
c. Double Circle
d. "V" Formation
e. Line or Double Line

Medium Group—50 to 100 Students

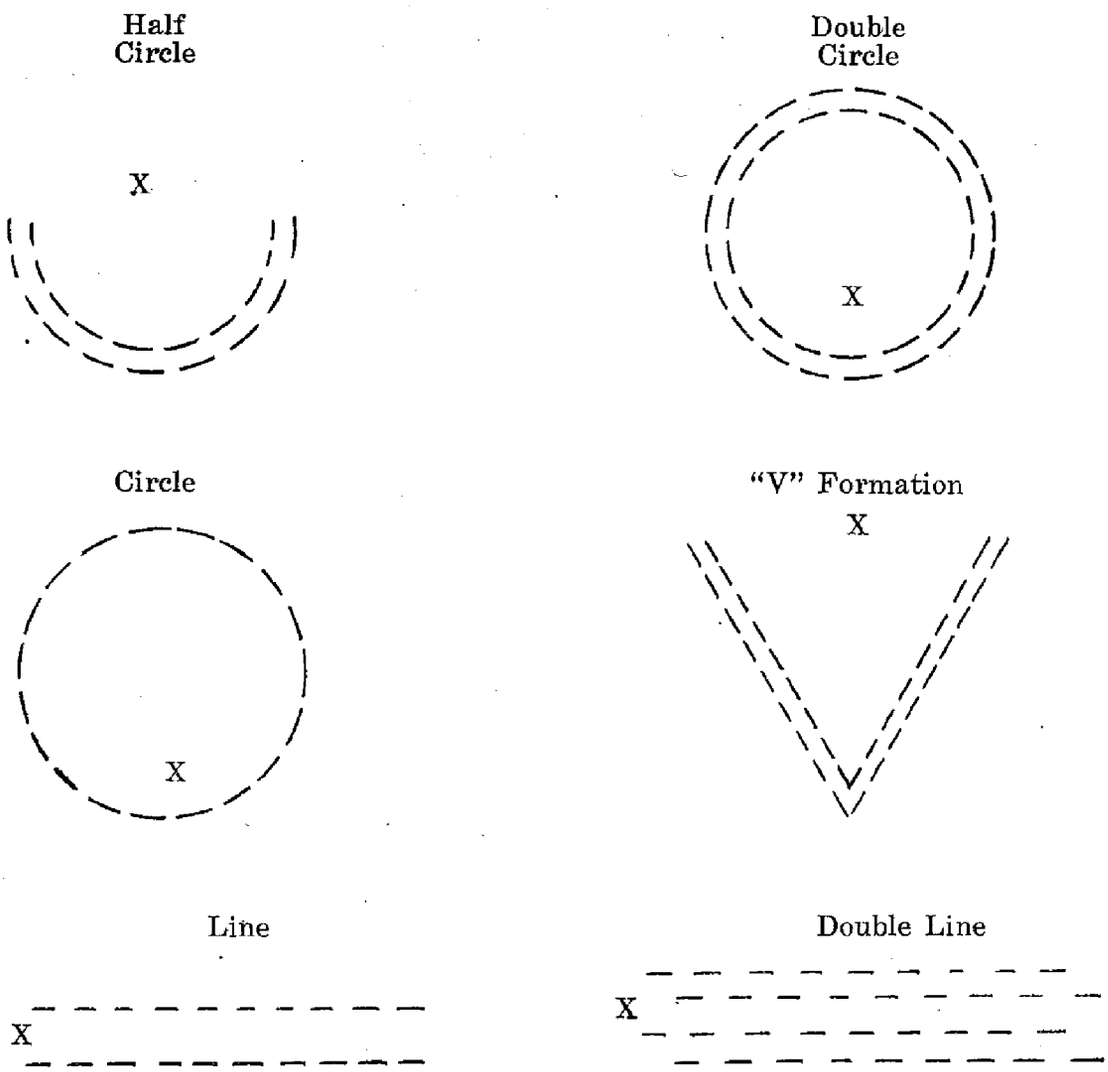
a. Half Circle
b. Circle
c. Double Circle
d. "V" Formation

Large Groups—100 or more Students

Open Formation

For formations illustrated, see Figure 29.

## FORMATIONS ILLUSTRATED




## OPEN FORMATION

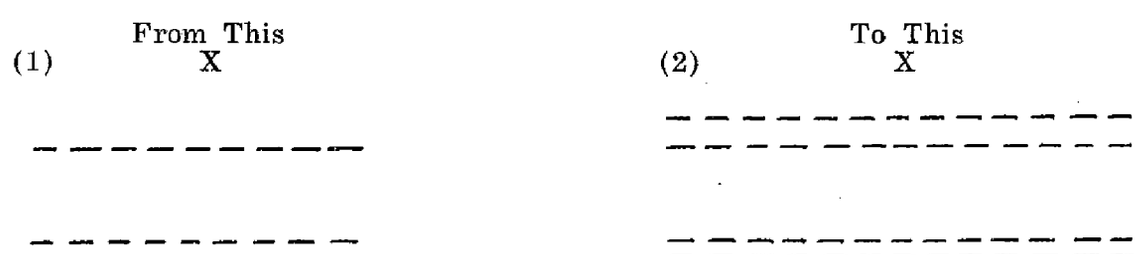



Fig. 29

COMMAND Odd numbers in first squad, 2 steps forward
Even numbers in rear squad, 2 steps backward

The formation used should vary according to the size and shape of the available facilities, and the number of students in the class. The half-circle or "V" formation is probably the easiest to supervise in that the instructor can see the entire class at a glance, and all the students have a clear view of the instructor.

Military commands are best used to get the class into proper formation. The students should assume the formation quickly, coming to a double-arm interval, that is, with both arms extended. This gives proper spacing in which to work. In order that the boys may work in pairs, the inward file should face about and work with those opposite; or if in a single-line formation, after counting off by two's, even numbered boys should work with odd numbered ones.

*Commands*

The tone of the command should convey the type of action desired—a slowly spoken command means slow action; a quick command, quick action. Students should work by command, as it allows the instructor to ascertain quickly those who are not executing the movement properly, and therefore needing help.

Only three kinds of commands are used:
To obtain the "on-guard" position
To control foot movements
To control hand movements

The commands proper are:
"On-guard"—(preparatory)
"Hep"—(command of execution)

For all foot movements the command is as follows:
First and explanatory command such as "Left Step"
Followed by the preparatory command of "Ready"
Followed by the command of execution "Hep"

Samples:
Right Step, Ready, Hep!
Advance, Ready, Hep!
Retreat, Ready, Hep!

(The "Ready" always means to prepare for action; the "Hep" means to act.)

For all hand movements—that is all striking movements—the command is such as "Left Jab, Ready, Strike!" Once the descriptive command has been given, it should be dropped, leaving only the preparatory command, then the command of execution; thus "Ready, Strike!"

*Lesson Content*

The following are the skills in boxing listed according to the progression in which they should be taught:

Lessons 1 to 5 are applicable to junior high school classes; Lessons 1 to 10 to senior high school classes.

Lesson 1. The On-Guard Position .....Drill 1
The Advance
The Retreat
The Right Step .....Drill 2
The Left Step
The Waist Pivot .....Drill 3

Lesson 2. The Straight Left Lead to the Chin .....Drill 4
Blocks—The Stop .....Drill 5
The Parry

*Lesson Plan*

Assemble
Review
Should include new work of the previous day
Include such teaching methods as technique, hitting, and blocking drills
Mass instruction
Controlled boxing
Exercise or training groups—optional if equipment is available

TEACHING METHODS

*Technique Drill*

This includes a detailed explanation and demonstration of each element that goes to make up the movement as well as the whole movement itself.

There should be class drill on each element, gradually combining the elements until the movement is being executed as a whole. Drill should be carried on by command only, students drilling singly while facing instructor. Work slowly at first; speed up as correct performance is obtained.

*Hitting Drill*

This drill is devised to develop punching power. Have the students work in pairs, one using a specific blow while the other holds up his glove hand as a target. All blows should be drilled in this manner, either singly or in combination.

*Blocking Drill*

Once the proper execution of a blow has been learned, and after power has been obtained through hitting drills, a proper defense should be worked out for the blows.

Defense is best learned by having students work in pairs, one using a slow lead blow, while his partner practices the defensive movement, as explained and demonstrated by the instructor. The lead blow should be executed on command.

*Sample Lesson*—45-Minute Period

Assemble—5 minutes
*Review*—15 minutes
The Left Lead (new technique of previous lesson)
Use technique drills first to teach form followed by hitting drills to develop power.
The Blocks—The Stop and Parry (for the Left Lead)
Use blocking drills to develop blocking technique
Instructional Period—15 minutes
*Instructional Period*—15 minutes
The Straight Right (new technique)
Develop through technique and hitting drills
The Blocks for the Straight Right
The Stop
The Leverage Block
Develop through use of blocking techniques
Controlled Boxing
Use three one-minute rounds. At the end of each thirty seconds students should exchange techniques.
*Sample Round*
Round 1
One's—use left lead to chin only
Two's—use straight right to chin only
Round 2
One's—use left to chin only
Two's—use left block only
Round 3
One's—use left and right to chin only
Two's—use left jab to chin only

*Explanatory Material Listed according to Teaching Progression*

The "On-Guard" Position

1. Feet and legs
The feet are in a "walk" position, the left foot ahead of the right with the toe of the right foot about twelve to fourteen inches directly to the right on a line with the left heel. The left foot is flat on the floor turned inward about thirty-five degrees. The left leg is straight, but the knee is not locked. The right leg is bent, and the right heel off the floor. The weight is balanced between both legs.
2. Trunk
The left side of the body forms a straight line with the left leg. The position of the trunk is controlled by the position of the left foot.
3. Elbows
The elbows are carried tight to the body in front of the short ribs.
4. Hands
The left hand is carried shoulder high and to the left as far as possible without the raising of the left elbow. The right hand is carried up and open in front of the right shoulder.
5. Chin
The chin is carried directly forward pinned tightly to the upper chest.

*The Advance*

Move the left foot six to eight inches forward, followed by bringing the right foot quickly to position.

*The Retreat*

Move the right foot six to eight inches backward, followed by bringing the left foot quickly to position.

*The Right Step*

Move the right foot six to eight inches to the right, followed by moving the left foot quickly to position.

*The Left Step*

Move the left foot six to eight inches to the left, followed by moving the right foot quickly to position.

*The Waist Pivot*

1. Have the boys stand so that both feet are in a line, one natural step apart, arms hanging at the sides. From this position have them turn the body first to the right and then to the left, allowing arms to swing freely.

2. Have the boys bend the arms at the elbow, palms turned toward face, from this position to continue the turn.

3. Have the boys reach out across the body with the left hand, palm to the right arm fully extended. On command, have them drive the right hand into extension, replacing the left hand, left arm folding to body.

4. Show the student how to make a fist by placing the fingers in the center of the palm, and closing the hand so that the thumb drops down across the phalanges of the second or third fingers. The thumb side of the hand must be perfectly flat.

5. Have the boys take the "On-Guard" position. Have them drive the left arm out into extension. Continue by command.

*Left Lead to the Chin*

A quarter-turn of the left shoulder forward and to the right and an extension of the left arm.

*The Stop for the Left Lead*

Catch the left lead on the butt of the open right glove, forcing the lead up and outward.

*The Parry for the Left Lead*

Brush inward with the right, forcing the opponent's lead across the body to the left.

*The Straight Right to the Chin*

Shift the weight over an almost straight left leg, turn the right hip and shoulder inward, driving the right arm into extension.

*The Stop for the Straight Right Lead*

Catch the straight right lead in the open palm of the left hand, forcing the lead up and across the body to the right.

*The Leverage Block for the Straight Right Lead*

As the opponent leads a right, raise the left arm up and outward, forcing the blow to the outside.

*The Straight Left Lead to the Body*

Drop the body forward from the waist so that the eyes are directly over the left toe. From this position drive the left hand to opponent's solar plexus.

*The Straight Right to the Body*

Drop the body over the left foot to a position where the right shoulder is directly over the left toe. From this position drive the right hand to the opponent's solar plexus.

*The Forearm Block for Straight Leads to the Body*

As the opponent leads with either straight left or right to the body, drop both arms over the solar plexus, right arm above the left.

*The Elbow Block for Straight Leads to the Body*

As the opponent leads a straight blow to the body, turn and intercept the blow on the elbow. Elbows must be kept close to the body.

*The Brush-away for Straight Leads to the Body*

As the opponent leads a straight blow to the body, brush the oncoming blow outward by dropping the arm inward and downward and catching the oncoming blow with the palm of the hand and forcing it outward.

*The Step-away for Straight Leads to the Body*

As the opponent leads a straight blow to the body, place the left hand on his head, brushing the oncoming blow out of the way with the right hand, and at the same time step backward with the left foot, shifting the weight of the body to the left leg.

The Left *Hook to the Chin*

Shift body weight to the right leg, turning the left hip and shoulder to the right. From this position whip the left arm in an arc for the right shoulder. Left arm maintains a half-bent position at all times.

*The Block for the Left Hook to the Chin*

As the opponent leads a left hook, raise the right arm as if to salute. Keep the hand high, forearm straight with hand, and in a firm position, and push blow outside own right shoulder.

*The Left and Right Uppercuts to the Body*

Drop the body to either the right or left so that the forearm is parallel to the floor. Then turn to a center line and quickly whip the arm up to the solar plexus. Be sure to straighten legs and trunk in order to obtain power.

*Blocks for the Uppercuts*

As the opponent leads an uppercut, brush down and across the body with the palm of the hand catching the blow in the open palm. Use the left brush-away for the right uppercut and right brush-away for the left uppercut.

*Right Hook to the Chin*

Shift the weight over a straight left leg, turn the right hip and shoulder to the right. At the same time raise the right elbow, and swing the right arm in a half-bent position to just above and in front of the left shoulder.

*The Blocks for the Right Hook*

As the opponent starts his right hook, drop the body forward from the waist, dipping both knees forward, causing body to drop under the hook.

*Slipping*

As the opponent leads a straight left, turn the body to the left, shifting the weight over the left leg, allowing the lead to slip over the right shoulder; or turn the body slightly to the right, allowing the blow to slip over the left shoulder.

*Ducking*

As the opponent leads a left hook, drop the body forward from the waist, dipping both knees forward, causing the body to drop under the hook.

*Feinting*

Feinting is any movement of the eyes, hands, body, or legs, used to deceive the opponent as to the intended action.

*Infighting*

Infighting means staying inside and close to the opponent, driving short arm jolts to his midsection. The head is usually placed against opponent's chest, and most of the blows go to the body.

DRILL I—The On-Guard Position

*Technique Drill*

1. Explain and demonstrate the on-guard position.
2. Have the class practice the on-guard position. Command—*On Guard, Hep!*

3. Have the group hold the on-guard position. Correct those who need help. Call attention to common errors.
4. The command to return to position is—*Ready, Front!*

DRILL *II*—The Advance and the Retreat
The Left Step, the Right Step

*Technique Drill*

1. Explain and demonstrate
   The Advance
   The Retreat
2. Have the class practice the slow advance.
   Command—*Advance, Hep!* Shorten to *Hep!*
3. Have the class practice the slow retreat.
   Command—*Retreat, Hep!* Shorten to *Hep!*
4. Explain and demonstrate
   The Left Step
   The Right Step
5. Have the class practice the left step.
   Command—*Left, Step, Ready, Hep!* Shorten to *Ready, Hep* then to *Hep!*
6. Have the class practice the advance, retreat, left and right step. Mix in every possible combination and sequence.
   Command—*Advance, Hep! Retreat, Hep! Right, Step, Hep! Left, Step Hep!*
   Now practice advancing four steps; retreating four steps; left step, four steps; right step, four steps.
   Command—*Ready, Hep!*

DRILL III—The Waist Pivot

*Technique Drill*

1. Explain and demonstrate the Waist Pivot.
2. Have the class practice the turn or pivot, one turn on each command. Once the idea has been developed, allow free practice.
   Command—*Ready, Turn, Turn, Turn, etc., or 1-2-3-4.*
3. Have the class practice the close elbow turn. Allow free practice on the elbow turn.
   Command—*Ready, Turn! or 1-2-3-4,* as above.
4. Have the class practice the arm extension, palm up. Start with left arm extended, right hand lined up directly behind.
   Command—*Ready, Strike!* Shorten to—*Strike!*
5. Have the class practice making a fist. Have them hold the fists in front of the body in order that you may check form. Watch for "loose" thumbs.
6. Have the class practice driving both hands through. Start with left arm in extended position. Give commands with force to keep action moving.
   Command—*Ready, Strike!* Shorten to—*Strike!*
7. Have the class practice driving both hands through, always bringing the thumbs back to a position in front of face.
   Command—*Ready, Strike!* Shorten to—*Strike!*
8. Have the class practice as above, but watching only the returning hand. The hand should always be brought back to a position directly in front of the face.
   Command—*Ready, Strike!* Shorten to—*Strike!*
9. Have the class practice driving both hands through for two minutes. Form must be maintained. Work for speed.
   Command—*Ready, Begin!*

DRILL IV—The Straight Left Lead to the Chin

*Technique Drill*

1. Explain and demonstrate the left jab to the chin
   The extension of the left arm
   The quarter-turn of the body
   The quarter-turn and left arm extension
2. Have the class practice the left jab
   Command—*Left jab, Ready, Strike!* Shorten to—*Strike!*
3. Have the class practice the step-jab. As the jab is delivered with the left hand, step forward with the left foot, foot and hand landing together, right foot remaining in place. As the hand returns to the body, the left foot returns to the proper position.
   Command—*Ready, Strike!*
4. Have the class practice the double jab, two jabs in succession.
   Command—*Double jab, Ready, Strike!*
5. Have class practice the slow advance and left jab. As the left jab is landed, step forward with the left foot, moving right foot immediately to its proper position.
6. Have the class practice the left jab and slow retreat. Step back with the right foot, and as the weight shifts to the right foot, jab the left arm into extension. The left arm returns to the body as the left foot moves to position.
   Command—*Retreat Ready, Strike!* Shorten to *Ready, Strike!*
7. Have the class practice the left jab combined with the right step. As the right step is taken, jab the left arm into extension, as the weight is shifted to the right leg. As the left arm returns to the body, move the left foot to position.
   Command—*Right step, Ready, Strike!*

*Hitting Drill*

1. One's—Hold the right glove, palm open and toward partner, directly in front of the right shoulder.
   Two's on command, drive a left jab to the target.
   Command—*Ready, Strike!* Shorten to—*Strike!*
2. One's—Hold right glove as described above.
   Two's—On command, drive a double left jab to target.
   Command—*Ready, Strike!*
3. One's—Hold both hands, palms open and toward partner, directly off the left and right shoulders, respectively.
   Two's—On command, jab first to partner's right glove, then to his left glove. One blow on each command.
   Command—*Ready, Strike!* (Jab to partner's right glove), *Ready, Strike!* (jab to partner's left glove). Later on command, deliver two jabs consecutively, first to the partner's right glove, then to his left.
   Command—*Ready Strike!* (two jabs in succession).

DRILL V—The Stop Block for the Left Jab to the Chin
The Parry to the Outside Guard Position

*Blocking Drill*

1. One's—on command, lead a slow left jab to the chin.
2. Two's—Practice the stop block for the left jab.
   Command—*On Guard, Hep! Left Jab, Ready Strike!*
3. One's—On command, lead a slow left jab to chin.
   Two's—Practice parrying to the outside-guard position.
   Command—*Ready, Out!* or *Ready, Strike!*

*Defensive Boxing*

1. One's—Use only the left jab to the chin.
   Two's—On defense only. Use of stop block should be stressed.
2. One's—Use only the left jab to the chin.
   Two's—On defense, practicing the outside parry.

*Controlled Boxing*

1. Both men—Use only the left jab to the chin and the stop block.
2. Both men—Use the left jab to the chin and the stop block and the inside guard.
   Command—*Ready, Strike!*

DRILL VI—The Straight Right to the Chin

*Technique Drill*

1. Explain and demonstrate the straight right to the chin.
2. Have the class practice the straight right to the chin.
   Command—*Straight right to the chin, Ready, Strike!* Shorten to *Strike!*
3. Explain and demonstrate
   The *advance* and straight right
   The *retreat* and straight right
   The *left step* and straight right
   The *right step* and straight right
4. Have the class practice the slow advance combined with the straight right.
   Command—*Advance, Strike!* or *One, Two!* On *One,* step forward with left foot to position and drive the right hand into extension.
   The secret of power and timing in a straight right is *in the pushing off with the right foot,* bringing the right foot to position after the left step has been taken and the blow delivered. The right foot is moved forward just after the right hand is driven into complete extension.
5. Have the class practice the slow retreat and straight right. As the weight shifts to the right leg momentarily, the right hand is driven into extension.
   Command—*Retreat, Strike!* or *One, Two!* On One, step back with the right foot; on Two, drive the right arm into extension, then recover with the left foot.
6. Have the class practice the left step and straight right. As the weight shifts to the left foot, drive the right hand into extension, then move right foot to position.
7. Have the class practice the right step and straight right. As the weight shifts to the straight right leg, drive the right hand into extension.
   Command—*Right, Step, Ready, Strike!* or *One, Two!* On One, step with the right foot to the right; on Two, drive the right hand into extension, then move the left foot to position.
8. Have the class practice the different foot movements while delivering right handed blows.
   Command—*Advance, Strike! Retreat, Strike! Left, Step, Strike! Right, Step, Strike!*

*Hitting Drill*

1. One's—Hold the right glove open, directly in front of the right shoulder, palm open toward partner.
   Two's—On command, drive a straight right to partner's glove.
   Command—*Ready, Strike!*

2. One's—as above
   Two's—Step in, and drive a right hand to partner's glove. Be sure to move in with right foot.
   Command—*Ready, Strike!*

*Controlled Boxing*

1. One's—Use only a straight right to the chin.
   Two's—Use only a left jab to the chin.
2. One's—Use only a straight right to the chin.
   Two's—Use only a left hook to the chin.
3. One's—Use only a left jab to the body.
   Two's—Use only a straight right to the chin.
4. One's—Use only a left uppercut to the body.
   Two's—Use only a straight right to the chin.
5. One's—Use only a left hook to the chin, and a straight right to the chin.
   Two's—Use only a left jab to the chin, and a straight right to the chin.
6. One's—Use only a left jab to the chin and a straight right to the chin.
   Two's—Use only a left uppercut to the body and a straight right to the chin.
7. Both boys—Use only a left jab to the chin and a straight right to the chin.
8. Both boys—Use only a left jab and a left hook to the chin.

DRILL VII—The Defense for a Straight Right to the Chin

The Stop and the Leverage Block for the Straight Right to the Chin

*Technique Drill*

1. Explain and demonstrate
   The Stop and the leverage block for the straight right to the chin.
2. Have the class practice the movement of the stop.
   Command—*Ready, Block!* or *Ready, Guard!*
3. Have the class practice the movement of the leverage block for the straight right to the chin.
   Command—*Ready, Block!* or *Ready, Guard!*

*Blocking Drill*

1. One's—On command, lead straight right to the chin.
   Two's—Practice the stop for the straight right.
   Command—*Ready, Strike!*
2. One's—On command, lead a straight right to chin.
   Two's—Practice the leverage guard.
   Command—*Ready, Strike!* Have boys work at close proximity in this drill.

*Defensive Boxing*

1. One's—Use a straight right to the chin.
   Two's—On defense only.
2. One's—Use a straight left and right to the chin.
   Two's—On defense only.
3. One's—Use a straight left and right to the chin, and a left hook to the chin.
   Two's—On defense only.
4. One's—Use a straight left and right to the chin, left hook to the chin, and left jab to the body.
   Two's—On defense only.

*Controlled Boxing*

1. One's—Use only a left jab to the chin.
   Two's—Use only a straight right to the chin.
2. One's—Use only a left jab to the body and a straight right to the chin.
   Two's—On defense only.

DRILL VIII—The Straight Left Lead to the Body

*Technique Drill*

1. Explain and demonstrate the left jab to the body.
2. Have the class practice a left jab to the body.
   Command—*On guard, Left Jab to the Body, Ready, Strike!* Shorten to *Ready, Strike!*
3. Have the class practice lunging one step forward as they jab for the body, recovering immediately.
   Command—*Ready, Strike!*
4. Have the class practice the left jab to the body while using the slow advance.
   Command—*Ready, Strike!* Shorten to *Strike!*

*Hitting Drills*

1. One's—Hold the right glove, palm open, in front of the solar plexus.
   Two's—On command jab to the body.
   Command—*Left Jab to the Body, Ready Strike!* Shorten to *Ready, Strike!*
2. One's—Hold the right glove, palm open in front of the solar plexus, left glove somewhat to the left of solar plexus.
   Two's—On command, jab first to partner's right glove, and then to his left glove. On the first command, jab to the left, on the next command jab to the right. One command for each blow.
   Command—*Left Jab to Body, Ready, Strike!*
3. One's—Hold hands in the same position as in the above drill.
   Two's—On command, jab twice in succession to body. The first to the left, the second to the right.
   Command—*Ready, Strike!* (Two Blows)

*Defensive Boxing*

1. One's—Use only the left jab to the body.
   Two's—On defense only.
2. One's—Use only the left jab to the chin.
   Two's—On defense only.
3. Both boys—Use only left jab to face or body.

*Controlled Boxing*

1. One's—Use only the left jab to the chin.
   Two's—Use only the left jab to the body.
2. One's—Use only the left jab to the chin, and the left jab to the body.
   Two's—Use only the left jab to the body.
3. Both boys—Use the left jab to the chin and body.

DRILL IX—The Straight Right to the Body

*Technique Drill*

1. Explain and demonstrate the straight right to the body.
2. Have the class practice the straight right to the body.
   Command—*Ready, Strike!*
3. Explain and demonstrate stepping in with a straight right to the body. Step forward, driving the right hand to the solar plexus. The left

hand is held in front of the chin ready for the opponent's counter. Recover the on-guard position quickly.

4. Have the class practice stepping in with the straight right to the body.
   Command—*Straight Right to Body, Ready, Strike!*
   Recovery must be immediate.

*Hitting Drills*

1. One's—Hold the right glove directly in front of the solar plexus, palm open and toward opponent.
   Two's—On command, practice the straight right to the body.
   Command—*Ready, Strike!*

*Controlled Boxing*

1. One's—Use only the left hook to the chin.
   Two's—Use only the straight right to the body.
2. One's—Use only the straight right to the chin.
   Two's—Use only the straight right to the body.
3. One's—Use only the left uppercut to the body.
   Two's—Use only the straight right to the body.
4. One's—Use only the left hook to the chin.
   Two's—Use only the straight right to the body.
5. One's—Use only the right hook to the chin.
   Two's—Use only the straight right to the body.

DRILL X—Defense for the Left Jab or Straight Right to the Body

The Elbow Block, The Forearm Block, The Brush-away, The Step-away

*Technique Drill*

1. Explain and Demonstrate
   The Elbow Block
   The Forearm Block
   The Brush-away
   The Step-away
2. Have the class practice the movement of the elbow block.
   Command—*Ready, Turn!*
3. Have the class practice the movement of the forearm block.
   Command—*Ready, Fold!*
4. Have the class practice the movement of the brush-away.
   Command—*Ready, Brush!*
5. Have the class practice the foot movement of the step-away.
   Command—*Ready, Shift!*

*Blocking Drills*

1. One's—On command, lead a left jab, or straight right to the body.
   Two's—Practice the elbow block.
   Command—*Ready, Strike!*
2. One's—On command, lead a left jab, or straight right to the body.
   Two's—Practice the brush-away.
   Command—*Ready, Strike!*
3. One's—On command, lead a left jab, or straight right to the body.
   Two's—Practice the brush-away.
   Command—*Ready, Strike!*
4. One's—On command, lead a left jab, or straight right to the body.
   Two's—Practice the step-away.
   Command—*Ready, Strike!*

*Defensive Boxing*

1. One's—Use only the left jab to the body.
   Two's—On defense only.
2. One's—Use either a left jab to the head, or a left jab to the body.
   Two's—On defense only.

*Controlled Boxing*

1. One's—Use only the left jab to the body.
   Two's—Use only the left jab to the chin.
2. One's—Use only the left jab to the chin or body.
   Two's—Use only the left jab to the body.

DRILL XI—The Left Hook to the Chin

*Technique Drill*

1. Explain and demonstrate the left hook to the chin.
2. Have the class practice the left hook to the chin.
   Command—*Ready, One!* or *Ready, Pivot!* Turn the body to the right, shifting to the right foot.
   Command—*Ready, Two!* Turn away from the left hand which remains stationary, left elbow raised slightly.
   Command—*Ready, Three!* Whip the left arm in an arc to the right shoulder. Now shorten the command to two counts. *Ready, One*—Two! On One, pivot the body to right, shifting the weight to the right foot, at the same time raising the left elbow to the proper hook position; on Two, whip the left arm to the right shoulder. The final command should be *Ready, Strike!* Insist that the hip and shoulder turn to the center line before the arm is pulled to the right shoulder. This is a power blow and demands forceful execution.

*Hitting Drill*

1. One's—Hold the left glove directly off the left shoulder, palm open and turned inward.
   Two's—On command, hook a hard left to partner's open glove.
   Command—*Ready, Strike!*
2. One's—Hold the left glove in the position described above.
   Two's—On command, drive two left hooks to partner's open glove.
   Command—*Ready, Strike!*

*Controlled Boxing*

1. One's—Use only the left hook to the chin.
   Two's—Use only a left jab to the chin.
   Both boys—Use the left jab to the chin, and the left hook to the chin.

DRILL XII—Defense for the Left Hook to the Chin
The Forearm Block

*Technique Drill*

1. Explain and demonstrate
   The forearm block
2. Have the class practice the forearm block.
   Command—*Ready, Block!*

*Blocking Drill*

1. One's—On command, hook the left to the chin.
   Two's—Practice the forearm block.
   Command—*Ready, Block!* or *Ready, Strike!*

*Defensive Boxing*

One's—Use only the left hook to the chin.
Two's—Use only the left jab to the chin.

*Controlled Boxing*

1. One's—Use only the left hook to the chin.
   Two's—Use only the left jab to the chin.
2. One's—Use only the left hook to the body.
   Two's—Use only the left jab to the chin.
3. One's—Use only the left jab and the left hook to the chin.
   Two's—Defense only.
4. One's—Use only the left jab and the left hook to the chin.
   Two's—Use only the left jab to the chin and body.

DRILL XIII—The Left Uppercut to the Body

*Technique Drill*

1. Explain and demonstrate the left uppercut to the body.
2. Have the class practice the left uppercut to the body.
   Command—*Ready, One, Two, Three!* On One, drop directly to the left; on Two, pivot to right so the left hand, palm up, is directly at the middle of the body; on Three, straighten the knees, lift the trunk upward, and whip the left hand, palm up, to opponent's solar plexus.

*Hitting Drill*

1. One's—Hold the open left glove turned downward, directly in front of the left hip.
   Two's—On command, whip a left uppercut to partner's open left glove.
   Command—*Ready, Strike!*
2. One's—Hold both gloves, palm downward, and open off the left and right hips, respectively.
   Two's—On command, whip a left uppercut to partner's left glove, then follow with a left uppercut to his right glove. One uppercut on each command.
   Command—*Ready, Strike!* (Two blows).

*Defensive Boxing*

One's—Use only the left uppercut to the body.
Two's—Defensive only.

*Controlled Boxing*

1. One's—Use only a left hook to chin.
   Two's—Use only a left uppercut to the body.
2. One's—Use only a straight left to chin.
   Two's—Use only a left uppercut to the body.
3. One's—Use only a left jab to the body.
   Two's—Use only a left uppercut to the body.

DRILL XIV—The Right Uppercut to the Body—The Right Uppercut combined with Footwork

*Technique Drill*

1. Explain and demonstrate
   The right uppercut to the body.
   The right uppercut to the body, combined with the advance, combined with the retreat, combined with the left and right step.
2. Have the class practice the right uppercut to the body.
   Command—*Ready, One, Two, Three!* On *One*, drop the body directly

to the right, forearm parallel to the floor, palm upward; on *Two*, turn the body through to the center line; on *Three*, straighten the body and whip a right uppercut to the solar plexus. Shorten the command to *Ready, Strike!*

3. Have the class practice the right uppercut and advance.
   Command—*Advance, Strike!*
4. Have the class practice the right uppercut and retreat.
   Command—*Ready, Strike!*
5. Have the class practice the left step and right uppercut.
   Command—*Ready, Strike!*
6. Have the class practice the right uppercut and right step.
   Command—*Ready, Strike!*
7. Have the class practice all foot movements combined with the right uppercut.
   Command—*Advance, Strike! Retreat, Strike! Left, Step, Strike! Right, Step, Strike!*

*Hitting Drill*

1. One's—Hold the right glove directly in front of the solar plexus, palm open, and downward.
   Two's—On command, practice the right uppercut to the glove.
   Command—*Ready, Strike!*
2. One's—Hold both gloves directly off the left and right hips, respectively, palms open and downward.
   Two's—On command, practice the right uppercut to the glove. One blow, one command.
   Command—*Ready, Strike!* Drive the right uppercut to the right glove. On next command, drive the right uppercut to the left glove.
3. One's—Hold gloves as described above.
   Two's—On command, practice the left uppercut, followed by the right uppercut.
   Command—*Ready, Strike!* Drive the left uppercut to the left glove. Later, on the command of *Ready, Strike!*, drive the left uppercut to the left glove, and the right uppercut to the right glove in succession.

*Blocking Drill*

1. One's—On command, practice the right uppercut to the solar plexus.
   Two's—Practice blocking the uppercut with the left brush-away.
   Command—*Ready, Strike!*

*Defensive Boxing*

1. One's—Use a right uppercut to the body.
   Two's—on defense only.
2. One's—Use both the left and right uppercuts to the body.
   Two's—on defense only.

*Controlled Boxing*

1. One's—Use only a left jab to the chin.
   Two's—Use only a right uppercut to the body.
2. One's—Use only a straight right to the chin.
   Two's—Use only a right uppercut to the body.
3. One's—Use only a left jab to the body.
   Two's—Use only a right uppercut to the chin.
4. One's—Use only a left uppercut to the body.
   Two's—Use only a right uppercut to the body.

DRILL XV—Defense for Left and Right Uppercuts to Body
The Brush-Away, The Forearm Block, The Step Back

*Technique Drill*

1. Explain and demonstrate
   The Brush-Away
   The Forearm Block
   The Step Back
2. Have the class practice the brush-away.
   Command—*Ready, Brush,* or *Ready, Hep!*
3. Have the class practice the forearm block.
   Command—*Ready, Block!* or *Ready, Hep!*
4. Have the class practice the step back.
   Command—*Ready, Move!* or *Ready, Hep!*

*Blocking Drill*

1. One's—On command, lead a left or right uppercut to the body.
   Two's—Practice the brush-away defense.
   Command—*Ready, Strike!* or *Ready, Brush!*
2. One's—On command, lead a left or right uppercut to the body.
   Two's—Practice the forearm block.
   Command—*Ready, Strike!* or *Ready, Brush!*
3. One's—On command, lead a left or right uppercut to body.
   Two's—Practice the step back.
   Command—*Ready, Strike! Ready, Move!* or *Ready, Step!*

*Defensive Boxing*

1. One's—Use only left uppercut to body.
   Two's—On defense; use the brush-away only.
2. One's—Use only the right uppercut to the body.
   Two's—On defense; use the forearm block only.
3. One's—Use only the left uppercut to the body.
   Two's—Use the stop block only.

*Controlled Boxing*

1. One's—Use only the left jab to the chin.
   Two's—Use only the left uppercut to the body.
2. Both boys—Use only the left uppercut to the body.
3. One's—Use only a left jab to the chin.
   Two's—Use only a right uppercut to the body.
4. One's—Use only a straight right to the chin.
   Two's—Use only a right uppercut to the body.
5. One's—Use only a left uppercut to the body.
   Two's—Use only a left jab to the body.
6. One's—Use only a left uppercut to the body.
   Two's—Use only a right uppercut to the body.

DRILL XVI—Right Hook to the Chin

*Technique Drill*

1. Explain and demonstrate the right hook to the chin.
2. Have class practice the right hook to the chin.
   Command—*On Guard, Ready, Strike!*
3. Explain the coördination of the right hook with the fundamental foot movements: The Advance, The Retreat, The Right Step, The Left Step.
4. Have class practice the right hook and advance. Step with the left foot. As the right foot is moved to position, hook the right hand in an arc for the left shoulder.
   Command—*Ready, Strike!*
5. Have class practice the retreat and right hook to the chin. Move one step to the right with the right foot. As the left foot is moved

to position, hook the right in an arc for the left shoulder. Carry the left hand high.
Command—*Ready, Strike!*

6. Have the class practice the right step and right hook to the chin. Step to the right with right foot, and quickly move the left foot to position. As the weight shifts to the left leg, hook the right hard to the chin.
Command—*Ready, Strike!*
7. Have class practice the left step and right hook to chin. Step left with the left foot. As the right foot is moved to position, raise the right elbow and hook hard to the left shoulder. Hold the left hand high in position of guard.
Command—*Ready, Strike!*
8. Now combine the right hook with all of the foot movements.
Command—*Advance, Strike! Retreat, Strike! Left Step, Strike! Right, Step, Strike!*

*Hitting Drill*

1. One's—Hold the right hand directly off the right shoulder, palm open and turned inward.
Two's—On command, practice the right hook to the glove.
Command—*Ready, Strike!*
2. One's—Hold both hands directly off the left and right shoulders, respectively, palms open and turned inward.
Two's—On the first command, drive a left hook to the left glove; on the next command, drive a right hook to the right glove.
Command—*Ready, Strike! Ready, Strike!*
3. One's—Hold hands as described above.
Two's—On command, hook a left to partner's left glove and follow immediately with right hook to partner's right glove.
Command—*Ready, Strike!* Two Blows.
4. One's—Hold the right open, palm down, directly in front of solar plexus. Hold the left hand off left shoulder, palm open and turned inward.
Two's—On command, drive a left uppercut to left glove, and right hook to the right glove.
Command—*Ready, Strike!* (left uppercut) *Ready, Strike!* (right hook
One command, one blow.
Command—*Ready, Strike!* (two blows, left uppercut followed by right hook).

*Defensive Boxing*

1. One's—Use only a right hook to the chin.
Two's—On defense only.

*Controlled Boxing*

1. One's—Use only the left hook to the chin.
Two's—Use only a right hook to the chin.
2. One's—Use only a left jab to chin.
Two's—Use only a right hook to chin.
3. One's—Use only a straight right to chin.
Two's—Use only a right hook to chin.

DRILL XVII—The Defense for the Right Hook to Chin—The Stop

*Technique Drill*

1. Explain and demonstrate the Stop.
2. Have the class practice the movement of the Stop.
Command—*Ready, Stop;* or *Ready, Hep!*

*Blocking Drill*

1. One's—On command, lead a right hook to the chin.
   Two's—Practice the stop for the right hook to the chin.
   Command—*Ready, Strike!* or *Ready, Stop!*

*Defensive Boxing*

1. One's—Use a right hook to the chin.
   Two's—On defense only.

*Controlled Boxing*

1. One's—Use only a left jab to the chin.
   Two's—Use only a right hook to the chin.
2. One's—Use only a left hook to the chin.
   Two's—Use only a right hook to the chin.

DRILL XVIII—Slipping to the Inside Guard Position on a Left Jab—Slipping to the Outside Position on a Left Jab

*Technique Drill*

1. Explain and demonstrate
   Slipping to the inside guard position.
   Slipping to the outside guard position.
2. Have the class practice slipping to the inside guard position.
   Command—*Ready, Hep!* or *Ready, In!*
3. Have class practice slipping to either the inside or outside guard position.
   One's—Hold left arm in extended jab position.
   Two's—Slip either to the inside guard position or to the outside guard position as indicated by command.
   Command—*Ready, In! Ready, Out!*
4. One's—As above.
   Two's—Lead a left jab to the chin. Start slowly and speed up as movement is perfected.

*Defensive Boxing*

1. One's—Use only a left jab to chin.
   Two's—On defense only, using the inside slip.
2. One's—Use only a left jab to the chin.
   Two's—On defense only, using the outside slip.
3. One's—Use only a left jab to the chin.
   Two's—On defense only, slipping to either the inside or outside guard position.

*Controlled Boxing*

1. One's—Left jab to chin only. Defensive technique, slipping to inside or outside guard position.
   Two's—Left jab to chin only. Defensive technique, as required.

DRILL XIX—Feinting

*Technique Drill*

1. Explain and demonstrate the following body feints
   The arm swing
   The knee feint
   The body drop
   The side bend
2. Have the class practice the arm swing, as follows:· Have the class advance forward, using the step of the body to cause a swing of the

left arm. Action must be free and cannot be given by command, except the general command for advance.
Command—*Ready, Advance!* Allow the left arm to swing free.

3. Have the class practice the knee feint. This is best done by having them advance slowly forward, and then on the command of feint, have them bend the knees as if to strike.
Command—*Ready, Feint!*
4. Have the class practice the draw back feint while shuffling forward, slightly drawing back one arm as though about to strike.
Command—*Ready, Feint!*

*Defensive Boxing*

1. One's—Use only the up-down feints with both the left and right hand. Here the boy first feints for the head, then the body.
Two's—On defense only.
2. One's—Use either the draw-back feint or the shift feint. The shift feint is one in which the boy turns slightly away, raises his right elbow, delivers a right hook.
Two's—On defense only.
3. Both boys—Use only the body feints in combination with the left jab.

DRILL XX—Feinting

*Technique Drill*

1. Explain and demonstrate the following arm feints
The up-down feints, both hands
The draw-back feint
The shift feint
The specific arm feints
2. Have the class practice the up-down fieint, using the left hand.
Command—*Ready, Feint Up! Feint Down!* Have the boys advance slowly forward while learning the feints.
3. Have the class practice the up-down feints, using the right hand.
Command—*Ready, Up!* or *Ready, Down!* or *Feint Up!* or *Feint Down!*
4. Have the class practice the draw-back feint, while shuffling forward.
Command—*Ready, Feint.*

*Defensive Boxing*

1. One's—Use only the up-down feints with both the left and right hand.
Two's—On defense only.
2. One's—Use either the drawback or the shift feint.
Two's—On defense only.

DRILL XXI—The Safety Clinch; The Biceps Hold; The Double Lock; Arm Encirclement; Spinning out of a Clinch

*Technique Drill*

1. Explain and demonstrate
The safety clinch
The biceps hold
The double lock
Arm encirclement
Spinning out of a clinch
2. Have the class practice the safety clinch.
One's—On command, step forward and swing a wide left hook.
Two's—Practice the safety clinch. In this clinch, as the opponent leads, the boy desiring to clinch slips inside the elbow, and starts both hands for opponent's shoulders with a sort of breast stroke move-

ment. The left hand is then slid down opponent's right arm to the elbow, where the hand grasps the biceps, and the left hand slides down opponent's left arm, and pulls it under own armpit, and grasps opponent's arms above the elbow. Weight is placed on opponent's left arm. As opponent tries to break away, he may be spun off balance to his right by using his left arm as a lever.
Command—*Ready, Strike! or Ready, Clinch!* Have the boys hold the clinch until the command is given to break.

3. Have the class practice the biceps hold. In this clinch, the open palms grasp opponent's biceps just above the elbows. The boxer clinching should swing opponent off balance.
One's—On command, lead a wide left swing to the chin.
Two's—Practice the biceps hold.
Command—*Ready, Clinch!* Followed by *Ready, Break!*
4. Have the class practice the double lock. In this clinch, opponent's arms are forced up under the armpits, and the hands are locked in front of body.
One's—On command, lead a wide left hook.
Two's—Practice the double lock.
Command—*Ready, Swing!* or *Ready, Clinch!* Followed by *Ready, Break!*
5. Have the class practice the arm encirclement clinch. Here both arms are thrown around opponent, and he is held tightly. Arms should be outside opponent's arms. Head and body should be held close to opponent.
One's—On command, lead a wide left swing to the chin.
Two's—Practice arm encirclement.
Command—*Ready, Clinch!* or *Ready, Swing!* Followed by *Ready, Break!*
6. Have the class practice the safety clinch.
One's—On command swing a wide left hook to the chin.
Two's—Practice the safety clinch.
Command—*Ready, Swing!* or *Ready, Break!* On breaking, spin the opponent out of the clinch, either to the right or to the left.

*Defensive Boxing*

One's—Practice the left jab to the chin.
Two's—On defense only, making use of the clinch.

DRILL XXII—Infighting Technique, Shifting with the Opponent, Shifting the Attack to Head

*Technique Drill*

1. Explain and demonstrate
Infighting technique
Shifting with the opponent, punching with left when he leads with right, and vice versa
Shifting the attack to the head when opponent drops his guard.
2. Have the class practice the infighting technique
Command—*Ready, Begin!* Have boys drive both hands to body, until the command of *Ready, Stop!*
3. Have the class practice shifting with an opponent.
One's—As the opponent leads a left, drive a short right uppercut inside.
Two's—Drive left and right uppercut to body.
Command—*Ready, Strike!*
4. Have class practice shifting the attack to the head.
One's—On command, lead a slow left jab, allowing partner to obtain the inside position. When partner starts driving uppercuts to the

body, drop the arm to protect the body.
Two's—On opponent's left lead, slip to the inside position and start the body attack. As the partner drops his hands to block the body blows, shift the attack to the head by driving the right hand to the opponent's right shoulder and spinning him into a left hook that follows immediately; or by driving a left arm to the opponent's left shoulder, and spinning him into a right hook that follows at once.
Command—*Ready, Strike!*

5. Have the class practice evading an infighter. As opponent gets inside to the infighting position, the boy on defense places his open palms on opponent's shoulders, and pushing him backward slightly, spins him to his right, off balance and out of the infighting position.

*Controlled Boxing*

1. One's—Use only a left jab to the chin.
   Two's—Practice only infighting.
2. One's—Practice only infighting.
   Two's—Practice only infighting, head to head with opponent, and evading opponent when he wishes to do so by spinning him out of position.

CHAPTER 16

# WRESTLING

Wrestling is set forth here as a phase of the general physical education program that may be used in any school where one objective of the administration is a strong, healthy, well coördinated body.

Wrestling is one of the oldest sports on our athletic calendar. We know from the records of art and literature that the sport was practiced by the Greeks, who probably learned it from the Egyptians or from the Asiatics. Since the beginning of time, almost, it has seemed natural for all people to be interested in some type or form of this sport.

Although in various countries there have been minor differences in the rules and objectives of wrestling, making about as many systems as nations engaging in this sport, there is no fundamental difference in the various systems.

## STYLES OF WRESTLING

There are three major styles of wrestling used in the world today: (1) Catch-as-Catch-Can, the style used in the United States; (2) Graeco-Roman, the style used in Europe; and (3) Judo, the style used in Japan.

### *Catch-as-Catch-Can Wrestling*

The rules of Catch-as-Catch-Can wrestling permit any fair hold to be used on any part of the body from the head to the feet. The objective is to pin or hold both of the opponent's shoulder blades in contact with the mat for two seconds.

### *Graeco-Roman*

The rules of Graeco-Roman wrestling permit any fair hold to be used on the body from the head to the waist. Just as a boxer may not hit his opponent below the waist, so a Graeco-Roman wrestler may not apply holds below his opponent's waist. The objective is to pin the shoulders. However, unlike Catch-as-Catch-Can rules in the United States, a flying fall counts as well as a pin fall. Thus if a wrestler's shoulder blades touch the mat simultaneously, even if it is only for a fraction of a second, a flying fall is registered.

### *Judo*

The rules of Judo are very much different from those of both Catch-as-Catch-Can and Graeco-Roman wrestling. Judo rules call for a canvas jacket to be worn by the contestants. This jacket has short sleeves and a heavy collar. The objective is to force the opponent to surrender by joint-locking—which in extreme cases may mean a broken arm or leg—or by strangling an opponent by gripping his collar or jacket. A fall means nothing. A Judo wrestler, after throwing his opponent to the ground. attempts to terminate the contest by either strangling his opponent into unconsciousness or by applying sufficient pressure against a joint to compel him to give up.

Amateur wrestling, sponsored by high schools, colleges, Amateur Athletic Unions, and Y.M.C.A.'s, attracts boys and men interested primarily in this sport. It has been set up on the basis of science. Brute strength has been compensated for by the introduction of skill, agility, and cunning. Punishing holds, such as strangles and bone-breaking, are barred. Stalling and faking have been almost entirely eliminated. Proper coaching, supervising, and more

attention to diet and training have tended to make the game faster, and more rugged and attractive.

Wrestling has a carry-over value through the traits it tends to develop: initiative, self-reliance, assurance, and independence of thought and action under many circumstances and conditions; self-restraint; the desire to win over all obstacles; and lastly that feeling of strength and confidence that comes as a result of all of the foregoing and of improved physical prowess.

All the equipment necessary for wrestling is a grassy plot, or a matted surface of some sort, and a pair of tights, a pair of shorts, or a pair of overalls.

Since physical condition is important to the wrestler, he will want to engage in conditioning exercises, stunts, tumbling, and running. There are chapters on each of these subjects to be found elsewhere in this manual.

Many high school wrestling teams are over coached. The teachers often try to give the boys too much in too short a time. The boys need to learn only a few items to be able to engage in competition: (1) Learn one or two good take downs. (2) Learn how to hold a man down, keeping him so busy underneath that he has little chance to escape, or to apply any countering hold from underneath. (3) Master one or two good escapes, or reverses. (4) Practice a few good pinning holds. Victory comes in the pins obtained which are the main objectives of wrestling.

### Objectives of Offensive and Defensive Wrestling

*Offensive Wrestling*

1. To take opponent to the mat from a standing position
2. To keep opponent under control
3. To break opponent down on the mat
4. To apply pinning combinations

*Defensive Wrestling*

1. To secure a well-balanced stance on the mat and to be free to move in any direction
2. To prevent offensive wrestler from securing any effective hold
3. To execute methods or a combination of methods used for the purpose of escaping from underneath
4. To apply pinning combinations while getting away

*Scoring*

The Iowa high school scoring system is as follows: Two points for a take-down and going behind, two points for escaping from underneath and going behind in one continuous movement, one point for clearly escaping from the opponent, and three points for a near fall. Not more than one near fall may be claimed unless the pinning combination employed has been definitely broken and a new combination put into play. The near fall requirement has been fulfilled when the points of both shoulder blades of the opponent are being held within one inch of the wrestling surface for a continuous period of one second. If both shoulders together, or if one shoulder at a time comes out of this one-inch area for a fraction of a second, the timing must be started over. A fall, which terminates the match, of course, occurs when any part of both shoulder blades is held upon the wrestling surface for a continuous period of one second.

### Methods of Going Behind or Take Downs from the Feet

There are many clever ways of taking the opponent down and going behind him. Only a few will be mentioned here because no attempt will be made to describe all wrestling holds in this manual, but only the most commonly used ones.

*Standing Position*

Objectives: To secure an easy and relaxed stance. To be alert and ready to move in any direction.

1. If possible, stand as tall as opponent, but not too straight.
2. Feet apart about width of shoulders, knees bent slightly, and weight distributed evenly on both feet so that movement is free and easy.
3. Extend arms forward, with elbows bent and close to the sides of the body. (See Fig. 30.)

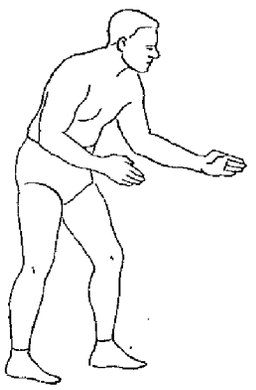


Fig. 30

Fig. 31

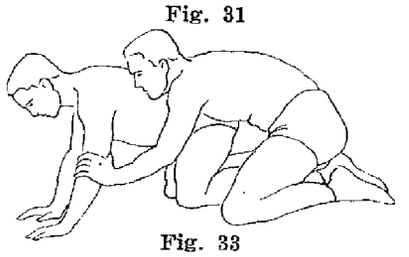


Fig. 33

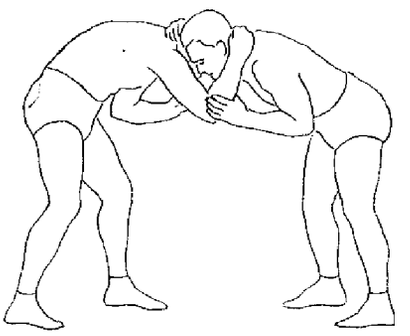


Fig. 32

*Defensive Position on Mat*

Objective: To secure a comfortable well-balanced stance on the mat and at the same time to be free to move in any direction.

1. You are on your hands and knees. Sit back on feet with toes turned in. Spread knees far enough apart to create a comfortable and stable foundation.
2. Place hands directly ahead of knees on the mat.
3. Bend elbows slightly.
4. Keep head, neck, and back on a fairly straight line. (See Fig. 31.)

*Referee's Hold, Standing*

Objective: To secure a well-balanced stance and to be ready for offense and defense.

1. *A* grasps the back of *B*'s head with right hand, and with right elbow down and in toward *B*'s chest.
2. *A* grasps *B*'s right elbow with left hand and with fingers on the outside of *B*'s elbow.
3. *A* rests head on *B*'s right shoulder. Elbows are kept close to the sides.
4. *B* takes a position similar to *A*'s. (See Fig. 32.)

*Note:* From this position many holds may be obtained. By pulling and pushing forward or backward, or from side to side, the boy can make an opening for some favorable hold for a take-down.

*Referee's Hold, When Down on Mat*

Objective: To stay behind, and to be alert and ready to make adjustments according to the moves of the boy underneath.

1. *A* kneels at *B*'s left side and places right arm around *B*'s waist, with right hand on the middle of *B*'s abdomen.
2. *A* grasps *B*'s left elbow with left hand, and with thumb on the inside of *B*'s right elbow.
3. *A* places right knee beside and touching *B*'s left ankle. *A*'s left knee is well out to the side to present a wide base.
4. *A* pulls *B* back and to the left, at an angle of forty-five degrees with right arm, until *B* is forced off balance. *B*'s supporting left arm must be pulled back. (See Fig. 33.)

*Double Leg Hold from Standing Position*

Objective: To take down.

Opponents are facing each other in referee's hold (standing), right hand on opponent's neck.

1. *A* steps backward, pulling *B* with him. (Fig. 34a.)
2. *A* drops on both knees, and drives head by *B*'s right hip. (Fig 34b.)
3. *A* grasps both *B*'s legs around knees and locks hands together.
4. *A* gets to feet and lifts *B* off the ground. (Fig. 34c.)
5. *A* swings *B*'s legs to the left and throws *B* to the ground. (Fig. 34d.)

*Counter*

*B* crouches over and moves feet back when *A* drops to knees. (Fig. 34e.)

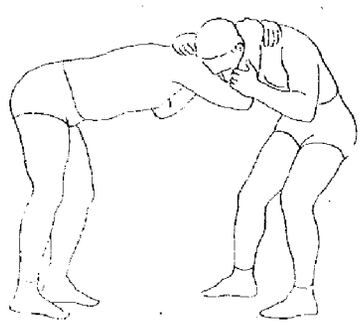


Fig. 34a

Fig. 34b

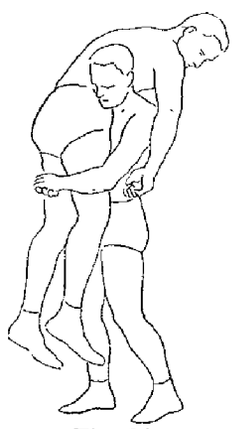


Fig. 34c

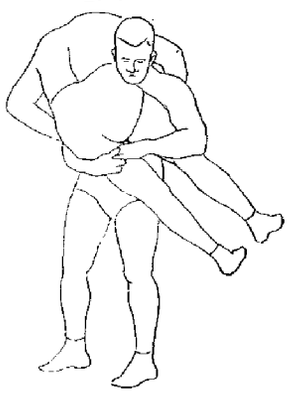


Fig. 34d

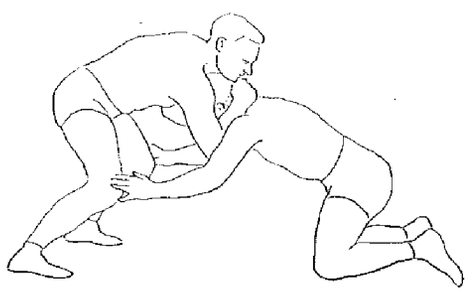


Fig. 34e

*Single Leg Hold, Standing*

Objective: To take down.

Opponents are facing each other in Referee's Hold (standing) right hand on opponent's neck.

1. *A* steps backward, pulling *B* with him.
2. *A* drops on both knees, and drives head by *B*'s right knee. (Fig. 35a.)

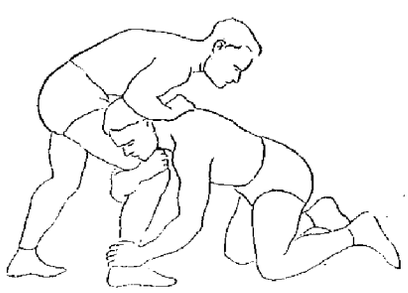


Fig. 35a

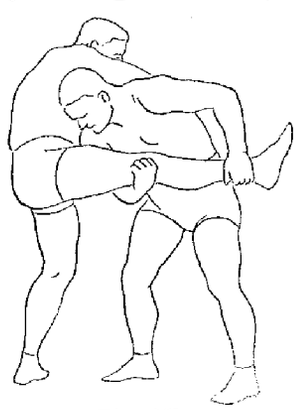


Fig. 35b

3. *A* grasps *B*'s right ankle with left hand, and also places right arm around *B*'s knee from the inside.
4. *A* gets to feet and lifts *B*'s leg up high. (Fig. 35b.)

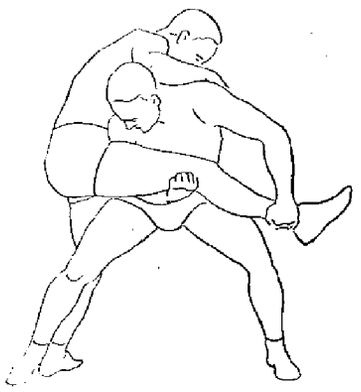


Fig. 35c

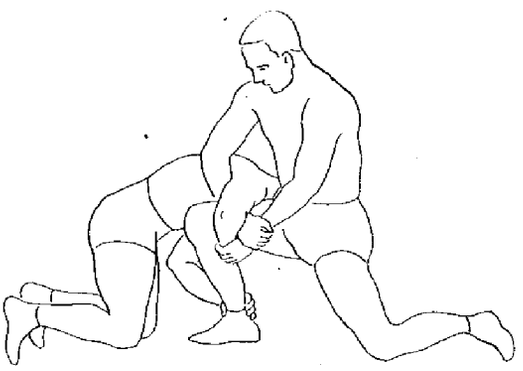


Fig. 35d

5. *A* kicks *B*'s left leg from under him and adjusts himself for position of advantage as *B* falls to the mat. (Fig. 35c.)

*Counter*

*B* use double wrist-lock on *A*'s right arm at (3). (Fig. 35d.)

*Arm Push-up, Standing*

Objective: To go behind opponent.
Opponents are facing each other in Referee's Hold (standing).
1. *A* places right hand around *B*'s neck. *B* does the same to *A* (Referee's Hold).
2. *A* places left hand under *B*'s right elbow and pushes *B*'s right arm up. (Fig. 36a.)
3. *A* ducks under *B*'s raised right arm pivots to the rear, around behind *B*.
4. *A* locks hands around *B*'s waist. (Fig 36b.)

See Take Down, when standing behind opponent.

*Counter*

*B* resists and steps away from *A* when attempt is made to push up arm. (2)

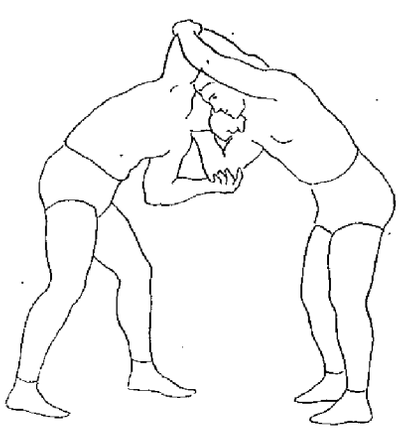


Fig. 36a

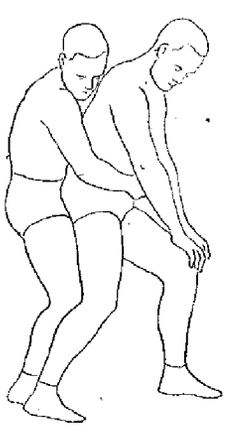


Fig. 36b

*Arm Drag, Standing*

Objective: To go behind opponent.
Opponents are facing each other.
1. *A* grasps *B*'s right wrist with left hand. (Fig. 37a.)
2. *A* grasps *B*'s right arm above elbow with right hand and pulls with both hands to his own right until *B* is turned slightly. (Fig. 37b.)

3. *A* slips left arm around *B*'s waist. *A* goes behind with left foot and locks hands around *B*'s waist.

(See Take Down when standing behind opponent.)

*Counter*

Resist, and keep facing *A* when attempt is made to pull arm. (2)

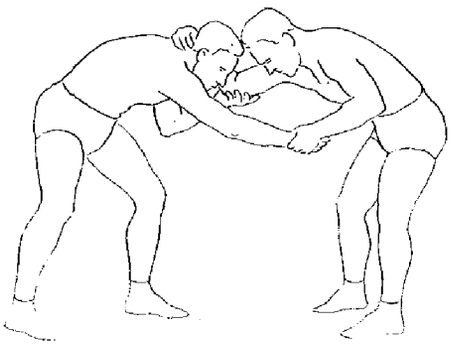


Fig. 37a

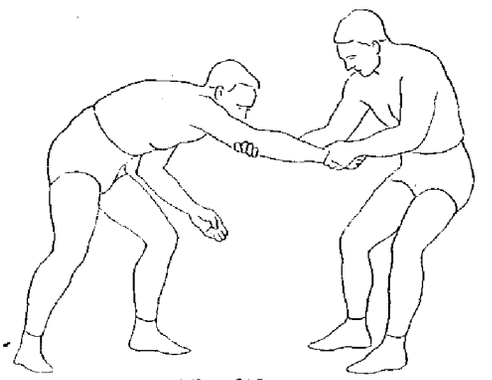


Fig. 37b

*Drop with Leg Trip, Standing*

Objective: To take down when standing behind opponent

1. *A* has arms around *B*'s waist, with hands locked, and head resting above *B*'s left hip.
2. *A* drops to both knees, and grasps *B*'s left ankle with left hand. (Fig. 38a.)
3. *A* places right leg in front of *B*'s right leg. (Fig. 38b.)
4. *A* contacts right shoulder with *B*'s buttock, and forces *B* forward, at the same time pulling *B*'s left ankle. (Fig. 38c.)

If *B* jumps over right leg (3), *A* grasps *B*'s right ankle with right hand. (Fig. 38d.)

*Counter*

*B* opens body lock by tearing *A*'s hands apart. (1)

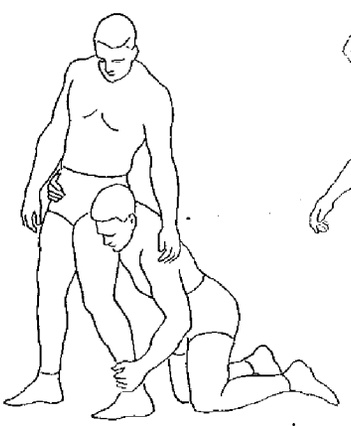


Fig. 38a

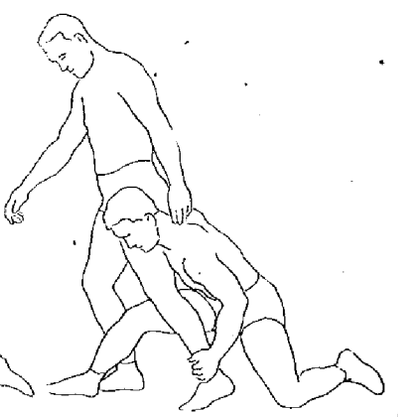


Fig. 38b

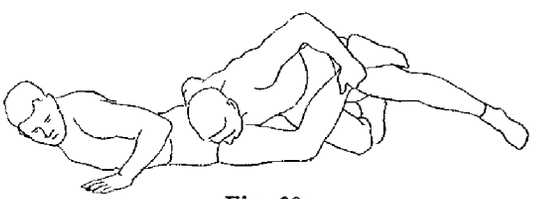


Fig. 38c

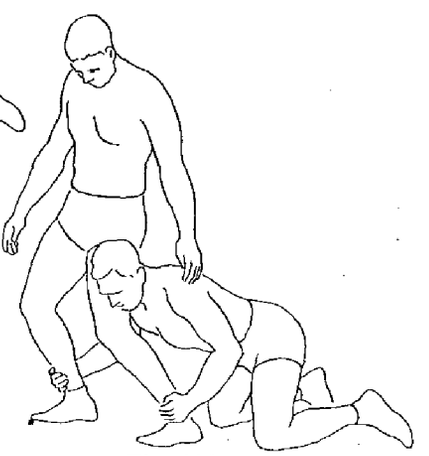


Fig. 38d

*Throwing to One Side, Standing*

Objective: To take down when standing behind opponent.

1. *A* has arms around *B*'s waist with hands locked and head resting over *B*'s left hips. (Fig. 39)
2. *A* places insides of both feet behind B's heels and pulls *B* off balance. As both fall back, *A* adjusts himself for top position.

*Counter*

*B* opens body lock by tearing *A*'s hands apart. (1)

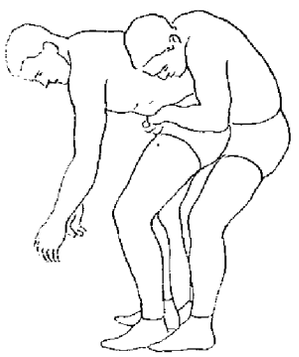


Fig. 39

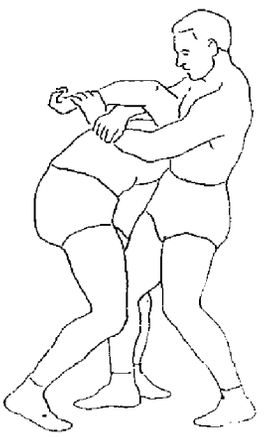


Fig. 40a

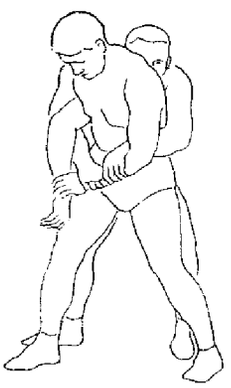


Fig. 40b

*Double Wristlock*

Objective: To force opponent to the mat from standing position.

Opponents are facing each other.

1. *A* grasps *B*'s right wrist with left hand.
2. *A* passes own right arm around *B*'s right arm above elbow and grasps own left wrist with right hand.
3. *A* forces *B*'s right arm up his back. (Fig. 40a.)

*Counter*

*B* steps behind *A* and grasps *A*'s left wrist with left hand when *A* attempts to apply leverage. (2) (Fig. 40b.)

Note. The double wristlock is an excellent counter hold for many holds in standing position.

*Cross Body Ride, on Mat* (Grapevine and Bar-Arm)

Objective: Controlling opponent.

Opponents are in referee's position on the mat. *A* is on top to the left, and *B* is on the bottom.

1. *A* shoves right foot in between *B*'s right arm and right thigh, and then back between *B*'s thighs. (Fig. 41a.)
2. *A* places right shin behind *B*'s knees joint (grapevine).
3. *A* reaches across *B*'s body, and places own right arm, under and around *B*'s left arm from the top. (Bar-Arm) (Fig. 41b.)

*Counter*

*B* prevents *A* from shoving right foot in by sitting back and keeping right arm close to thigh.

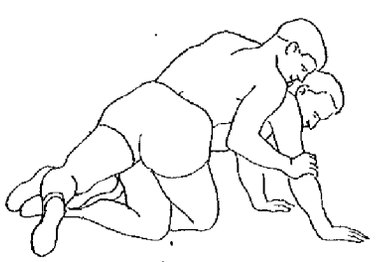


Fig. 41a

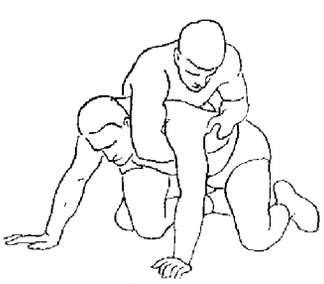


Fig. 41b

Note: This combination is for controlling only. However, at any time the defensive wrestler rolls to his right side there is an opening for the offensive wrestler to use a half nelson and body-scissors for a fall.

*Body Scissors, Bar Nelson and Half Nelson on the Mat*

Objective. To get opponent in position for pinning.

Opponents are in Referee's position on the mat. *A* is on top, and *B* is on the bottom.

1. *A* shoves right foot in between *B*'s right arm and right thigh, and then back between *B*'s thighs. (See Fig. 41a.)
2. *A* places right shin behind *B*'s knee joint (grapevine).
3. *A* places right forearm behind *B*'s neck, and pushes left arm under *B*'s left arm, and locks own hands. (Bar Nelson) (Fig. 42a.)
4. *A* forces Bar Nelson and shoves left foot in between *B*'s left arm and left thigh and locks feet. (Body scissors) (Fig. 42b.)
5. *A* unlocks hands, and a half Nelson automatically is applied. (Fig. 42c.) *A* keeps knees well apart, adjusts weight forward, and forces half Nelson for the fall.

*Counter*

*B* prevents *A* from shoving right foot in by sitting back and keeping right arm close to thigh. (1)

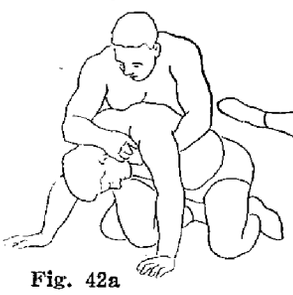


Fig. 42a

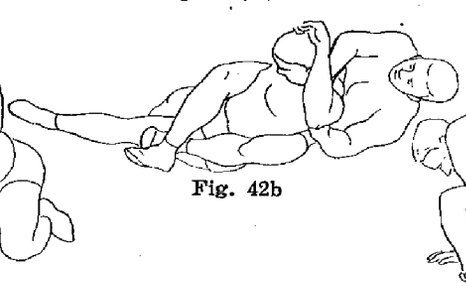


Fig. 42b

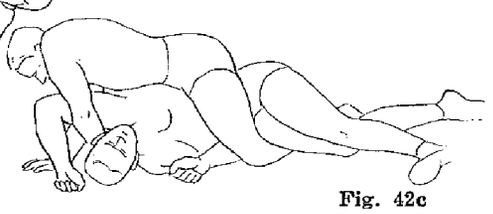


Fig. 42c

*Under Bar Lock, From Referee's Position on Mat* (Near Side)

Objective: To get opponent in position for bar-arm

*A* is on the top and *B* is on the bottom.

1. *A* is on left side of *B*, and forces *B* off balance to the left, and grasps *B*'s left wrist with left hand from the inside. (Fig. 43a.)
2. *A* places left forearm against the inside of *B*'s left biceps and forces forward. (Fig. 43b.)
3. *A* grasps *B*'s left wrist with right hand. Now both hands are on *B*'s left wrist, and he pulls *B*'s left arm out and up. (Fig. 43c)
4. *A* places right arm in front of *B*'s arm at the elbow and applies force. (Bar-Arm) (Fig. 43d.)

*Counter*

B prevents A from grasping left wrist by keeping left arm straight and forward. (1)

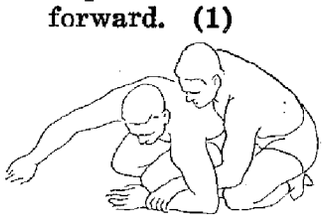


Fig. 43a

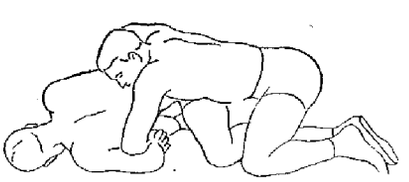


Fig. 43b

Fig. 43c

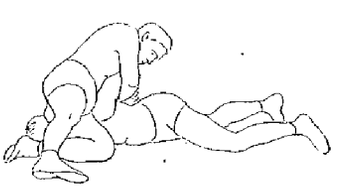


Fig. 43d

*Bar-Arm, From Referee's Position on Mat* (Far Side)

Objective: To get opponent in position for pinning.

*A* is on the top and *B* is on the bottom.

1. *A* is on left side of *B* and forces *B* off balance to the left, and grasps *B*'s left wrist with left hand from the inside. (Same as under-bar-lock) (See Fig. 43a.)
2. *B* at this moment will resist by placing himself on left side, supporting himself with right arm. *A* places right hand under *B*'s right elbow, and prevents *B* from turning away by placing his own right forearm at *B*'s right hip. (Fig. 43b.)
3. *A* pivots to the right around *B*'s head, releases B's left hand, and shoves own left arm in front of *B*'s right arm at the elbow. (Fig. 43c.) (Bar-Arm)

*Counter*

When *A* pivots around *B*'s head (3), *B* turns toward *A* and back to defensive position.

Fig. 44a

Fig. 44b

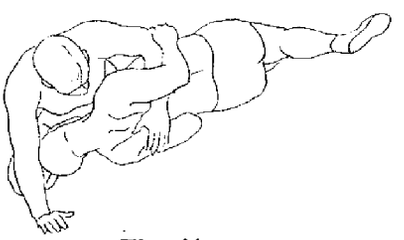


Fig. 44c

*Bar-Arm Reverse Head Lock and Body Scissors on the Mat*

Objective: Pinning

1. *A* has bar-arm on *B* contacting own left arm with *B*'s right arm. *B* is lying on his left side.
2. *A* places right arm around *B*'s neck (reverse head lock) (Fig. 45a.)
3. *A* straddles across *B*'s body, and applies body scissors. By now *A* has bar-arm reverse head lock and body scissors. (Fig. 45b.)

*Breaking Pinning Combination*

1. *B* kicks *A*'s feet apart (Fig. 45c.)
2. *B* scissors *A*'s right leg (Fig. 45d.)
3. *B* slides out on *A*'s right side, and places left arm around *B*'s body going out and on top of *B*.

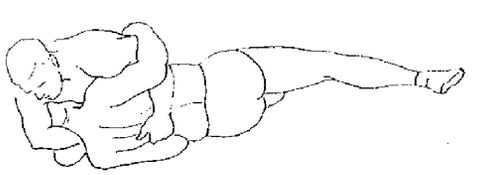


Fig. 45a

Fig. 45b

Fig. 45c

Fig. 45d

*Bar-Arm and Figure Four Head-Scissors on the Mat*

Objective: **Pinning**

1. *A* has bar-arm on *B*, contacting own left arm with *B*'s right arm. *B* is lying on his left side (Fig. 46a.)
2. *A* places left knee by *B*'s chin, and places right heel by *B*'s neck. (Fig. 46b.)
3. *A* forces bar-arm and shoves right foot under B's neck, and locks right foot behind his own left knee ("figure four") (Fig. 46c.)
4. *A* leans in toward *B*'s chest, and with his weight, keeps both knees in contact with the mat, and holds *B*'s left wrist with right hand.

*Breaking pinning combination*

1. *B* moves toward *A*'s legs and hooks own right heel to *A*'s heel (Fig. 46d.)
2. *B* pulls hard with right leg until *A*'s scissors has been opened. *B* keeps on turning and holds *A*'s left leg under control. (Fig. 46e.)

Fig. 46a

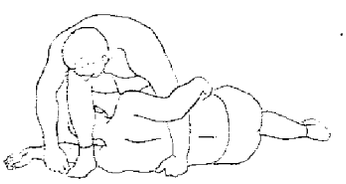


Fig. 46b

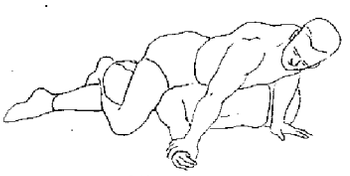


Fig. 46c

Fig. 46d

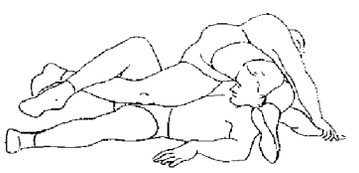


Fig. 46e

*Wrist Hold and Half Nelson* (From Referee's Position on Mat)

Objective: Pinning

*A* is on the top, and *B* is on the bottom

1. *A* is on left side of *B* and forces *B* off balance to the left, and grasps *B*'s right wrist with right hand from the inside.
2. *A* shoves left hand under *B*'s left arm and back of *B*'s neck. (Half Nelson) (Fig. 47a.)
3. *A* forces half Nelson and places own chest against *B*'s chest pressing with all his weight. (Fig. 47b.)

*Counter*

*B* shoves right hand between *A*'s and his own chest, and turns back to defensive position on hands and knees. (Fig. 47c.)

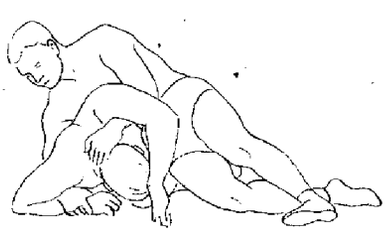


Fig. 47a

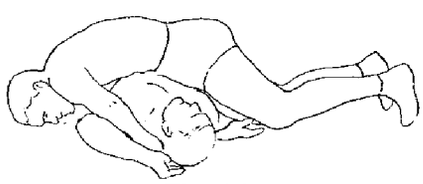


Fig. 47b

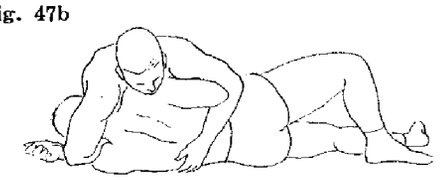


Fig. 47c

*Stand Up, From Referee's Position on Mat*

Objective: To get free.

*A* is on the top and *B* is on the bottom.

1. *B* moves from defensive position to a position on one knee, and places right foot on the mat.
2. *B* grasps *A*'s four fingers at the end with right hand.
3. *B* tears *A*'s hands apart, rises and turns to the right to face *A*. (Fig. 48.)

*Counter*

When *B* rises, *A* grasps both *B*'s ankles and forces *B* off balance.

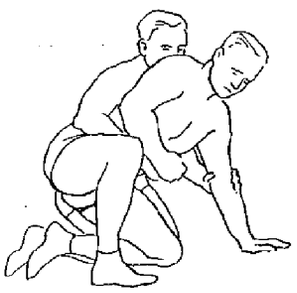


Fig. 48

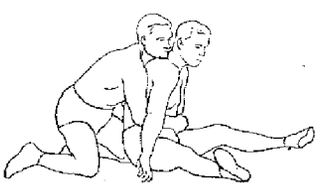


Fig. 49a

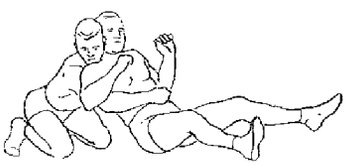


Fig. 49b

Fig. 49c

*Sit Out, From Referee's Position on Mat*

Objective: Getting Free

*A* is on the top and *B* is on the bottom

1. *B* moves from defensive position out to a sitting position. *A* is on knees with body lock on *B*. (Fig. 49a.)
2. *B* places heels in solid contact with the mat, straightens back and places head on *A*'s right or left shoulder. (Fig. 49b.)
3. *B* raises both arms, pulls away from *A* by heels, and suddenly and with real power lowers arms which should open body lock. As soon as the body lock is broken, *B* turns around and faces *A*.

*Counter*

*A* sits in back of *B* and applies grapevine and bar-arm (controlling). (1) (Fig. 49c.)

*Switch, From Referee's Position on Mat*

Objective: To reverse position

*A* is on the top and on the left side of *B*

1. *B* moves a little to the right and turns in to a sitting position contacting the back of *A*'s right arm between shoulder and elbow with own right arm at the same point. (Fig. 50.)
2. *B* applies all his weight and forces *A* down on chest.
3. *B* turns toward *A*, retaining pressure behind *A*s' right arm until making the final twist to take top position.

*Counter*

*A* sits behind *B*, and applies grapevine and bar-arm controlling. (1)

Fig. 50

*Side Roll, Crotch Hold, and Half Nelson, From Referee's Position on Mat*

Objective: To reverse position and pin

*A* is on the top and *B* is on the bottom.

1. *B* locks *A*'s right wrist with own right arm by pressing arm close to body. *A*'s right wrist is now located under *B*'s right arm by elbow. (Fig. 51a.)
2. *B* holds tension on *A*'s arm and rolls to the right, bringing *B* over and under *A*. (Fig. 51b.)
3. *B* shoves right arm between *A*'s leg, crotch hold, and shoves left hand under *A*'s left arm and around *A*'s neck, Half Nelson. (Fig. 51c.)

*Counter*

*A* shoves left arm between *B*'s and own chest and turns back to defensive position on hands and knees. (Fig. 51d.)

Fig. 51a

Fig. 51b

Fig. 51c

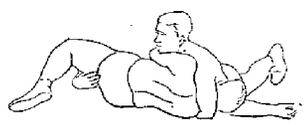


Fig. 51d

*Double Wristlock, From Referee's Position on Mat*

Objective: Reverse position

*A* is on top and on left side of *B*

1. *B* grasps *A*'s right wrist with left hand. (Fig. 52a.)
2. *B* passes right arm around *A*'s right arm above elbow and grasps own left wrist with right hand. (Fig. 52b.)
3. *B* turns around to the right to face *A*, and falls back on left shoulder, Fig. 52c) forcing *A*'s right arm into a right angle and forces *A* to the bottom. (Fig. 52d.)

*Counter*

*A* stays on left side of *B*, and blocks own right arm with right leg. (2)

Fig. 52a

Fig. 52b

Fig. 52c

Fig. 52d

CHAPTER 17

# APPARATUS EXERCISES

Apparatus work is one of the most strengthening and general developmental activities available in physical training. If apparatus is available and if there is time enough to build up the requisite strengths and skills, this activity should be used extensively. The period devoted to apparatus work should be fifteen to twenty minutes in length. The number of boys working on one piece of apparatus should not exceed eight; four to six is better. The boys should follow one another rapidly so that there will be no unnecessary time wasted in waiting for turns.

To do well in apparatus work, the boys should work to develop five sets of muscles, adequate strength of which may be thought of as a prerequisite for success in advanced apparatus work:

1. *The muscles used in pulling up from a hang.*—These muscles should be developed by daily practice of chinning until the boy can pull up from twelve to fifteen times.

2. *The muscles used in pushing up from a bent arm rest.*—These muscles may be developed by daily practice in dipping on the parallel bars until the boy can push up from ten to eighteen times, or by practicing push-ups on the floor until a record of from twenty-five to thirty is achieved.

3. *The muscles which elevate the arms.*—These can be developed by raising the hips backward and upward from a cross rest position on the parallel bars. Such exercises should be practiced daily until the performer can push up in this manner to a hand-stand.

4. *The muscles used in pulling the arms forward and downward from overhead.*—These muscles can be developed by the boys repeatedly pulling to a front lever from the ordinary hang on the horizontal bar.

5. *The muscles of the abdomen and the flexors of the thighs.*—These muscles can be developed by the sit-up exercise.

In the teaching of apparatus work, the emphasis should be on the mastery of challenging stunts, not on merely exercising the muscles. The activities listed in this chapter are primarily all stunts, and are arranged roughly in order of difficulty—though an exercise that will be easy for one boy may be harder for another because of difference in strength, former skills, and other factors.

If the apparatus is always used at the same place on the floor, it will be helpful to have the exercises for each piece copied and posted on the wall or on a movable support, which can always be near the apparatus. The boys then get accustomed to the terminology used, and are stimulated to attempt the more advanced stunts. A portable holder for such lists of exercises may be prepared of leather, with a celluloid face, and fastened to the apparatus.

The boys should be sectioned in squads according to their needs and abilities, but even then the boys in one squad will usually progress at different rates. They should be encouraged to practice each exercise several times, and should be encouraged to progress as fast as they can. This may mean, for example, that some boys in one squad will be working on the tenth exercise, while others may be working on the fifteenth, etc. They should be encouraged to make combinations from the exercises, working them out in series. If an exercise is described for one side only, it should be practiced on each side. If no mount or dismount is specified, the performer chooses his own.

Good form should be taught and encouraged. It not only looks better, but is mechanically advantageous. It is well to keep the knees straight, the

legs together, and the toes pointed. The back should be kept as straight as is feasible for any given exercise. The instructor should endeavor to set a good example in this regard.

From time to time it may be desirable to organize competition in apparatus exercises. This is done by having each boy do two exercises or combinations of exercises, and have the results judged in points by competent judges. One of the exercises on each piece may be a fixed exercise which all must perform; the other should be an elective exercise. The judging is usually done on the basis of fifteen points, nine of which are for difficulty and six for execution and composition. In the required exercises all points are based on execution.

## TERMINOLOGY

The terms used are, in general, defined the first time they are used in the text. A few terms that are of very general application, however, will be defined here.

1. *Directions*

a. *Swings.*—If the body or legs swing forward, it is a *forward* swing. If they swing backward, it is a *backward* swing.

b. *Circles.*—If circles are done in a forward or backward direction, the directions are defined in terms of a clock hung at the left side. Clockwise is *forward,* and counterclockwise is *backward.* If circles are executed in a horizontal plane (as in the case of leg circles on the horse), the directions are defined in terms of a clock lying face up on the floor. Clockwise is *right,* and counterclockwise is *left.*

2. *Side or end of apparatus.*—The side or the end of the apparatus nearer to the performer *when he begins his exercise* is called the *near* side or end, and the other is the *far* side or end. These terms continue to be used until the completion of the exercise even though the performer changes his position relative to them.

3. *Position relative to apparatus.*—If the performer has the axis running through his two shoulders parallel to the long axis of the apparatus, he is in a *side position.* If it is at right angles to the long axis of the apparatus, he is in a *cross position.*

4. *Hang.*—A *hang* is defined as a position in which the performer's body is below the grasp of his hands on the apparatus.

5. *Seats and rests.*—If the performer is resting on the apparatus, supported primarily by his arms, the position is called a *rest.* If he is supported by sitting on the apparatus, the position is called a *seat.* If the legs are both on the same side of the apparatus, the position is a *side seat.* If the legs are astride the apparatus, the position is a *riding seat.* Combinations of the above terms may be made. Thus a *side riding seat* is one in which the legs are astride the apparatus, but the shoulders are parallel to the long axis of the piece. An *outside seat* on the parallel bars is one in which both legs are to the outside of the apparatus. An *inside seat* is one in which both legs are on the side between the bars.

6. *Vaults*

a. A *vault* is an exercise in which the performer passes completely over the apparatus from mat to mat. The type of vault is partly defined by the aspect of the body that passes over the piece. Thus, if the front of the body is down, it is a *front vault.* Some vaults, however, have individual names, such as the thief vault; such vaults are defined where used.

b. A *vault mount* is an exercise in which the performer mounts to the apparatus with a vault-like movement.

c. *A vault dismount* is a movement in which the performer dismounts from the apparatus to the mat with a vault-like movement.

d. A *vault swing* is a movement in which the performer proceeds from one position on the apparatus to another position on the apparatus with a vault-like movement.

7. *Spotting.*—Until the performer is expert in any given stunt, the instructor or a competent leader should stand to catch him if he should fall, or, as it is usually termed, "spot" him. In some exercises this should be done by two boys. In some of the more dangerous exercises, the performer should be held in a belt with ropes attached to the two sides. *If there is any doubt, the performer should always be spotted.* This is especially important if the performer is working on the rings or horizontal bar, and if the day is hot. Sweaty hands sometimes slip, and this possibility should always be kept in mind.

## VERTICAL ROPES

The best rope for rope climbing is three-strand manila, one and one-half inches in diameter. The top should be at least twenty feet from the floor. All the boys should practice rope climbing enough to be thoroughly at home on the rope, to know how to climb with hands and feet, and with hands alone, and how to descend the rope without permitting it to slide through the hands. The exercises listed below are roughly in order of the difficulty of performance. Unless otherwise indicated, the exercise begins with the performer standing.

1. Grasp the rope at arm's length above the head and pull yourself up until the chin is above the top hand. Repeat this movement as many times as possible. This exercise is called "chinning on the rope."

2. Jump upward, grasping the rope with both hands at arm's length above the head. Pull up until the chin is about even with the top hand, and then grasp the rope with the legs. Do this movement by having the rope pass between the thighs and across in front of the left instep. Place the outside of the front ankle in front of the rope, and squeeze the rope between the left instep and the right ankle. To hold the position, clamp the thighs, as well as the feet, to the rope.

3. Grasp the rope as far as possible above the head, and climb upward, using both arms and legs. Grasp the rope between the feet (as in Exercise 2), with the knees bent and the feet drawn up toward the hips. Straighten the legs downward, and pull up at the same time with the hands; holding the rope between the feet, reach upward with the hands, and repeat the performance. Climb about ten feet, and then come down the rope in like manner.

4. Same as Exercise 3, except that the descent of the rope is hand under hand, with the arms alone being used. The "steps" taken downward with the hands should not be more than about eighteen inches long.

5. Climb about ten feet, using the arms and legs, and then rest on the rope by drawing the rope under the right foot with the left toe, resting the right foot in the loop.

6. Same as Exercise 5, except that the rest is made by the boys pulling the rope under the right leg with the left hand, and resting the right leg in the loop of the rope so formed. The lower end of the rope is held against the rope above the hands to make a leg seat.

7. Same as Exercise 5, except that when holding the rope with the feet, lean forward and to the left, with the right arm in front of the rope, and clamp the rope to the side. Hold the rope by the feet and legs and in the arm pit, with the hands left free.

8. Climb twenty feet, using the arms and legs, and come down with both arms and legs.

9. Same as Exercise 4, but climb twenty feet.

10. Same as Exercise 9, but climb as rapidly as possible, competing for time.

11. Climb ten feet hand over hand without the help of the feet. Rest, using the feet or the one-leg seat loop; then climb to twenty feet hand over hand; and then descend hand under hand, assisting the movement with the legs.

12. Climb twenty feet hand over hand as fast as possible, and descend hand under hand slowly.

13. Same as Exercise 12, except that legs are held forward horizontally.

14. Stand about fifteen feet from the rope. Run forward, dive for the rope from about six feet away, grasping the rope with hands and legs. While swinging, climb the rope with the hands and legs; then rest with the top hand twenty feet from the floor, holding tightly to the rope with foot and leg grip.

15. Standing, hold the rope loosely with both hands. Two mats with a gap between them, or two chalk lines on the floor, represent a width to be crossed. Move backward, letting the rope slide through the hands and run forward rapidly, letting the rope slide downward through the hands; when the point under the rope is reached, grasp the rope tightly, and swing forward across the gap to be jumped. The same movement may be done by jumping over the cross bar on jumping standards. The standards should be from six to ten feet away according to the height and should be gradually raised. The form used in this exercise is similar to that of the pole vault.

16. The cross over is used only when there are parallel ropes hanging fairly close together. Standing behind one rope, climb one rope for a few feet, then cross over to another rope. If there are only two ropes, two boys may exchange positions at the same time. The height climbed depends upon the condition of the boys.

17. Climb ten feet or less, stop and assume a "flag position," and then drop from this position to the mat below. The flag position is executed from a wide grasp, with the hands wide apart and the arms held straight out away from the ropes.

18. Climb the rope until the feet are about ten feet above the floor. Draw the rope underneath both legs by pulling it under one leg by the heel of the opposite foot and then grasping the rope with the hand on that side. Sit in the loop of the rope made in this way.

19. Climb in any manner designated until the head is about fifteen feet above the floor. Catch a heavy medicine ball tossed up from below. Descend with one hand and both feet, carrying the medicine ball in the opposite arm.

20. One boy is at the top of the rope, and the other boy stands at the bottom of the rope. The top boy descends the rope, and the bottom boy ascends the rope. They pass in the middle. The top boy should watch downward in order not to step on the hands of the ascending boy.

Almost all of the exercises listed above may be begun from a position of a seat on the floor. In this case the boys climb hand over hand until the feet have cleared the mat.

## THE BUCK

If a beat board is available, it should be placed from two to three feet in front of the buck, depending on the speed of the run. The take-offs should be from the beat board. If a beat board is not available, take-offs should be from the floor. Unless otherwise indicated, all take-offs should be from both feet simultaneously. The buck should be low in the beginning and gradually raised as the boys improve. When the boys alight, the dismount should be with the heels together, the trunk erect, and the knees to absorb the shock, bent ninety degrees or more immediately after the feet touch the mat.

### A. Buck Lengthwise

1. *Squat Vault Mount—Jump Off Forward.*—Place the hands on the

buck, and jump between the hands to a squat position on the buck, and then jump off forward.

2. Same as Exercise 1, but jump off with a pike, touching the toes. When jumping, raise the legs forward from the hips, with the knees straight; reach the hands forward to touch the toes, then straighten out before alighting.

3. *Straddle Vault.*—Place the hands on the buck somewhat less than shoulder distance apart, and vault straight across the buck, separating the thighs widely.

4. *Squat Vault.*—Place the hands on the buck, raise and bend the knees, and squat the feet through between the hands across the buck. The hands should be placed on the far end of the buck.

5. *Kneeling Jump.*—Kneel on the top of the buck, and jump forward and down to the mat with the aid of a vigorous forward and upward swing of the arms.

6. *Side Vault.*—Place the hands on the buck and vault over it, swinging both legs to one side, landing in front of the buck.

7. *Scissors Vault with Half Turn.*—Jump, and place hands on the far end of the buck, turning the trunk ninety degrees to the left. Swing the right leg forward, the left leg backward, and straddle the buck in this position; as the legs clear the buck, complete a half turn, and land facing the buck.

8. *Momentary Free Support, and Straddle-Vault over Buck.*—Jump high, with the hands on the far end of the buck. Swing the legs and the trunk upward until the trunk and the legs are almost horizontal, and until the shoulders are ahead of the hands. Then separate the legs, and straddle the buck.

9. *Momentary Free Support and Squat Vault.*

10. *Forward Roll across the Top of the Buck.*—Place the hands on the near end of the buck. Place the back of the neck between the hands, and roll across the buck, dismounting forward.

All of the above exercises may be repeated with the buck at increased heights.

B. Buck Sidewise

1. *Squat Vault Mount, Jump Off Forward.*
2. *Squat Vault Mount, Jump Off Forward with Pike, Touching Toes.*
3. *Straddle Vault.*
4. *Squat Vault.*
5. *Side Vault.*
6. *Kneeling Jump.*

7. *Stoop Vault.*—This exercise is the same as the squat vault, except that knees are kept straight, and the hips raised very high.

8. *Front Vault.*—Place the hands on the buck, and vault with the legs swinging to one side, but with the abdomen toward the buck.

9. *Thief Vault.*—Jump from one foot, and jump as though about to jump across the buck feet first (facing forward). Just before clearing the buck, place both hands on the buck and push the body upward. The placing of the hands on the buck checks the movement slightly.

10. *Momentary Free Support and Straddle Vault.*
11. *Momentary Free Support and Squat Vault.*
12. *Momentary Free Support and Side Vault.*

13. *Pike Dive.*—The instructor or leader stands on the far side of the buck, facing the buck and about two or three feet away. Dive over the buck from both feet, placing the hands on the instructor's shoulders and keeping elbows straight. The instructor places the hands under the sides of the performer's chest, lifting upward and at the same time running backward several steps until his feet clear the buck, when he drops to the feet. The

run should be fast, and the dive high and vigorous. After the boys have learned both to dive and catch, each successive boy may, after he has dived, catch the following boy.

14. Lying, face down, across the buck, slide the body down until the hands rest on the mat, and then do a forward roll. The buck should be low.

15. The same as Exercise 14, but dive slightly and slide rapidly across the buck.

16. *Dive over Buck and Roll without Touching.*—Take off from both feet, dive head first over the buck, striking first on the hands, then tucking the head under, rest successively on the backs of the shoulders, on the back, then on the hips, then on the feet, rolling forward to a stand. (First practice this exercise by diving over a boy on hands and knees.) *Several mats,* one on top of another, *should be used.*

17. Lie on the back, in a balanced position, across the buck; stretch the arms backward and toward the mats. Place the hands on the mat and swing the body away from the buck after the manner of a back handspring executed with assistance.

18. *Head and Hands Spring over Buck.*—Jump high, and place the hands on the buck, with the head between the hands bent sharply forward until after the hips have passed about a foot beyond the buck. Straighten body into an arch, and push off with the hands, landing as in a hand spring.

The above exercises may be practiced with the buck at increased heights.

## THE SIDE HORSE

All the exercises listed below may be done with the pommels (handles) removed from the horse. The horse may then be used either as a side horse or a long horse. If the horse is used without pommels, a couple of wide strips of adhesive tape should be placed around the horse to cover the holes for the pommels.

In side horse exercises, the horse is placed at right angles across the line of run, and the performer approaches from the side, as in vaulting over the buck sidewise.

1. *Side Vault Mount, Dismount Forward.*—Jump as though to do a side vault across the horse, but stop with the feet on the horse, and then drop off forward.

2. *Squat Vault Mount, Dismount Forward.*

3. *Straddle Vault Mount, Dismount Forward.*

4. *Side Vault, with Legs in Pike Position.*—Place the hands on the horse, and swing the body and the legs over the horse, with the side toward the horse. Keep the knees straight and the hips flexed forward.

5. *Squat Vault.*

6. *Front Vault.*

7. *Squat Vault Mount to Back Rest Position.*—Squat through hands, but lean backwards and keep the hands on the horse until reaching a position with the hips against the horse, and with the weight resting on the hands and the hips. Dismount forward.

8. *Side Vault Mount to Side Riding Seat, Half Leg Circle, Dismount Forward*—Begin as though about to do a side vault, but swing under leg forward and upper leg backward, dropping down astride the horse, with the shoulders parallel to the horse. Then circle the rear leg forward over the horse to the mat.

9. *Straddle Vault.*

10. *Thief Vault.*

11. *Side Vault with Half Turn to Opposite Side.*—For example, do a side vault to the left. After passing over the horse and before landing, do a half twist to the right. Land facing the horse.

12. Jump from one foot to a standing position on the horse.

13. Jump from both feet to a standing position on the top of horse.

14. *Wolf Vault.*—If vaulting to the left side, execute with the right leg a squat vault movement between the hands, the left leg executing a straddle vault movement outside the hands.

15. *Straddle Vault Mount to Side Seat on Far Side of Horse.*—Proceed as though about to do a straddle vault, but do the movement *above*, not *across*, the horse. After straddling the horse, release the hands, bring the legs together, and alight on the horse, with the hands outside the legs, and sitting (facing the far side) on the horse.

16. *Screw Vault.*—If the vault is executed to the right, begin as though doing a front vault to the right, with the right hand in the reverse grasp (palms to the right); then rotate the body to the left so that the part of the body toward the horse is, first, abdomen, then right side, then back, and then land with the right side facing the horse.

17. *Stoop Vault.*

18. *Sheep Vault.*—Start as though about to do a very high squat vault, but spring upward hard with the hands, and pass over the horse with the body in a straight line from the knees to the shoulders, but with the knees bent backward.

19. *Screw Vault Mount to Cross Riding Seat Facing Outward—Straddle Vault or Front Vault Dismount.*—Begin as though doing a screw vault, but turn slightly faster. When the back is toward the horse, come to a seat astride the horse and facing the end. Then place the hands on the end of the horse in front, and either straddle off, or swing the legs backward and upward, and do a front vault off.

20. *Momentary Free Support and Squat Vault, Side Vault, or Straddle Vault.*

21. *Jump over Horse, Jumping from One Foot.*—Same with one quarter and one half turns.

22. *Squat, Side or Front Vaults with One Quarter or Half Turns to Right or Left.*

23. *Neck Roll Forward.*—Place the hands on the horse, and jump upward, with the thighs flexed forward, and place the back of the neck (between the hands) on the horse, and then do a hand and neck spring across the horse.

24. *Hand and Head Spring over Horse.*

25. *High Dive over Horse.*—Use several mats, one on top of another.

26. *Jump to Momentary Hand Stand and Pivot Off.*

27. *Pike Dive.*

The above exercises may all be practiced with the horse at increased heights, and most of them may be executed on the elephant from a spring board. (The elephant is a pair of parallel bars or a side horse raised to a considerable height, and with several mats thrown across it. The spring board is placed on the near side about three feet from the elephant.)

## THE LONG HORSE

Unless otherwise indicated, the take-off for all the exercises should be from both feet. If possible, the take-off should be from the beat board. The exercises are done over the horse from the near end to the far end; that is, with the horse parallel to the direction of the run.

1. *Straddle Vault Mount to Near End.*—Place the hands on the near end, and straddle the feet up on either side to a stand on the near end. Take one step forward to the far end and jump off forward.

2. Jump from one foot to a standing position on the near end, lean forward, place the hands on the far end, and do a straddle vault dismount.

3. *Diagonal Run, Front Vault.*—Approach the horse from an angle of

about forty degrees, jump from both feet, place the hands on the far end, and do a front vault across the horse.

4. *Diagonal Run, Rear Vault from Outside Foot.*—Approach as in Exercise 3, place on the middle of the horse the hand on the side toward the horse, and do a scissors jump movement across the horse, placing the far hand on the horse when the near hand is removed. Land on both feet.

5. *Diagonal Run, Rear Vault, Take-off from Both Feet.*

6. *Diagonal Run, Straddle Vault over Far End.* Take-off from both feet.

7. Approaching from the end of the horse, do a dive-like movement, placing the hands on the middle of the horse. Then spread the legs, and alight astride the horse in the middle. Then place the hands on the far end. Execute a straddle vault or a front vault dismount.

8. Same as Exercise 7, except that the dive is farther with hands placed near the far end.

9. *Squat Vault Mount on Near End, Scissors Vault Dismount.*—Place the hands on the near end of the horse, with the feet together, and jump to a stand on the near end. Then reach forward, place the hands on the far end, turn the body a one-quarter turn to the side, and do a scissors dismount. In this dismount, the lower leg moves forward, and the upper leg moves backward, and simultaneously the body is turned another one-quarter turn. Land facing the horse.

10. *Straddle Mount to Middle of Horse, Front Vault Dismount.*—Do a straddle vault to the cross riding seat on the middle of the horse (the shoulders at right angles to the horse). Then place the hands in front, and do a front vault dismount to one side.

11. *Straddle Vault Mount to Middle of Horse, Rear Vault Dismount Sideward.*—After the mount, place the hands behind the hips, swing the legs forward, and dismount sideward.

12. *Diagonal Run, Scissors Vault over Far End.*—In this exercise the hands are placed on the far end, and the leg farther from the horse is moved forward across the horse, and the leg nearer the horse is moved backward away from the horse. At the same time do a half turn toward the horse. This exercise is like a straddle vault backward.

13. *Diagonal Run, Stoop Vault over Far End.*

14. *Forward Roll to Cross Riding Seat.*—Place the hands and the back of the neck on the near end, and roll forward lengthwise on the horse, separating the thighs to a cross riding seat on the horse. Any dismount.

15. *Straddle Vault over Horse.*—Dive forward over the horse, placing the hands on the far end, and do a straddle vault off.

16. Same as Exercise 15, but work to improve the smoothness of the execution and to increase the height.

17. *Squat Vault over Horse.*—Same as Exercise 15, except that the dismount is with the feet between the hands. The hips must be high.

18. *Double Tap Straddle Vault.*—Place the hands on the near end at start of diving straddle vault, but jump with the hands to the far end, and then straddle off.

19. *Stoop Vault over Horse.*—Dive, placing the hands on the far end, raising the hips very high. Push off with both hands; keeping the knees straight, with the legs in a pike position, do a stoop vault over the horse.

20. *Cart Wheel the Length of Horse.*—Take off with the near foot.

21. *Straddle Vault over Horse with Hands in Middle.*

22. *Squat Vault over Horse with Hands in Middle.*

## HORIZONTAL BAR

A large proportion of the exercises that are listed to be done on the high horizontal bar can also be done on the low horizontal bar. In the list immediately below, the exercises listed for the low horizontal bar are those which

can be done only on the low bar. Those which can be done on both the low and the high bars are listed with the exercises for the high bar.

A steel bar is superior to a wooden bar. The bar should be cleaned frequently with a Double-O emory cloth. Sand paper scratches the bar, and makes it so rough that it causes blisters. After the bar has been cleaned with the emory cloth, it should be "dusted" with the magnesium carbonate dust from the emory paper.

The hands should be rubbed with a cake of magnesium carbonate, which dries the perspiration and increases the friction enough to prevent slipping. Since this powder cakes on the bar from time to time, the bar should be examined frequently and cleaned every time that chunks of magnesium carbonate accumulate at places where the bar will be grasped.

### A. Low Horizontal Bar

The height of the low horizontal bar may be varied, but from four to four and one-half feet is usually satisfactory.

1. *Modified Chinning.*—This exercise may be done in two ways. Slide under the bar in each case, and hang at arm's length with the reverse grasp (the finger tips toward the face). In one method, the body is straight from the shoulders to the knees, and the knees are bent to a right angle, the feet resting on the mat. Pull the body up, or "chin," until the top of the breast bone touches the bar. In the other method, the performance is the same, except that the body is straight from the shoulders to the heels, and the heels rest on the mat. (In this method, another boy should brace his feet against the heels of the performer.) Pull up as many times as possible.

2. *Backward Circle to Front Rest with Leg Swing.*—Stand near the bar, and grasp the bar with the ordinary grasp (the palms downward). Stand on one foot, and swing the other leg backward and then forward, and circle the bar backward to a front rest on the hands, with the hips against the bar.

3. *Short Underswing for Distance.*—Stand on one foot well away from the bar (the exercise may be executed from both feet when the ability of the performer warrants it), grasping the bar with the ordinary grasp. Swing the other leg backward, and then on the forward swing, raise both feet to the bar, and, *with arms straight,* swing under the bar and shoot forward as far as possible. Push upward and backward with the arms. (Note: The instructor should take care that the performer keeps the arms straight, for the head can be injured by contact with the bar if the elbows are bent too much.)

4. *Side Vault*
5. *Rear Vault*
6. *Squat Vault*
7. *Straddle Vault*
8. *Wolf Vault*

9. *Long Underswing Upstart.*—Stand well away from the bar, grasping it with the ordinary grasp. Then jump from the mat, and swing under the bar with the knees straight, the hips flexed forward, and the feet just above the mat. Having reached the front end of the swing, flex the hips until the feet are almost against the bar; on the back swing, just as the belt passes under the bar, thrust the legs vigorously along the bar, and mount to a front rest. (This is an advanced exercise.)

### B. High Horizontal Bar

All exercises not marked with an asterisk can be done on the low bar as well as on the high horizontal bar.

*1. *Chinning.*—Use either the reverse or the ordinary grasp.

*2. *Alternate Arm Pull-up and Push-up to Front Rest.*—Chin with the

ordinary grasp, then raise one elbow and then the other above the bar, and push up to a front rest. (If necessary at first, have another performer assist by lifting at the ankles.)

*3. *Upper Arm Hang and Swing.*—Chin with the ordinary grasp, and then thrust both arms over the bar, resting on the upper arms near the shoulders. Then grasp the bar with the hands near the opposite shoulder in each case. Swing the legs forward and backward.

*4. *Back Circle under Bar to Back Hang* ("Skin the Cat").—From a hang with the ordinary grasp, swing the legs up between the arms, and lower the body as far as possible. Return to the original position.

5. *Single Knee Mount.*—From a hang with the ordinary grasp, swing one knee over the bar either between the arms or outside the arm to that side. Swing the other leg hard downward and outward, and pull in with the arms, mounting to a side-riding seat on the bar.

6. *Hand and Knees Circles.*—From a position of the side-riding seat on the bar (the shoulders parallel to the bar, one leg on each side of the bar), and with the ordinary grasp, swing the rear leg backward and downward, and make a complete circle backward around the bar. Two or more such circles may be made in succession. The same exercise may be done forward with the reverse grasp.

7. *Hang by Knees.*

8. *Hock Swing Dismount.*—Hang by the knees, and work up a swing. At the end of the forward swing, snap the knees straight, and swing the legs down to a stand.

9. *Forward Circle Pull-over Mount to Side Seat.*—Swing the legs up between the arms, and arch the back over the bar. With the head thrown back, pull up over the bar, and come to a side seat.

*10. *Elbow Uprise.*—Hang with a one-hand ordinary grasp. The elbow of the other arm is hooked over the bar with the hand on far side. Working up a swing, swing the legs backward, and with a strong pull with the elbow hooked on bar, rise to a front rest. The same can be done from a position with both elbows hooked over the bar.

*11. *Swing.*—From a hang with the regular grasp, pull up, raise the legs and shoot the legs forward and upward, at the same time extending the elbows. As the legs swing up, pull the arms upward and backward, and shoot the body forward into a large swing.

*12. *Forward Swings with Half Turns at End.*—Work up a swing as in Exercise 11. At the end of each forward swing, make a half turn, letting go with both hands and regrasping when the half turn is completed. Do this movement continuously for a number of swings.

13. *Backward Double Hand and Knee Circles.*—From a side seat on the bar with the ordinary grasp, swing backward from the knees and the hands, straightening arms fully. When the belt passes under the bar, flex elbows somewhat, and complete the circle to the top of the bar. This exercise may be done several times, continuously. It may also be done forward with the reverse grasp.

14. *Crotch Circles.*—From a side riding seat, with the ordinary grasp, fall backward. When under the bar, flex the arms somewhat, and complete the circle. This movement can be done forward with the reverse grasp, and sideways from a crossriding seat, the hands grasping in front.

15. *Short Underswing Dismount.*—From a front rest, drop the trunk backward, and at the same time raise the legs forward until the ankles are at the bar. When swinging downward, shoot the feet forward, and pull backward and upward with the arms, shooting out forward to a stand on the mat.

*16. *Breast-up.*—From a hang with the ordinary grasp, pull upward very rapidly and hard, and continue the movement above the bar with a

push-up to the front rest. The pull-up must be very fast and high, with no pause between the pull-up and the push-up.

*17. *Double Lever Mount and Hock Swing Dismount.*—As the end of the front swing, swing the legs up and outside the hands. On the back swing pull high. As the top of the back swing is reached, release the hands, hooking the knees on the bar, and perform a large hock swing forward, and drop to the mat.

*18. *Swing Hock Drop.*—From a side seat on the bar hook the knees under the bar, drop the trunk backward until it is in line with the thighs, and perform a big swing forward under the bar. When about at the end of the swing, snap the knees straight, and drop to a stand on the mat.

*19. *Upper Arm Hang Circles.*—From the upper arm hang, grasping the the bar, do large backward circles around the bar.

*20. *Muscle Grind.*—From a side seat, slide forward and downward, and hook the bar with the elbows behind the back. Then perform large backward circles. Forward circles may also be done.

*21. *Palm Circles.*—Same as Exercise 20, but with the bar held in the hands behind the small of the back. The palms are facing the body.

22. *Forward Hand and Toe Circles.*—From the front rest, with the hands in the reverse grasp, raise the hips, separate the legs widely, and hook the toes under the bar. From this position, drop forward, and swing hard around the bar. When about half way up on the near side of the bar, drop the legs, twist the wrists forward, and come to the original position of front rest.

23. From a front rest, swing the legs under the bar, and on the rebound, perform one of the following vault dismounts or vault swings. If it is a vault swing, vault to a side seat on the far side of the bar. If it is a vault dismount, vault to the mat.

a. *Side Vault.*
b. *Squat Vault Swing with Backward Hand and Knee Circle.*—As legs squat through, hook the knees on the bar and do a backward circle to the side seat.
c. *Straddle Vault Swing and Backward Hand and Knee Circle.*
d. *Squat Vault.*
e. *Straddle Vault.*

24. *Flag Circle.*—From a side seat, lift the left leg above the bar, and hook the left toe under the bar at the side. Grasp the bar at the right side with the right hand with the reverse grasp, hook the right knee under the bar, and with the left arm raised upward, perform large circles forward around the bar.

25. *Hand and Foot Circle.*—From a straddle stand on the bar, with the hands in the ordinary grasp between the feet, make large circles backward around the bar. With the reverse grasp, perform forward circles. The arms and the knees are straightened on the downward swing, and bent slightly on the upward swing.

26. *Backward Hand and Ankle Circle Dismount.*—From a side-seat, grasp the bar with the ordinary grasp, slip backward until the ankles are resting on the bar, and do a three-quarters backward circle. When about to stop in the upward movement, release the hands, straighten out, and drop to the mat.

27. *Ordinary Upstart.*—Swing forward with the body arched. Just when reaching the most forward part of the swing, raise the legs (with the knees straight) until the ankles are close to the bar. On the backward swing, as the belt passes under the bar, thrust the legs upward along the bar, pull with the arms (the elbows straight), and rise to a front rest.

28. *Backward Hip Circles.*—From a front rest, swing the legs backward and then forward under the bar. As the legs approach the bar, drop the head and the shoulders backward fast—the momentum of the legs carries

one around the bar to the front rest. If the timing of the drop-back of the trunk is a bit early, the circle can be made without the legs or the waist touching the bar, the "free back circle."

29. *Forward Hip Circle.*—From a front rest drop rapidly with the bar on the thighs about two-thirds of the way up from the knees to the hips. When dropping, flex the thighs forward so that the weight is resting on the thighs on the bar, and continue to swing under the bar. When starting to rise, drop the legs and pull hard with the arms, rising to the front rest.

30. *Quick Upstart or "Circus Kip."*—Jump to the ordinary hang, and thrust the chest forward and the legs backward. Then snap the legs forward and upward toward the bar, pulling hard downward with the arms. As the legs approach the bar pull hard with the arms, bending the elbows slightly, drop the legs, and come to the front rest. The exercise is easier if the jump upward is started from about two feet behind the bar.

31. *Back Lever.*—From an ordinary hang, raise the legs and thrust them between the arms and upward until the hips are close to the bar. Then with the trunk straight, lower the body until it is parallel to the mat and hold it there for several seconds. It is easier if the hands are fairly close together.

32. *Front Lever.*—From a hang with the ordinary grasp, swing the legs and the trunk forward until parallel to the mat, and hold this position for a few seconds.

33. *Elbow Lever on Top of the Bar.*—From a position of front rest with the reverse grasp, hold the elbows close against the sides; bending the elbows, rock forward until the trunk and the legs are in a straight line and parallel to the mat.

34. *Side Lever.*—From an ordinary grasp, hang, raise the legs and thrust them through under the bar between the arms and upward. Then lower the body to one side, with the forearm behind the back. When the body is horizontal, extend the other arm overhead and hold the position for a few seconds.

*35. *Backward Drop Off.*—From a seat on the bar, drop backward sharply, arching the trunk and the legs backward. Hold this arched position until the head is almost under the bar; then flex the hips sharply forward, and drop to the mat.

*36. *Forward Upstart to Seat.*—Swing in the ordinary grasp. On the front swing, raise the legs and thrust them under the bar between the arms. On the backward swing, thrust the legs along the bar and rise to a side-seat on the bar. The thrust with the legs is slightly later than in the ordinary upstart. (This exercise can be done, with a long underswing, on the low bar.)

*37. *Uprise to Front Rest.*—Begin with a very hard swing. At the top of the back swing, pull the arms to the sides and rise to a high front rest. The bar should strike the thighs about six inches below the hips.

*38. *Half Giant Swing.*—From a front rest swing the legs and the trunk upward and backward to position for a large forward swing. As the body passes under the bar, swing the body upward around the shoulders, and come to a front rest on the bar.

*39. *Turn Upstart.*—Swing forward with the left hand in the ordinary grasp and the right hand in the reverse grasp, and then again backward. Swinging backward, turn the trunk to the left, and arch the body, regrasping just as the swing is completed. Immediately raise the legs, and do an ordinary upstart as in Exercise 27.

*40. *Back Giant Circle.*—Start the exercise as in the half giant (Exercise 38), but swing up and over the bar, completing the swing at arm's length. The exercise is made easier if the trunk is swung upward a little at the shoulders on the upward swing, bringing the arms somewhat forward of the trunk line.

*41. *Forward Giant Circle.*—From a front rest, with the reverse grasp,

swing the legs under the bar, then backward and upward violently, to a handstand and over. Then swing around the bar at arm's length, making a strong pull forward as the swing begins to die out, much as in the uprise.

*42. *Back Upstart.*—Thrust the legs through between the arms on the backswing, as in Exercise 36, but instead of rising to a seat, swing forward again, and as the belt passes under the bar, thrust the legs vigorously up along the back of the bar, and arch the back and the legs, and rise to a back rest.

*43. *Turn Uprise.*—From a front rest, swing backward as though to initiate a backward giant swing, but at the same time crossing the right hand over the left about twelve inches. Swinging downward, turn to the right, and perform an uprise on the far side of the bar, regrasping with the left hand.

## PARALLEL BARS

Work on the parallel bars may be done on bars of various heights. In the beginning, the bars should be of medium height. Most of the exercises, however, are as easily done on the high bars as on the lower ones; except for vaulting exercises done from the side, and for vault or leg circling mounts from the ends, it is well to work from the beginning with the bars raised to the top height. A few of the movements cannot be successfully done on the low bars.

1. *Hand Walk Forward.*—Mount to the cross rest (weight resting on the hands, the arms straight, one hand on each bar), and walk forward on the hands to the far end. This exercise can also be done walking backward.

2. *Double Hand Jumps Forward.*—From the cross rest, proceed forward to the far end with a series of hand jumps. As skills and strength improve, increase the length of the jumps.

3. *Hand Walk, Turn and Hand Jumps.*—Do a hand walk to the far end. Then turn to the front rest on one bar, then to the cross rest on both bars, facing the near end, and return by hand jumps.

4. *Crab Walk on Bars.*—From the cross rest, swing the feet forward to rest one on each bar in front of the hands. Then walk the length of the bars on the hands and feet in this position, and return, walking backward.

5. *Cross Rest, Swing*—From the cross rest, swing the legs and the body forward and backward, keeping the arms straight. As the legs swing forward, the shoulders move backward, and vice versa.

6. From a cross rest at the end of the bar and facing the far end, swing forward and proceed to the far end by a series of cross-riding seats.

7. From the cross rest at the center of the bars execute one of the following vault dismounts over either bar:

   a. *Rear Vault Dismount, in Front of Hands.*
   b. *Front Vault Dismount, Behind Hands.*
   c. *Side Vault Dismount, Facing Outward* (the vault is usually in front of the hands).

8. From the outside cross seat on one bar execute a rear vault swing or a front vault swing to an outside cross seat on the other bar.

9. Front leaning-rest position on the top of the bars; arm dips.

10. From the position of facing the near end of the bars execute the following mounts:

   a. Straddle vault mount over one bar to a cross riding seat on one bar
   b. Straddle vault mount over one bar to a cross riding seat over both bars
   c. Straddle vault mount over both bars to a cross riding seat on both bars
   d. Straddle vault mount over one bar to a cross rest between the bars

e. Right leg full circle outward over the right bar (left circle) to a cross rest between the bars
f. Both legs full circle from outside inward to outside cross seat on the other bar
g. Both legs full circle from outside inward to cross rest between the bars
h. Straddle vault mount over the ends of both bars to cross rest between the bars, with or without the legs in the pike position.

11. Run toward the ends of the bars, and jump forward to cross rest in the middle of the bars (the arms swing upward inside the bars).

12. From an initial movement from a position of facing the rear end of the bars execute one of the following vaults, with or without an intermediate swing:

a. Rear vault
b. Front vault
c. Side vault

13. *Swing in Upper Arm Hang.*—Stand between the bars, and jump to the upper arm hang, resting the weight on the upper arms, with the hands grasping the bars in front of the shoulders, and with the elbows slightly bent. Then swing forward and backward.

14. *Back Roll Dismount.*—From a side seat outside one bar, facing outward, with the hands on the bar, fall backward on to the other bar, and roll backward over both bars to stand on the mat. To prevent fall, the arms are kept back across the bars as long as possible.

15. From a position of grasping both bars at the near end, jump upward slightly and place both feet on uprights of bars, about half way up, swinging downward slightly. Then swing up to a cross rest ("Monkey Mount").

16. *Thigh Roll Mount.*—Hang from the near ends of both bars, swing the legs up between the bars, and spread the legs, with the thighs flexed on the trunk so that they are resting across the bars about six inches in front of the hands. Then swing the legs forward (toward the far end of the bar), pull hard with the hands, and roll up to a cross-riding seat astride both bars.

17. From an outside cross seat on the left bar, with the right hand grasping the right bar, execute a rear vault dismount over the right bar. The legs snap *hard.*

18. From a cross rest between the bars, raise the legs until the heels are above the bars, and hold the position for time.

19. Same as Exercise 18, except that from the position indicated, separate the thighs and bring them together again as many times as possible without having the legs drop below the level of the bars.

20. *Forward Thigh Roll.*—From a cross riding seat over both bars in the middle of the bars, firmly hold the thighs apart, and swing downward fast between the bars and then upward again in a circle. Swinging downward and backward, grasp the right bar behind the right leg with the right hand, and pull. Rising to a cross riding seat again, push up with the left hand on the left bar.

21. The following exercises may be done from either a front rest on one bar, the performer facing inward, or from the mat, the performer standing at the side of one bar. If the second position is used, the bars should be fairly low at first.

a. Side vault right over near bar to a side rest between the bars, the right hand moving to the far bar, immediately followed by a side vault left over the far bar.
b. Front vault to cross riding seat on both bars
c. Side vault to outside side seat on far bar
d. Side vault over both bars
e. Rear vault over both bars
f. Front vault over both bars

22. From a front leaning rest across both bars (with both hands grasping the far bar, with the near bar under the thighs near the knees) execute any of the following exercises:

a. Side vault dismount over both bars
b. Straddle vault dismount over both bars
c. Squat vault dismount over both bars

23. Stand at the side of the near bar, with both hands reverse grasp on the bar. Jump forward and upward on the upper arms to a rest on the bar, and continue over to a stand. Throw the head back hard, throw with the upper arms, and arch the back.

24. From a cross rest on the near end of the bar, execute still dips.

25. From the same position, swing, and execute a dip on the forward swing. Then execute a dip on the backward swing.

26. From a cross rest at the near end, swing, and on the forward swing jump forward with both hands. As the strength increases increase the length of the jumps.

27. *Breast Up.*—Hang from the fronts of the *wrists* from the outsides of the near ends of both bars, with the thighs flexed forward far enough to clear the mat. Pull up as high as possible, turn the hands and grasp the bars, pulling the elbows up behind, and push up to a cross rest.

28. *Backward Upper Arm Circles.*—From an upper arm hang near the far end (with the bar high enough to prevent the feet touching the floor), swing hard, and execute large circles backward. Keep the arms outward hard, flex the hips slightly on the upward swing, and extend them on the downward swing.

29. From a position of a cross rest at the far end of the bar, facing out, swing the legs backward, and then on the forward swing execute a straddle vault dismount forward over both bars. The hips must be high and must move forward.

30. From a cross rest at the near end of the bars, swing forward, and then execute a straddle vault dismount backward over both bars. The hips must be high and must move backward.

31. From a position of standing between the bars, facing the far end, jump upward to a cross rest, with the arms straight.

32. Stand at the near end of the bars, with the right hand grasping the end of the left bar, with palm down; then jump upward with a half left turn to a cross rest between the bars.

33. *Scissors Mount.*—Stand at the side of the bars, and grasp the near bar with the right hand in the reverse grasp and with the left hand in the ordinary grasp, with the hands a little over twelve inches apart. Then spring upward, with the legs shooting upward between the bars and over the far bar; at the same time make a quarter turn to the left. Pivot on the far bar on the left hip and come to a cross riding seat on both bars, facing the right end.

34. *Forward Roll from Cross Riding Seat.*—From a cross riding seat on both bars and with the hands in front, bend the elbows, and roll forward, with the elbows out and the legs apart, and come again to a cross riding seat.

35. *Shoulder Balance.*—Swing the body upward from a cross rest, at the same time bending the elbows, and rest one shoulder on the bar twelve to eighteen inches in front of the hands.

36. *Roll Forward from Shoulder Balance.*—From a shoulder balance, drop the legs backward and the hips forward, and, turning the elbows outward, complete a roll forward to a cross riding seat.

37. *Back Circle Mount at the End of Bars.*—Stand facing outward, and grasp the ends of both bars. Swing the body in a circle upward and backward, and come to a cross riding seat on both bars.

38. *Upper Arm Hang, Upstart.*—From an upper arm hang, swing the

body and the legs upward until the hips are about eighteen inches above the bars and until the thighs are flexed strongly on the trunk. Swing the legs vigorously forward and upward, then check the hip movement sharply just before the legs are in line with the trunk, and swing forward to a cross rest.

39. *Front Upstart at End of Bars.*—Stand at the ends of the bars, grasping both bars. The upstart can be performed in one of two ways: (a) Jump to a pike hang (with the trunk horizontal and the legs flexed above the trunk), swinging forward. On the back swing, just as the belt swings under the hands, thrust the legs vigorously upward between the hands, and rise to a cross rest (drop upstart). (b) Initiate the exercise by a long underswing, jumping upward. On the forward swing, slide the legs forward, with the feet just above the floor, to a full extension. On the return swing, flex the legs on the trunk, and do an upstart as described above (long underswing upstart).

40. *Front Uprise.*—Swing forward vigorously in the upper arm hang. Approaching the front end of the swing, pull forward with the arms, and then push up to a cross rest.

41. *Back Uprise.*—Swing vigorously backward in the upper arm hang. As the legs swing upward to the limit of the swing, pull forward with the arms, and push up to a cross rest.

42. *Drop Back.*—This exercise can be done in two ways. (a) From a cross rest, swing the legs forward and drop the trunk back, flexing the legs over the trunk, and drop to the position for the beginning of the upper arm hang upstart. (b) From a cross rest proceed as above, but allow the shoulders to drop through between the bars to a pike hang swing under the bars.

43. *Hand Spring Dismount Forward.*—From a cross rest at the far end of the bars, swing backward, and continue over in a handspring to the mat. Usually the elbows are bent.

44. *Handstand.*—This exercise is usually learned on the far ends of the bars. Swing upward from a cross rest to a handstand. The shoulders go forward at the beginning of the up swing, and then come back in a line with the hands and the hips. If there is a tendency to fall over forward, release the right hand, pivot around the left hand, and drop to the mat, facing the bars.

Numerous combinations may be made up from these exercises.

## RINGS

The rings may be suspended either six or eight feet from the mat. The lower height facilitates the learning of many exercises. The higher height is convenient when the performer is doing difficult swinging exercises, and is imperative for a few of the exercises done without the swing. It is recommended that the six-foot height be used for the early training and that the eight-foot height be used only for the more advanced performers.

1. First learn to perform the various hangs and rests as follows:
   a. *Ordinary Hang.*
   b. *Bent Arm Hang.*—Pull up, or "chin," from the ordinary hang.
   c. *Inverted Hang.*—Hang with the body inverted, the legs pointed upward and the body in a straight line with the legs.
   d. *Inverted Hang with Pike.*—Perform this exercise the same as c, except that the thighs are flexed to right angle.
   e. *Pike Hang.*—Hang with the trunk approximately horizontal and the thighs fully flexed on the trunk.
   f. *Back Leaning Hang.*—Swing the legs and the trunk upward from an ordinary hang, and insert the feet in the rings up to the insteps. Then turn over backwards, hanging by the hands and the feet, with the back upward.

g. *Back Hang.*—This is the "Skin the Cat" position.

2. *Knee Hang.*—Thrust the feet through the rings, and hang by the knees.

3. *Single Leg Cut Off and Catch.*—From an inverted hang with a pike, or from a pike hang, rotate the trunk forward, bending the elbows slightly, and strike the right leg against the right arm, at the same time letting go the right arm and regrasping.

4. *Double Cut Off Backward.*—From an ordinary hang or from a bent arm hang, swing the legs and the trunk upward vigorously, separating the legs until the crotch is astride the wrists. While the body still has backward momentum, release the rings, and land in a standing position.

5. *Double Front Cut Off.*—From a pike hang position, rotate the body forward vigorously, bending the elbows. At the same time bring the separated legs, with the knees bent, down across the elbows. Immediately after this and while still rotating forward, release the rings, and land standing on the mat.

6. From an ordinary hang, circumduct both legs vigorously and continuously (the legs are swinging around, the feet circumscribing a circle six to eight feet in diameter, the arms are straight).

7. *Breast Up*—Grasp the rings, with the elbows slightly bent and with the rings passing under the heels of the hands. Pull up, or "chin," as high and as rapidly as possible, and immediately raise the elbows backward, and lean forward with the head and the chest, and then push up to a cross rest. (The support is on both the hands, with the arms vertical above the rings.)

8. *Back Lever.*—From an inverted hang lower the body backward to a horizontal position, back up, but with the legs and the trunk in a straight line. Hold the position for several seconds.

9. *Front Lever.*—From an inverted hang or from an ordinary hang, lower or raise the body to a horizontal position, with the face up. Hold the position for several seconds.

10. *Elbow Lever.*—From a cross rest turn the palms forward, and prop the elbows against the front of the abdomen, and then lean forward until the trunk and the legs are in a horizontal plane above the hands.

11. *Side Lever.*—From an inverted hang lower the body to the side, with the right arm behind and against the back, until the trunk and the legs are horizontal. Then extend the left arm overhead.

12. *Working Up Swing with Push Offs from Mat.*—(This exercise can be done only with low rings.) Run forward, and while swinging backward and forward in subsequent swings, push off with both feet to increase the swings. This is best done with one foot at a time, that is, taking two steps at the bottom of the swing each way.

13. *Working Up Swing with Half Turns.*—Run forward, and make a half turn in the air at the front end of the swing. On the return swing run two steps and at the end of that swing turn the body back to the original position and continue as before.

14. After working up a swing, come to a knee hang and swing in this position.

15. Learn elementary dismounts from the high swing as follows:
    a. *Forward Run Away.*—On the front swing just as the bottom of the swing is reached, release the rings, and run forward.
    b. *Back Drop.*—At the end of the back swing, release the rings and drop to the mat.
    c. From a back leaning hang position, release the feet at the end of the front swing, and drop to the mat.
    d. *Front Shoot Out.*—From a pike hang, shoot the feet forward and outward at the end of the front swing, and drop to the mat. *(This exercise should not be used on high swings.)*

e. From an inverted hang or from a back lever, drop off the front end of the swing to a stand.

16. After having worked up a fairly high swing on the low ring, jump from immediately under the rings in the middle of the front swing, and come to a cross rest. (When assuming a cross rest in the swing from any position, the hands should be held directly opposite and *against* the hip joints.)

17. *Drop Back.*—From a swing in the cross rest, at either the front or the back end of the swing, raise the legs forward, and drop the trunk backward to a pike hang. The elbows should be somewhat flexed to ease the jar.

18. *Front Cut Off and Catch in Still Hang.*—Do a front cut off as in Exercise 4, but swing hard, rise higher, and at the top of the upward movement, release the hands and quickly regrasp the rings in front of the shoulders.

19. *Single Leg Cut Off and Catch at Front or Back End of Swing.*—This exercise is the same as Exercise 3, except that it is executed in the swing. (Unless otherwise stated, all movements executed in the swing should come just at the *end* of the back swing or at the *end* of the front swing.)

20. *Backward Cut Off at Front End of Swing.*—When swinging forward, give a backward beat on the mat or in the air just under the rings, and then swing the legs and the trunk forward and upward, and do a back cut off by releasing the rings just before or at the same time the crotch touches the wrists. The higher the swing, the earlier will be the release.

21. *Forward Cut Off at Back End of Swing.*—The cut off is the same as in Exercise 5, except that it is done just at the end of the back swing.

22. *Shoulder Stand with Still Rings.*—From a cross rest bend the elbows, and bend the trunk forward, with the legs in a pike position, until in a bent arm support, with the trunk upward. Then raise the legs until the body and the legs are in an arched position, keeping the balance by moving the elbows in and out as the body tends to fall backward or forward.

23. *From Shoulder Stand Position, Learn to "Break".*—Falling forward or backward from a shoulder stand position, bend the elbows sharply in order to ease the shock of falling. If falling with the elbows straight, one is likely to be whipped from the rings. If the elbows are bent to absorb the shock, there is little danger of this.

24. *Dislocation at Back End of Swing.*—From a pike hang in the swing, wait until the back end of the swing is reached. Then thrust the legs vigorously upward and about twenty degrees backward, and at the same time turn the thumbs out. The body will swing around through the shoulders, and performer will come to an ordinary hang, swinging from the hands.

25. *Cut Off and Catch at Back End of Swing.*—This exercise is the same as Exercise 18, except that it is executed exactly at the back end of the swing.

26. *Upstart from Still Rings.*—From a pike hang rotate the trunk and the legs forward, thrust the legs vigorously forward and upward, immediately checking the hip action and pulling up vigorously with the arms, and coming to a bent arm support (like the cross rest except that the elbows are bent).

27. *Forward Uprise on Still Rings.*—(This exercise should be done only with high rings.)—From a pike hang, swing the legs and the trunk vigorously down and back. Swinging forward and upward again, pull up vigorously, and perform a swinging breast up (see Exercise 7).

28. *Back Uprise in Still Rings.*—(This exercise should be done only with high rings). From a pike hang swing the legs and the trunk vigorously downward, backward and upward. Just as the legs reach the top of the swing, pull upward vigorously with the arms, and execute a rapid breast up movement to a cross rest.

29. *Back Uprise at End of Back Swing.*—This exercise is the same as Exercise 28, except that is is executed exactly at the end of a back swing.

30. *Forward Upstart at End of Back Swing.*—From a pike hang position execute an upstart (see Exercise 26) just at the end of the back swing. Arms are kept straight throughout.

31. *Forward Uprise at Front End of Swing.*—Execute a dislocation at the back end of the swing, and on the front swing, swing the trunk and the legs forward, backward, and then forward again as the front end of the swing is approached. This last swing is executed just as the front end of the swing is reached. Then pull the hands to the sides of the hips, and come to a position of cross rest.

32. *Dislocate at Front End of Swing.*—This exercise is the same as Exercise 24, except that the movement is done at the front end of the swing. The legs are thrust up almost straight between the ropes, and the thumbs are turned outward.

33. *Front Upstart at Front End of Swing.*—From a pike hang execute an upstart just at the front end of the swing (See Exercise 26). Arms are kept straight throughout.

34. *Back Uprise at the Front End of the Swing.*—Swing forward in a pike hang. Just as the front end of the swing is reached, the legs and the trunk are swung violently downward and backward; pull up with a modified breast up motion to the cross rest.

35. *Front Uprise at Back End of Swing.*—To time this exercise correctly it is well to begin with a dislocate at the end of the front swing. Swing the legs forward, backward, and forward again, and on the forward swing, complete the uprise exactly as in Exercise 31.

36. *Back Cut Off at Back End of Swing.*—This exercise is best timed from a dislocate at the front end of the swing. After this, on the second forward swing of the legs, swing the legs and the trunk violently upward and backward, with the legs spread, and execute a back cut off exactly at the back end of the swing. In this cut off retain the grasp of the rings until the crotch has reached the wrists.

37. *Forward Cut Off at End of Front Swing.*—This exercise is the same as Exercise 5 except that it is done at the extreme front end of the swing and is a more vigorous movement needing greater forward rotation.

38. *Back Upstart in Still Rings.*—From a pike hang swing the legs vigorously downward and backward and forward and upward again. On the upward swing, swing the legs high and backward, pull up with the arms until the elbows are bent about ninety degrees, and swing the hips around until they are just between the hands, and come to a cross rest. This exercise is done only on the high rings.

39. *Inlocate on Either End of Swing.*—From a pike hang, as either end of the swing is reached, swing the trunk and the legs downward and backward as in the back uprise, except that the thumbs turn inward. When the legs reach the top of the swing, tuck the head and the shoulders downward, and flex the thighs sharply on the trunk, swinging through a forward dislocation of the shoulders to the pike hang again.

40. *Back Upstart at Back End of Swing.*—This is timed as for the front uprise (see Exercise 34). Otherwise the movement is the same as Exercise 38.

41. *Back Upstart at Front End of Swing.*—This is timed as for the front uprise (see Exercise 40). Otherwise the movement is the same as Exercise 38.

42. *Front Upstart and Half Forward Roll at the End of Either Front or Back Swing.*—From a pike hang at the end of the swing, execute a front upstart as in Exercise 30 or 33, except that instead of coming to a cross rest, turn the thumbs inward, and bend forward and roll forward through the arms to a pike hang. Flex the elbows to about ninety degrees.

43. *Front Uprise and Half Forward Roll at End of Front Swing.*—Begin

as in Exercise 31, but when about to come up to the cross rest, separate the arms somewhat, turn the thumbs inward, and bring the arms backward, rolling forward to a pike hang.

44. *Backward Flyaway at Front End of Swing.*—Begin with a dislocate at the end of the back swing. Swing the body and the legs forward, backward, and forward again. At the end of the second forward swing, arch the body, swing the hips high, and pull the arms forward until the arms and the trunk form an angle of about ninety degrees. Then release the rings, continue a back somersault around, and land standing on the mat.

45. *Backward Flyaway at End of Back Swing.*—Begin this exercise by a dislocate at the end of the front swing. On the second forward swing of the body, while the rings are swinging backward, swing the body and the legs in an arched position upward between the hands until the body is almost vertical, with the feet up. Then release the rings, complete the back somersault, and alight, standing on the mat.

46. *Shoulder Stand in Swinging Rings.*—At either end of the swing, in the cross rest position, bend the elbows and drop the head and the shoulders forward, coming to a shoulder stand as in Exercise 22. Attempt to hold the stand throughout two full swings.

Many of these exercises may be combined. In all swinging exercises the combinations must flow from an appropriate exercise at the other end of the swing or from a still position, such as the pike hang. For example, the back upstart at the end of the front swing is best initiated from a dislocate at the end of the preceding back swing. A back uprise at the end of the back swing could not be done from a dislocate at the end of the front swing, but can be done from a backward swing initiated from a pike hang at the front end of the swing by starting the downward swing of the trunk and the legs just as the backward swing begins. In almost all swinging exercises there is a beat between the front and back swings; that is, the body swings backward, forward, and backward and forward again. The instructor or performer will need to experiment to see which exercises may be readily done from each preceding exercise.

Other combinations of exercises of the ones given may be worked out. For example, following a back uprise at the end of the back swing, at the end of the front swing the performer may drop forward to a pike hang position, and immediately do a front upstart to a cross rest.

CHAPTER 18

# TUMBLING AND PYRAMIDS

*The Values in Tumbling and Pyramid Building*

In any physical education program, tumbling, which includes its satellite, pyramid building, is an indispensable activity. It provides an excellent means of building total muscular strength. It develops balance, poise, agility, and a sense of "whereaboutness." Attempting new stunts develops such mental traits as self-confidence, courage, and determination. It teaches general and specific safety habits. Tumbling stunts in which two or more boys work together emphasize teamwork. Especially is this true in building pyramids. It is one of the few activities in the modern physical education program for boys which gives an opportunity for the display of showmanship both on the part of the student and the instructor. Hence it provides one of the means by which the general physical education program can be sold to the community through the medium of frequent exhibitions.

*General Instructional Suggestions*

Mats are almost indispensable in the teaching of tumbling. Two mats, four by ten feet, should be among the minimum requirements of equipment in any physical education program. It is of utmost importance that these mats be kept in a sanitary condition. The ideal way to do this is to buy mats covered with waterproof material which can be washed at regular intervals. If these are lacking, an extra washable covering should be used and laundered every week or two during the use of the mats. The mats themselves should be beaten, swept, and vacuumed regularly.

Definite rules as to the treatment of the mats by the students should be made and enforced—rules such as (1) never drag the mats across the floor; carry them; (2) stay off mats when you are wearing street shoes; tumble in gymnasium shoes only after wiping off the soles with a wet cloth—otherwise when tumbling, remove shoes; (3) to avoid the spread of skin infections, never tumble without a gymnasium shirt; and (4) store mats away after each day's session.

Each school must determine its own method of storage. This may be done by simply rolling the mat tightly, perhaps tying a rope around it for security and placing it in a dustless corner ; or a mat trunk may be bought, or made in the school's shops, upon which the mats may be rolled into a storeroom. Some schools hang mats on the walls. If hung under the basketball goals at each end of the gymnasium, the mats can thus serve as wall cushions for basketball. School Boards may sometimes be more easily persuaded to buy mats if this double function is explained.

Insist on the development of safety habits. Unless carefully supervised, tumbling may lead to injuries. To avoid needless injuries, it is important to develop safety consciousness in the students before the tumbling unit is taught, and then it is necessary that the instruction of that unit be organized in a manner that will prevent mishaps. Some of the safety measures to be emphasized are given below.

*To the Student:*

1. It is dangerous to "horse" around while a new stunt is being learned.
2. Listen carefully to instructions. It may prevent an injury.
3. Try to master stunts in order of their difficulty. Simple stunts are the foundation of more complex stunts.

*To the Instructor:*

1. Do not overcrowd the mat with performers.
2. The "one-way traffic" rule should always apply when the boys are working across the mat. It is dangerous to allow two squads to work from opposite ends of the mat toward the middle. If necessary, some stunts may be performed from the middle toward the ends in order to accommodate two squads.
3. Double the mats for difficult stunts.
4. Train "spotters" to assist the learner on dangerous stunts. A lunge belt increases the safety of a performer and gives him confidence.
5. Consider the size, flexibility, agility, strength, and maturity of each boy when teaching him to perform a new stunt or before placing him in a pyramid. A large boy is not necessarily a strong boy and may be injured if he is immature and is placed at the bottom of a pyramid.

The learning of any new stunt requires (1) verbal description by the instructor, (2) demonstration by the instructor or a skilled student, and (3) practice by the learners. The first two steps may occur simultaneously, with the instructor describing the stunt as it is being demonstrated. The instructor should use "catch" phrases as much as possible, such as "duck your head" on dives and "triangular base" on headstands. These phrases should be repeated often. A demonstration should, preferably, be performed by the instructor, but it is possible for a teacher to produce a good class of tumblers and still not be able to do the stunts himself. A proficient student may be selected for the demonstration. Explain the technique to him, and assist him in its performance. Use the appropriate catch phrases in this demonstration to assist the students in getting a mental picture of the activity. After the demonstration, each student then attempts the stunt, with assistance from the instructor and class leaders when necessary. Each stunt should be practiced until mastered.

The best class organization for teaching tumbling is to divide the group into squads. Each squad should have a mat, and one of the more expert students for a leader. As the stunts progress in difficulty, the boys who are slower to learn should be kept together in the same squad, and those with high motor educability in another squad. Those of medium ability should rate a place in other squads. This allows for individual differences in learning and makes for smoother progression. The instructor should move from one squad to another, assisting when he is needed.

## TUMBLING

There is a vast number of stunts available for inclusion in a tumbling program. Two types are presented in the following pages:

1. Individual stunts
2. Double (or pair) stunts

Most of the stunts presented here are elementary, and the stunts presented in each of the following lists are arranged in order from the more simple to the more difficult. The instructor would find it advantageous to introduce the stunts in this order. Any instructor who wants additional stunts, either elementary or advanced, can find them described in standard books on the subject.

### Individual Stunts

1. *Forward Roll*
   a. Starting Position: Full knee bend, hands on mat.
   b. Movement: Put weight on hands, chin on chest, push off hard with feet, roll forward onto neck and shoulders, grasp ankles with hands, and continue roll in tuck position. Rise to standing position.

2. *Squat Stand*
   a. S. P.: Full knee bend, hands on mat inside of knees, fingers pointing forward.
   b. Mov.: Lean forward, bend elbows outward, rest knees on elbows, raise feet off ground, balance on hands only (for at least ten seconds).
3. *Back Roll*
   a. S. P.: Standing.
   b. Mov.: Sit down, with knees nearly straight, reaching hands toward toes. Straighten hips partially just before striking mat, and roll backward; as feet go over head, bend neck forward and put hands on mat near shoulders. Push off with hands, drop on feet, and rise to standing position.
4. *Long Dive*
   a. S. P.: Standing, run forward.
   b. Mov.: Jump off both feet, dive forward, keep head and shoulders up until hands touch mat; then tuck and grasp ankles as in forward roll. Rise to feet. Begin gradually, diving only three or four feet at first, later gradually working up to a dive of ten feet. Do *not* dive over a long row of kneeling boys; the stunt is too dangerous.
5. *High Dive*
   a. S. P.: Run forward.
   b. Mov.: Jump off both feet, dive forward—upward: head and shoulders will be higher than feet until top of dive is reached, when head and shoulders decend toward mat. When hands touch mat, take full weight on arms momentarily; then tuck as in forward roll. Rise to feet. Begin very gradually, diving only over a rolled mat. Dive onto several thicknesses of mats.
6. *Head Stand*
   a. S. P.: Hands shoulder width apart on mat, fingers straight ahead, body and legs in sprinter's crouch position.
   b. Mov.: Place top of forehead on mat, fifteen inches ahead of hands. Kick upward with rear foot, bringing both legs to perpendicular position, feet together, toes pointed, back arched.
7. *Round Off-Right*
   a. S. P.: Run forward.
   b. Mov.: Execute a skip-step with right foot forward, at the same time swinging hands upward. Whip both hands down to mat, left hand eight to ten inches ahead of right; at the same time kick upward with rear leg: then turn body half right, push off with hands, and snap feet down to mat facing starting position. Finish with a jump. (May be done with either foot forward.)
8. *Elbow Head Stand*
   a. S. P.: Place forearms on the mat, with elbows shoulder width apart, hands together, palms up. Body and legs are in sprinter's crouch.
   b. Mov.: Place top of forehead in hands. Kick rear leg upward, follow with other leg, bringing both legs to a vertical position, feet together, toes pointed, back arched.
9. *Cartwheel-Right*
   a. S. P.: Running forward.
   b. Mov.: Execute a skip-step with right foot forward; at the same time swing hands upward. Turn body quarter left and bend

forward. Whip hands downward. As right hand touches mat, kick leg upward. Legs pass through vertical position. Left foot lands on mat, then the right foot. Rise to stand, with feet spread, facing sideways to starting position. In this exercise, hands and feet should be evenly spaced like four spokes of a wheel. Do two cartwheels in succession—both hands and both feet touching along a straight line. May be done with either foot forward (on either side).

10. *Hand Walk*
    a. S. P.: Hands, on mat, shoulder width apart, fingers slightly spread and forward. Body and feet in sprinter's crouch position.
    b. Mov.: Kick rear foot upward, followed by other foot until both legs are vertical. Hold back arched, knees straight, toes pointed and together. Overbalance forward slightly to facilitate movement of hands. Look forward. Walk forward.
11. *Forearm Stand*
    a. S. P.: Forearms on the mat, palms down, thumbs almost touching, elbows shoulder width apart, head up, body and legs in sprinter's crouch position.
    b. Mov.: Swing rear leg upward slowly, followed by other leg until both legs are vertical. Back should be arched, feet together, toes pointed. Keep elbows bent at about a right angle; keep head off floor.
12. *Knee Walk*
    a. S. P.: Kneeling on mat, hands grasping ankles.
    b. Mov.: Lean slightly forward, pull feet off mat, and walk forward on knees. Do this only on the mat.
13. *Backward Roll to Head Stand*
    a. S. P.: Sitting on mat, with knees bent slightly, hands on mat, at sides.
    b. Mov.: Roll backward, swinging arms overhead full length on the mat, and immediately shoot feet upward over head to vertical position, coming to a balance on head and hands, as described in head stand.
14. *Running Forward Handspring*
    a. S. P.: Running forward.
    b. Mov.: Execute a skip-step. At the same time swing arms upward, bend trunk forward, and whip hands down to the mat. Kick rear leg upward hard, and follow with other leg until both legs are together. Push up *hard* with hands, when trunk is just beyond hands, and arch the back, and keep head back. Land on feet. If there is a tendency to fall on back, bend knees and hips at instant feet hit mat.
15. *Bridge Over-Right*
    a. S. P.: Front leaning-rest position, back arched, hands at shoulder width, feet twenty-four inches apart.
    b. Mov.: Raise left hand, then left foot. Turn body half toward right. Place left hand on mat, then left foot; body is now arched with back toward floor. Raise right hand, then right foot. Turn body half right. Place right hand on mat, then right foot.
16. *Snap-Up*
    a. S. P.: Sit on mat, with knees bent slightly and hands on the mat at sides.
    b. Mov.: Roll backward to shoulders, with legs straight and ex-

tended back over head. Place hands on fronts of thighs. Start to roll forward, then swing legs vigorously upward and forward, pushing down hard with head and shoulders, and push thighs hard with hands at the same time. Bend knees and hips just as feet strike the mat.

17. *Flop Over*
    a. S. P.: Front leaning-rest, elbows slightly bent.
    b. Mov.: Drop hips, bend arms slightly. Throw hips upward, straighten arms, push off from mat with enough spring to rotate body laterally, and land in original position.
18. *Double Elbow Lever*
    a. S. P.: Kneel on mat. Place hands about four inches apart on mat, with palms down and fingers turned backward, elbows close together, stomach resting on bent elbows.
    b. Mov.: Put weight on elbows, and lean forward enough to raise toes off floor. Maintain balance by raising or lowering legs slightly and straightening back.
19. *Hand Stand*
    a. S. P.: Hands on mat, shoulder width apart, with fingers forward and slightly spread. Body and legs are in sprinter's crouch position.
    b. Mov.: Kick rear leg upward, follow with other leg. Secure and hold balance with back arched, legs together, toes pointed. If there is a tendency to fall forward (on to back), press hard with fingers and straighten elbows hard, and force head back. If the tendency is to fall backward, bend elbows slightly, and hold weight on heels of hands.
20. *Running Front Somersault*
    a. S. P.: Running forward.
    b. Mov.: Jump onto both feet, with hands forward and upward (elbows half bent). Jump forward and upward, tuck legs, pulling shins up to a tuck with hands, and turn forward in air. When turn is nearly complete, straighten legs and body, and land on feet.
21. *Bucking Broncho*
    a. S. P.: Standing.
    b. Mov.: Jump off both feet, bending body forward, and landing on hands in a near handstand position (knees bent over back). Hold this handstand position momentarily; then snap feet down to mat, pushing hard from mat with hands, and land in original position. Do this three times in succession with an even rhythm.
22. *Back Handspring*
    a. S. P.: Standing with knees slightly bent, body erect, arms forward.
    b. Mov.: Swing arms down to sides, bend knees halfway, lean (lose balance) backward as though about to sit on a chair. At this point, throw head and chest back, and abdomen up, and extend legs fully, landing on hands with arms almost straight. Then snap legs down, push with hands, and land on feet. (Practice at first with a supporting belt.)
23. *Back Somersault*
    a. S. P.: Standing, with knees slightly bent, body erect, arms forward.
    b. Mov.: Swing arms down to sides, and bend knees halfway. Keep body balanced and upright. Throw arms forward-upward, throw-

ing head back, spring upward and slightly backward, tuck legs hard, grasp shins, and turn backward in air. When the turn is almost complete, straighten legs and body. Land on feet. (Practice first with a supporting belt.)

Encourage the boys to work out combinations of the various stunts as they are learned, combining them into series.

## DOUBLE STUNTS

Double stunts are of two types: like part and unlike part. In the first type, both partners perform the same activity; in the second type, each partner performs a different activity. Several stunts of each type are presented below. Where there is a "top man" and a "bottom man," the top man will be I, and the bottom man II. To insure agreement and perfect coördination between the two men, they should use pre-arranged signals, such as "one and two," or "alley-oop." They should always be clear as to whether they are to go through with the stunt or are merely rehearsing the timing.

1. *Leap Frog, Both Roll*

   a. S. P.: I stands four feet behind II. Both face the same direction. Both stand with knees slightly bent, forearms resting on thighs just above knees.

   b. Mov.: I straddle vaults over II. When I lands, both execute a forward roll, rising to starting position. Then II vaults over I.

2. *Cradle Rock*

   a. S. P.: I sits on mat, knees slightly bent, feet on floor. II, facing I, sits on I's feet with his legs lying over I's thighs with feet on mat under II's buttocks. Each clasps the other's shoulders.

   b. Mov.: I lies back, pulling II to a stand. II then rocks back, pulling I up to a stand. Continue, rocking backward and forward.

3. *Elephant Walk*

   a. S. P.: Stand face to face.

   b. Mov.: I puts hands on II's shoulders and jumps astride II's waist, high up, locking feet behind. I then leans backward, and downwards, pulls head and shoulders between II's legs, puts hands on back of II's ankles, and extends arms. II then bends forward, puts hands on the mat, and walks forward carrying I.

4. *Camel Walk*

   a. S. P.: I stands three feet in front of II. Both face the same direction.

   b. Mov.: I bends forward, places hands on the ground, and swings up to a handstand with legs apart. Then with II's assistance, I places legs around II's waist, locking I's feet behind II's back. I bends forward between II's legs and clasps the backs of II's ankles as II bends forward and places hands on the ground. II then walks forward carrying I.

5. *Monkey Walk*

   This is the same as the Camel Walk, except that I clasps arms around II's buttocks instead of resting hands on II's heels.

6. *Double Knee Bend Walk*

   a. S. P.: Standing back to back.

   b. Mov.: Interlock each other's arms at sides. Both execute a full knee bend, pressing backs together. Walk in this position, I going forward, II backward.

7. *Double Roll—Forward and Backward*

   a. S. P.: I lies down with legs held vertically, knees loosely bent

and feet spread. II stands with feet spread near I's head. Each grasps other's ankles.

b. Mov.: II executes a forward roll over I, using II's feet as he would his own hands. II is pulled up by I as he rolls over. II then rolls over I. Execute two complete forward rolls. Then retaining the same position, execute two complete backward rolls. Knees must be kept loose enough so that the partner can control position of feet as they are placed on ground.

8. *Back to Back and Over*

a. S. P.: Standing face to face at a distance of three or four feet, arms forward, clasping each other's hands.

b. Mov.: Retaining grasp, turn under one arm back to back, hands finish overhead. I crouches slightly and bends forward, pulling II over backward. II lifts feet, bends knees, and rolls backward over I's back, and drops to mat, facing I. Hands remain grasped. Repeat with I rolling over II, and continue.

9. *Roll and Dive*

a. S. P.: Both boys on hands and knees, about six feet apart, crossways of mat, and heading the same way.

b. Mov.: II rolls sideward toward I, who dives diagonally over him and rolls sideward. I then rolls toward II, who dives over I and rolls. Continue.

10. *Triple Roll and Dive*

This is a three-boy stunt, and is like Stunt 9. In each case the middle boy rolls out, and the outside boy on that side dives and rolls in. As he rolls outward, the outside boy on the side to which he rolls dives over him and rolls. This alternating movement is continued a predetermined number of times.

11. *Over and Under Dive*

a. S. P.: Standing face to face at a distance of eight feet.

b. Mov.: I executes a forward roll with legs spread, II dives fairly high through I's legs, and executes a forward roll. Both rise to feet and turn face to face. Repeat with I diving through II's legs, and continue to alternate.

12. *Hand Balance, Pull Over*

a. S. P : I standing five feet behind II. Both facing the same direction.

b. Mov.: I executes a hand balance directly behind II. II grasps I's ankles, one over each shoulder and leans forward. I rises to a sitting position on II's back. II straightens up and pulls I to a sitting position astride his shoulders. II leans forward, letting I slide forward to a standing position on the mat. Repeat with II going over I.

13. *Neck Lift*

a. S. P.: I standing three feet behind II. Both facing the same direction.

b. Mov.: I bends knees and trunk forward, putting head between II's legs, putting hands on his own knees. II places hands on II's shoulders and leans backward with a continuing roll. I raises up as II rolls backward over his back, and II drops to a standing position behind I. Repeat with I rolling over II. When well timed, this can be done without II's grasping I's shoulders.

14. *Ankle Pick-up*

a. S. P.: I lying on back, hands on mat behind shoulders, legs

vertical. II standing behind I's hips, facing partner's legs, and grasping partner's ankles.

b. Mov.: II hoists I's legs upward and outward, while I straightens body and pushes up with hands. II then releases ankles of I who turns backward and snaps feet down, landing in a standing position facing I.

15. *Shoulder Mount, Stepping on Bottom Man's Thigh*

a. S. P.: Standing face to face at a distance of four feet. Cross arms and clasp each other's hands with II's right hand above left.

b. Mov.: II stands with feet spread, knees quarter bent, I steps to II's left side, places left foot on II's left thigh. Then without stopping, I swings right foot behind II's back, places right foot on II's right shoulder, then places left foot on his left shoulder. Then they release hands and II puts his hands on partner's calves, pressing them against his head while I rises to a stand. II then places feet together.

16. *Roll over Thrower's Back from in Front*

a. S. P.: Stand face to face at a distance of fifteen feet. II bends knees slightly, bends trunk forward, bends head forward, and places hands on knees.

b. Mov.: I runs forward and jumping off both feet executes a roll over II's back. I rolls and drops to a standing position.

17. *Backward Roll over Feet and Hands*

a S. P.: II lies on back, knees and thighs flexed, arms vertical. I sits on II's feet.

b. Mov.: I leans back. II places hands on I's shoulders, at the same time pushing I's buttocks upward hard with feet. I rolls over backward, then snaps feet down to a standing position.

18. *Knee-Shoulder Spring*

a. S. P.: II lies on back, knees flexed, feet on mat, arms vertical. I stands fifteen feet in front of II's feet.

b. Mov.: I runs forward, executes a skip step, places hands on II's knees, executes a forward hand spring, and lands in a standing position. II supports the I's shoulders if necessary.

19. *Snap Out*

a. S P.: I lies on back of neck and shoulders, knees bent and thighs drawn up to abdomen. II straddles I, facing I's feet. Partners clasp hands.

b . Mov.: II pulls up and forward as I extends legs forward and upward. Then I arches back and lands in a standing position.

20. *Knee-Shoulder Balance*

a. S P.: II lies on back, knees bent, feet on mat, arms vertical. I stands facing II's legs.

b. Mov.: I places hands on II's knees, rests shoulders in II's hands and kicks up to a shoulder balance, back arched, legs together, toes pointed.

21. *Groin Pitch*

a. S. P.: II lies on back with knees and thighs half bent (feet are about two feet off ground), toes spread, arms vertical. I places II's feet against groin. Partners clasp hands.

b. Mov.: II bends knees and thighs fully, and then suddenly thrusts legs upward and toward head. I leans forward against II's feet and with II's leg thrust, jumps upward and forward and executes a forward handspring, arches back, releases II's hands, and lands in a standing position.

22. *Handspring from Hips with Neck Lift*

a. S. P.: Stand face to face with feet apart. II bend places head between I's legs. I places hands on back o.

b. Mov : II rises up. I executes a forward handspring hips, and lands in a standing position.

23. *Jump over II's Head*

a. S. P.: II stands directly behind I. Both face the same direction. I places hands behind hips. II clasps I's hands.

b. Mov : I jumps up, bends knees sharply and spreads feet slightly. II lifts I, carrying him backward over head. I drops to ground behind II. Hands remain clasped. Then I jumps forward over II's head; II assists I by lifting him and carrying him forward. Hands remain clasped.

24. *Pull Through*

a. S. P.: I lies on back, knees to chest, hands clasping shins. II stands in front of I (with back to I), legs spread, bends forward and upward. I holds himself in a ball until he is well forward. II presses down on I's ankles and releases him. I, having made a backward turn in the air, straightens body and drops to feet.

25. *Back Somersault with Leg Lift at Side*

a. S. P.: I stands sideways in front of II. I's right side is near II. I holds right leg (knee stiff) forward and puts right hand on II's left shoulder. II grasps I's leg, right hand under I's ankle, left hand under I's knee.

b. Mov : I does a backward somersault, springing from the standing leg. II assists I by hoisting I's leg.

26. *The Pitch*

a. S. P.: Partners face each other, about ten feet apart. II stands with feet apart and left foot slightly ahead of right, with knees slightly bent. II's hands are just below belt, close to body, right hand, palm up, resting in palm of own left hand.

b. Mov : I walks forward, places right foot in II's hands, and places hands on II's shoulders. He then springs upward, leaning slightly backward, straightening right knee vigorously. II lifts up and away from body, throwing I in a high back somersault.

27. *Back Somersault from Hands*

a. S. P.: II sits on mat, legs apart, and with hands resting on mat in front of crotch, palms up. I steps with balls of feet on II's hands.

b. Mov : I turns back somersault, and II assists by a strong throw upward with hands.

28. *Back Roll from Seat on Shoulders*

a. S. P.: Partners stand facing each other about four feet apart. II stands with feet slightly apart.

b. Mov.: I places hands on top of II's head, and jumps up astride II's neck. II assists by putting hands high up under I's thighs and lifting. I sits close to II's face. I's legs should be straight, and slightly separated. II places hands under I's legs just below hips. I now rolls vigorously backward and downward, arching back and pressing down hard on II's shoulders with legs. II waits until head has dropped to below level of II's shoulders, then, jumping slightly with legs, pushes hard *up* and away with hands. I then tucks as much as is necessary and alights on feet.

29. *Roll over Back from Handstand*
    a. **S. P.:** I does a handstand near end of mat, back toward end of mat, legs apart. II steps between I's legs, and turns back toward I's crotch, pulling I's crotch firmly astride above II's hips. II then places hands on I's heels, I's legs being beneath II's armpits.
    b. Mov.: II bends briskly forward, pressing down hard with hands, pressing I's heels down and back. I at the same time bends backward and then rolls backward over II's back. Just as I is about to roll backward over II's shoulders, II straightens up about a foot, raising I enough to give him time to turn over and alight on feet, facing II.

30. *Forward Somersault with Leg Lift at Back*
    a. S. P.: I stands on one leg, with other leg bent, calf pressed against bottom of thigh. II stands directly behind I and grasps I's lifted ankle with both hands.
    b. Mov.: I jumps up and executes a forward turn in the air. When turn is nearly completed, he straightens out and drops to a standing position. II assists by lifting and spinning the performer, who aids turn by vigorously straightening bent knee.

31 *Low Arm Hand Balance*
    a. S. P.: I lies on back, feet spread, arms upward, I stands facing II and straddling II's body at hips. I leans forward, placing shoulders in II's hands, at the same time clasping II's arms at the biceps.
    b. Mov.: I kicks up with one leg followed by the other until he reaches a hand balance, with back arched, legs together, and toes pointed.

32. *High Arm Hand Balance*
    a. S. P.: Standing face to face, with feet spread. II places hands on I's shoulders. I grasps II's upper arms.
    b. Mov.: I jumps astride II's hips. II swings I first downward between his legs, then upward. I rolls upward to a hand balance on II's shoulders.

When practicing tumbling stunts, the boys should be taught to "spot" each other to prevent accidents. The "spotters" should stand where the performer will be at the critical part of the stunt, and be ready to aid anyone not able to perform the stunt. This is usually done by a lift under the center of gravity to give the performer time to turn the requisite amount, though frequently the spotter will add to the speed of the turn by lifting a leg, or will simply catch a falling performer, usually on a forearm. Instructors should teach the art of spotting to all the boys, and coach them to watch each other.

## PYRAMID BUILDING

In teaching pyramid building, it is best to teach the separate units of the pyramids until they are well learned, and the boys know the names for them. Most pyramids are made on the mats alone, but the horse and the parallel bars lend themselves well to pyramid construction. Most of the units that are put together on these pieces of apparatus are those first learned on the mats.

A number of simple units are given here. The teacher and pupils will be able to devise many others. Each should be named so that the boys will know just what to do when any unit is called for. In general, it is best, while teaching this activity, to encourage the boys to make up the combinations.

Fig. 53. Knee Bend

Fig. 54. Span

Fig. 55. Slide

Fig. 56. Small Squash

Fig. 57. One Up

Fig. 58. Wheelbarrow

Fig. 59. Reverse Wheelbarrow

Fig. 60. Headstand

Fig. 61. Double Header

Fig. 62. Hold-up

Fig. 63. Second Story

Fig. 64. Two High

Fig. 65. Colossus

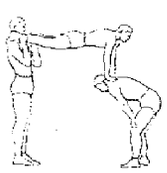


Fig. 66. Brooklyn Bridge

Fig. 67. High Tension

Fig. 68. Hand to Hand

Fig. 69. Hand to Feet

Fig. 70. Harp

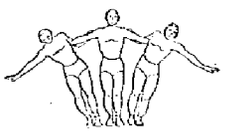


Fig. 71. Little Fan

Fig. 72. Big Fan

Fig. 73. Neck Stand

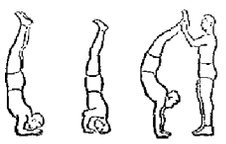


Fig. 74. Front Steps

Fig. 75. Up and Over

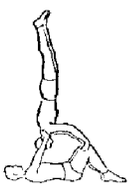


Fig. 76. Shoulder Stand

Fig. 77. Tickle Toe

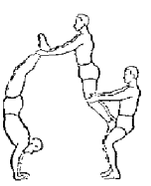


Fig. 78. Leaning Tower

Fig. 79. Strong Man

Fig. 80. Head and Shoulders

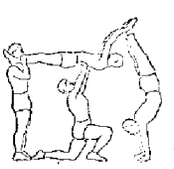


Fig. 81. Big Bluff

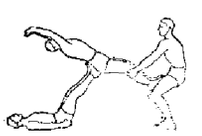


Fig. 82. Foot Support

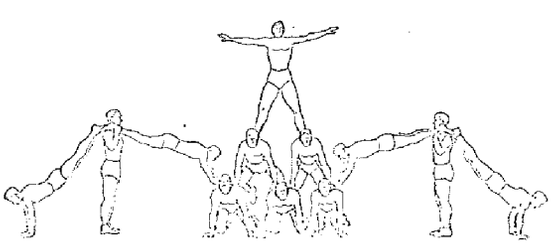


Fig. 83. Sample Combination Pyramid No. 1.

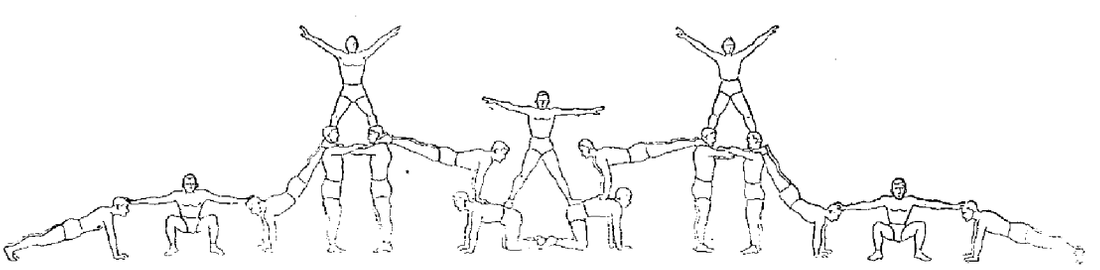


Fig. 84. Sample Combination Pyramid No. 2.

CHAPTER 19

# INDIVIDUAL AND DUAL STUNTS

Stunts, or feats of skill, strength or endurance, have been interesting to boys of all ages. Properly presented, with a bit of the competitive spirit injected, they are challenging and elicit whole-hearted participation. Many stunts are exceedingly strenuous and good exercise. They may be injected into the group exercise program on a par with tumbling and apparatus stunts. The selection given here is culled from a very large number of such stunts and represents those which (1) should appeal to boys and (2) are strenuous enough to be excellent developmental exercises.

## STUNTS OF BALANCE

1. *The Tip-up*—Squat down, and place hands on the mat about six inches in front of feet, with hands pointed straight forward. Rest insides of knees on backs of elbows, and tip forward, lowering head toward the mat, until resting on hands alone. Hold the balance for ten seconds.

2. *Full Turn.*—Stand with feet together. Jump into the air and make a full turn to the left or right, landing on the same spot.

3. *Sit on Heel.*—Stand on left foot, with right foot extended forward off the floor. Sit down on heel of left foot, without touching right foot or hands to the floor. Stand erect without losing the balance.

4. *Backward Bend.*—Stand toeing a line, feet well apart. Hold a wand vertically upward, grasping lower end with both hands (hands in front of face). Bend body backward, and touch free end of wand to floor behind.

5. *Balance Bend.*—Stand erect, heels together, hands behind back, right hand clasping left wrist. Bend knees deeply and touch finger tips of left hand to floor, without separating heels.

6. *Fish Hawk Dive.*—Place a piece of crumpled paper on the floor. Kneel on right knee about six inches from the paper. Extend left leg backward off floor and grasp this ankle with left hand. Bend trunk forward, picking up paper with the teeth, at the same time maintaining balance without releasing grasp on left foot.

7. *Jumping over Foot.*—Hold toes of either foot in opposite hand. Jump up, and jump free foot over foot that is held, without letting go.

8. *Three-Point Headstand.*—Place both hands on the mat, with hands separated about twenty-four inches. Place one foot six to twelve inches behind hands, and thrust other leg backward with knee slightly bent. Place head on the mat about twenty-four inches in advance of hands. Swing rear leg up, pushing with hands, and come to a stand on head and hands, with trunk and both legs in the air. Keep center of gravity just over the center of the triangle formed by head and hands.

9. *Forearm Headstand.*—Kneel on the mat, and place elbows and backs of forearms on the mat. Rest back of one hand in palm of other hand, with both palms up. The hands are extended out in front so that the forearms form an angle of about sixty degrees. Then place forehead in palm of upper hand, and swing up to a headstand as in the *Three-Point Head Stand.* Since the base of the headstand is smaller than that in the *Three-Point Headstand,* more care needs to be taken to get the center of gravity within the triangle.

10. *Elbowstand.*—Begin as in the Forearm Headstand, placing forearms on the mat, but palms of hands are down and slightly separated. Swing legs upward until body and legs are vertical above forearms. This is much like the *Forearm Headstand,* except that the head is not touching the mat.

STUNTS OF HIGH KICKING

11. *Standing High Kick.*—Keeping one foot in contact with the floor, kick as high as possible. In competition, a tambourine, suspended by a cord running over a pulley, is kicked. This cord is calibrated so that by reading a scale upon the wall one knows the height of the tambourine. This standing high kick is a stunt which encourages development of the limberness of the hamstrings of the legs, but is an event which is strongly weighted in favor of the long-legged boy.

12. *Running High Kick.*—This may be done in two ways:

a. Run a few steps, jump from one foot, and then kick as high as as possible with other foot.

b. Run a few steps, spring from left foot, kicking first rather high with right leg, and then with a scissors movement, swing right leg downward and left leg upward, kicking as high as possible with left foot and alighting upon right foot. (The feet may, of course, be interchanged.)

13. *The Hitch Kick.*—Start exactly as in the second version of the *High Kick* noted immediately above. Alight upon same foot from which the jump was made, and with which the kick was executed. After alighting, hop on that foot three times before placing other foot upon the mat. To illustrate: spring from left foot, kick with left foot, and alight upon left foot, and then hop three times on left foot.

14. *Double High Kick.*—Run several steps, and spring from one foot, at the same time swinging both arms backward. Upon alighting on both feet, spring upward, swinging both arms forward and upward; and then while rising in the air from the jump, swing arms forward and downward, bring knees up high, and then kick upward with feet at the last moment before starting to drop. Then bend knees sharply, swing arms forward and upward again, and alight on both feet. This should first be practiced while the boy is kicking at a low height.

In formal competition all of these kicking events are run off exactly as in the high jump, three kicks being permitted at each successive height.

15. *Human Ball.*—Sit on the mat with knees up. Place arms inside legs, around to the front, and lock fingers in front of ankles. Rock from right to left to get momentum started, and then roll on the right side. Continue rolling without stopping, making a circular movement.

16. *Through the Stick.*—Stand with feet in a side straddle position, and hold a wand or pole behind back, with arms straight and palms facing forward. By twisting arms, bring the wand over head and down in front of body without loosening the grip. Swing right foot around the outside of right arm, and step over the wand. Raise left arm and pass wand backward overhead, at the same time bringing the right end of the wand down and back. Finish standing up by stepping right foot and then left foot back over the wand.

17. *Knee Spring.*—Kneel, with legs stretched backward and toes of both feet out flat behind. Swing arms and jump to feet without rocking back on toes.

18. *Jump Stick.*—Hold a broomstick or stick of wood at least twenty-four inches long in both hands, with arms parallel. Jump high in the air, and swing the stick backward underneath feet. On the second jump, return to the original position.

19. *Jump Leg.*—Place one foot against a wall about twenty-four inches above the floor. Then turn sharply to the side of foot against the wall, and jump other foot over foot against the wall, without losing the position of foot against the wall. For example, place left foot against the wall, jump over it with right foot, and alight upon right foot, with left foot still against the wall. In the process of doing this a half left turn will have been made.

20. *Double Heel Click.*—Jump high in the air and click heels rapidly twice, and alight with feet apart.

21. *Under Stick.*—Clasp a baseball bat or wand six inches from one end, with other hand about twenty-four inches above first hand. For example, grasp a bat with right hand six inches from one end and left hand twenty-four inches farther up the bat. Point both thumbs forward. The right end of the bat is then placed on the ground about where the head would go in a headstand. Twist downward and to the right and with feet resting on the floor, twist underneath right arm and come back to the original position.

22. *Finger Jump.*—Hold tips of two middle fingers together, and stretch arms and wrists downward as hard as possible. Jump upward, bringing knees and feet up as high as possible, and swing hands, with fingers touching, beneath feet. It may be well to start this stunt, holding on to two ends of a handkerchief or cord, gradually shortening the distance between hands with each succeeding jump.

23. *Heel Jump.*—Stand with feet together, bend over and clasp toes with hands. Holding on to toes, jump forward, trying to jump a foot's length without letting go of toes.

24. *Jump Foot.*—Grasp toes of one foot with opposite hand, and jump over this foot with other foot. The trick is to jump high with the jumping leg, pull the foot up high and sweep the other hand and foot backward past the jumping foot. Then jump back.

25. *Russian Dance.*—Squat fully down on both heels with arms forward. Then shoot one leg forward until knee is straight and heel is resting on the floor. Now change feet rapidly and rhythmically. This may be done in another way. In the second way, the feet are shot out to the side rather than forward. *Not to be used with boys having knee injuries.*

26. *Mule Kick.*—Swing up to a temporary handstand. Then bend knees and swing feet over back; then pushing hard with hands, snap feet down to the ground and come up to a semi-stand position. Then again jump to the handstand position and continue to snap back and forward.

*Strength Stunts*

27. *Rocking Horse.*—Lie down on the mat, face down. Raise legs up and grasp ankles. With a forward and backward movement, rock body to imitate a rocking chair.

28. *Neck Throw for Distance.*—Use a salt bag filled with sand, or a light medicine ball. Stand behind a starting line, with back to the throwing space. Bend forward, and place bag or medicine ball on back of neck. Without using hands throw bag backward as far as possible.

29. *Chair Lift.*—Kneel on right knee at the side of a chair. Grasp firmly extreme lower end of back leg with right hand. Lift chair from floor.

30. *Three Chair Layout.*—Place three chairs in a straight line. Sit on middle chair, facing one of the others. Lie down, placing head on the first chair. Stretching knees, rest heels on the third chair. Fold arms on the chest. Stiffen body and have middle chair removed by a companion, and retain the stiffened position.

31. *Back Lever.*—Hang from the horizontal bar and then raise legs and thrust them under the bar between arms, straightening body upward. The body should now be in a straight line from shoulders to heels. Then lower body until it is horizontal or parallel to the floor, and hold this position for five seconds.

32. *Elbow Lever.*—Hang from the horizontal bar and do a backward circle over the bar to a front rest; that is, the fronts of thighs are against the bar. Change grasp to a reverse (palms forward) grasp. Then bring hands closer together until they are from nine to twelve inches apart. Propping elbows against sides just above hips, lean forward until body is parallel

to the floor and above the bar, with only hands touching. Hold this position for five seconds. (This stunt may also be executed on the floor.)

33. *One Knee Dip.*—Grasp toes of one foot with opposite hands, holding hand and foot behind standing leg. Then bend knee of standing leg until opposite knee touches the floor, and then rise to the erect position again. This may be done only once, or there may be competition to see how many times each individual can do it.

34. *Knee Bend, Holding Ear.*—Stand on right foot. Grasp left foot behind right knee with right hand. Place left hand behind head, and grasp right ear. Bend, and touch left knee to the floor, and stand up.

35. *One Leg Squat.*—Raise one leg forward, and both arms forward for balance. Then squat fully down on other foot (which is flat on the floor) until hip is resting just above heel. The opposite leg is completely raised from the floor. Then rise to a stand.

36. *Elbow Extension Press-up.*—Lie face down on the mat with legs stretched straight out behind and arms straight out as far as possible in front. Resting on toes and elbows, press all other parts of body up away from the mat.

37. *Hand Extension Press-up*—The same as Number 36, except that the press up is on toes and hands. Elbows must be straight. (This may be made into a competition by seeing how long the individual can hold the position with waist line six inches from the floor, or how many times it can be done.)

38. *Bridge on Head and Heels.*—Lie full length on back, folding arms across chest. Then rise from the mat by pressing down with head and heels, keeping knees straight.

COMPETITIVE STUNTS

39. *Pull-up.*—It is suggested that this may be done competitively in the five following ways:

a. The number of pull-ups that can be done continuously without regard to time. Either grasp may be used. For form see page 245.
b. Number of pull-ups that can be accomplished in ten seconds.
c. Number of pull-ups that can be accomplished in twenty seconds.
d. Number of pull-ups that can be accomplished in thirty seconds.
e. Number of pull-ups that can be done without regard to time while legs are held in half level position, that is, legs parallel to the floor, and knees straight.

40. *Belly Grinds.*—Hang with ordinary grasp from horizontal bar. Then pull up, make a back circle over the bar and return to a hang. Do this continuously, without pausing between movements, as many times as possible.

41. *Partner Chins.*—Pair the boys off according to height. The easiest way to do this is to line them up according to height and to have them count off, with the odd and even numbers being paired. One boy lies on back on the floor, elbows bent to a right angle and upper arms at right angles to trunk. The partner then stands astride the boy on the floor, facing head, and places toes just outside elbows of the boy on the floor. The boys then interlock grasps, with the boy on the floor having the reverse grasp. With the standing partner standing fully erect, or leaning slightly backward, the boy on the floor then pulls himself up with body straight and rigid from heels to shoulders, until his chest makes firm contact with the inside of the standing partner's thighs. He repeats as many times as possible. When the boy underneath returns to the floor, only heels and shoulders should touch.

42. *Floor Push-ups or Dips.*—This may be done in at least seven ways. (For form of executing this exercise see page 246.)

a. Number of push-ups without regard to time
b. Number of push-ups in ten seconds

c. Number of push-ups in twenty seconds.
d. Number of push-ups in thirty seconds.
e. Number of push-ups in the following manner:
Push up rapidly so that at the end of the movement hands leave the floor and are clapped in front of chest and again placed on the floor before the second push-up is begun.
f. Same as in *e*, except in addition to clapping hands in front of chest, also jump the feet from the floor and clap them together in the air before again alighting in the push-up position.
g. One Arm Push-up.—Rest on both feet (somewhat spread) and on one hand. Trunk is turned somewhat away from hand resting on floor. Then do push-ups with one hand.

43. *Sit-ups.*—These may be done in five ways. (For form and method of execution see page 248.)

a. Total number of sit-ups without regard to time
b. Total number of sit-ups in one minute
c. Total number of sit-ups in two minutes
d. Total number of sit-ups in three minutes
e. Sit-ups with barbell held behind shoulders
Lie on the floor, with partner holding feet down. Place a barbell of appropriate weight under neck, and hold it with both hands (reverse grasp) on either side of shoulder, firmly against the base of neck. Then attempt to sit up (straight). The competition is to see how much weight can be raised in this manner. Begin with only the bar of a barbell, and add weights of five to ten pounds at a time. Competitors, who have practiced the event, may start with any weight which they feel competent to raise.

44. *Thigh Curls.*—Hang from horizontal bar with ordinary grasp with knees completely straight. Raise feet to bar so that insteps touch bar and return to the hang as many times as possible. The upward motion may not be started with a swing, but must start from a dead hang.

45. *Back Lifts.*—This may be done in two ways: (a) Without regard to time, (b) and the total number which can be done in two minutes. The boys are grouped in three's according to height. One boy lies face downward on the floor and clasps hands behind head, the second boy holds his feet down. The third boy lies face downward on the floor in line with and facing the first boy. The third boy places one elbow on the floor in front of him with forearm vertical and fist clenched with top of fist parallel to the floor. The fist should be against his nose and the top level with his eyes. In this position his forearms should be about six inches from the head of the first boy. The first boy, with feet held, now raises head and trunk from the floor until eyes are level with those of the third boy and then returns to the prone position. He continues this movement as many times as possible. The third boy counts one for every time he sees the eyes of the first boy.

46. *Squat Jump.*—For form and method of execution, see page 247.) Competition is the number of squat jumps that can be accomplished without regard to time.

47. *Full Squats with Weight behind Shoulders.*—Hold a barbell weighing half of own weight to within the nearest five pounds, (for example, a one-hundred-forty-pound boy would use a seventy-pound barbell.) Place the barbell on the back of shoulders and hold with hands. Stand with feet apart about shoulder width, with toes turned slightly outward. Then squat down, keeping feet flat on the floor, and repeat as many times as possible.

48. *Jump Stick.*—Hold a wand, walking stick, or other small straight piece of wood, in fingers of both hands. Jump upward, swing stick under feet, and immediately jump upward, again, swinging the stick back again. Repeat this performance as many times as possible. The best way of

accomplishing this is to continue bringing feet as high as possible on each jump, and to thrust the stick as low as possible with each swing. The jump does not need to be high.

49. *Pike Jump.*—Jump upward and with knees straight, swing legs forward; and reaching forward with hands, touch toes. Repeat this as many times as possible.

50. *Squat Thrusts.*—For form of execution, see page 250. This event may be done in three ways:

a. Number of squat thrusts in twenty seconds. In this event the number of squat thrusts should be counted in full movements and quarters of a movement.

b. The number of squat thrusts in one minute. In this event only the full number completed is counted.

c. Number of squat thrusts in two minutes.

51. *Rope Skipping.*—

a. Number of front crosses (see page 84) that can be done successfully

b. Number of back crosses that can be done successfully

c. Number of front doubles (see page 84) that can be executed successfully

d. Number of back doubles that can be executed successfully

52. *Double Heel Clicks.*—Jump upward and click heels together twice and land with feet apart. Do this as many times in succession as possible without pausing in between movements.

CHAPTER 20

# TRACK AND FIELD

*Track and Field Program*

Track and field contests provide an opportunity for walking, running, hopping, and throwing activities. The following contests are possible in high schools:

Walking: 100 yards to one mile

Hopping: 25 to 100 yards

Sprinting: 50, 100, and 220 yards

Hurdles: 100 yards, low hurdles (30 inches); 200 yards, low hurdles (30 inches); 60 yards, high hurdles (39 inches); 120 yards, high hurdles (39 inches).

Middle distance running: 330, 440, 660, and 880 yards

Distance running: 1 mile and cross country running

Weight throwing: Shot put: 8 pounds (junior high school), 12 pounds (senior high school)

Discus throw: 3 pounds, 9 ounces (senior high school)

Weight throw: 25 pounds

Medicine ball throw

Baseball throw

Jumping: Standing broad; running broad; three standing broad; running high; running hop, step, and jump

Vaulting: pole vault for height

Relays: Walking, hopping, sprinting, hurdling, middle distance running, weight throwing, and jumping by progression (see also Chapter 22)

*Suggestions for Sprinting*

The starting commands for sprinters are: "Starters, ready" (interval of 5 seconds), "Get on your marks" (interval of 10 to 12 seconds), "Get set" (interval of 1.4 to 1.6 seconds), "GUN SHOT" or "GO."

For a contestant five feet and ten inches tall, the toe of the front foot is placed sixteen inches from the starting line and the toe of the back foot twenty-six inches from the starting line. Breathing is normal until the command "Get set" is given. At the command "Get set" the breath is held until the gun is fired. After the command "Get set" is given, the contestant has four points of contact with the ground, that is both hands and both feet.

Upon hearing the pistol report, or "GO," the contestant exerts a drive of both legs vigorously against the starting blocks, and swings the arms energetically to maintain balance. The length of the first step is between fifteen and eighteen inches in front of the starting line. The body angle changes as the first four or five steps are taken: when the athlete is sprinting at full speed, his trunk is inclined forward about twenty-five degrees from the vertical. Breathing is through both nose and mouth. The knees are brought rather high in front, the direction of the head and eyes is forward, and contact with the ground is made with a "pawing back" motion. The foot contacts the ground directly under, or only slightly behind, the center of the body weight. The power is developed through the leg and hip thrust exerted against the ground. As the finish yard is approached, the athlete should not alter his form but should continue straight ahead with the utmost effort.

*Suggestions for Middle Distance Running*

When increasing the length of the race, the beginning athlete must learn to run in a relaxed fashion in order to have enough energy with which to complete the race. In distance running he should take shorter strides than in sprinting. In middle distance running, as in sprinting, there should be a high carriage of the heel after the completion of a vigorous push-off. If the heel is carried high when it is brought forward, there is a shortening of the radius between the hip joint and the center of the weight of the leg. This shortening of the radius enables an increase in the speed of the forward leg swing. The carriage of the trunk is slightly more erect than in sprinting and should be inclined approximately fifteen degrees forward from the upright position. The push-off of the leg is less vigorous than that in sprinting.

In middle distance running the heel may gradually sink until it touches the ground, whereas in sprinting the heel may sink but not touch the ground. Breathing is through both mouth and nose. The arm action is vigorous and helps to maintain the body balance as it does in sprinting. A beginning runner may become accustomed to training for middle distance running by running one hundred yards at nine-tenths effort, resting one minute, and then repeating the run once or twice. If this procedure is continued for two weeks, the athlete will be able to run 330 or 440 yards without pause. A beginning runner should be cautioned to retain some strength for the finish of the race.

*Suggestions for Distance Runs*

The advice presented for sprinting and for middle distance running applies likewise to long distance running. The longer the race, the more is the need for effortless form and efficiency of movement. In the distance runs the heels may be let down for the purpose of relaxing the calf and thigh muscles. Sponge rubber in the heels of the shoes helps reduce the shock. The carriage of the trunk is more erect than in either sprinting or middle distance running. The landing may be either ball-heel, flat-footed, or heel-ball. Parallel foot action permits the most efficient leg drive. In the distance races, the muscular tension is much less than in either of the shorter runs, and it is recommended that the hands be partially opened or slightly cupped. In distance running, nature takes care of the rhythm of breathing in satisfactory fashion. Even in cold weather, the mouth may be open to provide the maximum intake of air.

*Walking*

Individuals unacquainted with walking as a track and field event may think that this activity is more easily executed than running for the same distance. To the contrary, a half-mile walk, provided that the athletes are going at top effort against a stop watch, may be more fatiguing than a half-mile run. Competitive walking is known as "heel-and-toe" walking because of the rules governing the event. In running, there is a period known as the "double float" when both feet are off the ground simultaneously. A legal walk consists in maintaining contact with the ground with one foot at all times. Both when the heel contacts the ground and where the foot leaves the ground, the knee must be straight and "locked." Officiating a walking contest is an exacting task. The penalty for a violation of the rules is disqualification, and immediate removal from the track. In the past, walking contests were a part of the Olympic Games program, but have been discontinued in recent years, perhaps on account of the difficulty of officiating.

When the athlete is walking at top speed, his hips are partially swung, or rotated, to increase the distance of the stride. This movement gives rise to a body movement which looks like a "rolling along" motion. The trunk is carried erect, and the arms, which are bent at the elbows, are used more

vigorously than in the one-mile run. In the beginning, walking contests should be for a distance of no more than 220 yards. This may be increased as the athlete gains proficiency and endurance. Exercises to strengthen the legs consist of half squats, full squats, and similar movements to strengthen the attachments supporting the ankles and knees.

*Suggestions for the Standing Broad Jump*

A mat or a soft landing pit of sand is desirable for the standing broad jump. The beginning jumper stands with the feet fairly close together and with the toes pointed straight ahead. He then takes two or three preliminary arm swings, bending the knees as the arms swing backward. At the end of the last preliminary swing, the athlete executes a vigorous drive at an angle of forty-five degrees by straightening the legs and hips, completing a rock-up on the toes and swinging both arms vigorously forward. The knees are then lifted as though jumping over a hurdle. Just before the feet touch the ground, the arms are swung vigorously backward in order that the action of the backward arm swing may increase the motion forward. After the athlete lands, his arms swing loosely forward in order to maintain the balance of the body and to retain the distance gained. The standing broad jump is a good drill for any event requiring spring, such as the high jump, the running broad jump, the javelin throw, and the shot put. This event is satisfactory at the lower age levels. The standing broad jumps lend themselves to relay competitions between two teams. The first competitor of Team A takes his jump, and his heel mark is recorded by a line on the ground. Parallel to him the first competitor of Team B jumps, and his heel mark is likewise recorded. The second competitors of Team A and Team B then assume their positions, with their heels touching the lines previously marked. This procedure is repeated until all the members of Team A and Team B have jumped.

Group competition may be arranged in which the members of Team A and Team B face each other at a distance of twelve feet apart. The first jumper of Team A takes his trial. The first jumper of Team B, facing the opposite direction, then takes a position at the mark made by his competitor's heel, and takes his trial. The contest continues with the jumping going back and forth until the last member of Team B has completed his jump. The winner is readily determined by the mark made by the last competitor.

*Three Standing Broad Jumps*

This jump is done on mats or on the runway for the running broad jump. The first two jumps are executed on the runway, and the last jump is into the pit. The take-off is like that of the standing broad jump. The jump is not as far as in the single jump, and the jumper "lands running," that is, with both feet pawing backward to increase the speed of the jump. The arms are swung as in the single standing jump, and are swung back before the athlete alights. The arms then swing forward hard, and the second jump is taken without pause. The third jump is like the second, except that it is for a maximum distance.

*The Running High Jump*

A recommended form for beginning jumpers is the so-called Western form in which the jumper clears the bar with a layout in which the leg and trunk are in a straight line. The side of the jumper is to the bar. If the individual is right handed, and drives from the ground from his left foot, the approach to the bar is made from the left side at an angle of approximately forty-five degrees and from a distance of seven or eight strides. The speed of the run is important only to the extent of giving the jumper transit across the bar. A plan for beginners may consist of setting the crossbar at the height of two or three feet and insisting that the athlete land on the same foot

from which he takes off. If he drives from the ground with the left foot, he should land on the left foot. After the athlete attains proficiency, he does not need to follow this recommendation. A modification of the Western form, known as the "straddle jump," is executed in the same manner as the above, except that the belly is toward the bar rather than the side when the clearance is made. In the Western form of the jump the drive from the ground is made from the foot which is nearer the crossbar. The last stride before the jump is longer than the other strides. The free leg is swung high and permitted to reach the maximum height as the lift is made from the driving foot. If a perfect jump is executed, the jumper's weight rises directly over the ball of the jumping foot. There should be a lean neither to the left nor to the right. Upon the completion of the drive from the take-off foot, which includes an extension of the jumping leg and a rock-up on the toes, the take-off foot is quickly snapped up and under the body to permit the layout. In the next position, the jumper turns his face toward the ground, and may alight on either the hands and feet or in a horizontal position in the pit.

*Running Broad Jump*

The standing broad jumps are indicated as a preliminary exercise to the techniques required in the running broad jump. The two most important qualifications are speed and lift. Considerable time should be spent in improving the sprinting speed.

In contests where a take-off board four feet by eight inches is utilized, the accuracy in striking the take-off board is important. Proficiency in striking the check-marks may be gained by practicing on a cinder track which is brushed so that foot-prints will be readily visible. The broad jumper using the two-four-eight stride plan takes two strides at ½ speed, four strides at ¾ speed, and eight strides at 95/100 speed. After repetition until consistency is achieved, the jumper can transfer these fixed marks to the broad jump runway. For mass competition the best jumps of each member, who is allowed three trials, are summed for the score of the team.

*Shot Put*

The eight-pound shot is utilized for individuals up to fourteen years of age, and the twelve-pound shot for those from fourteen to eighteen years of age. The shot is held with its center of gravity over the junction of the fingers and palm. The thumb and little finger provide lateral support whereas most of the propulsion is from the base of the remaining fingers. The shot is held slightly above the shoulder and moderately close to the right ear. In the beginning of practice the athlete should stand with his right foot in the center of a seven-foot circle, his weight resting on the right foot, the trunk erect, the right knee slightly bent, the left side toward the intended direction of the throw, and the left foot is to the left side and about eight inches to the rear. The left arm should be sideward. The athlete should drill on the delivery of the shot which consists of: (1) straightening of the right leg, (2) a quick twist of the trunk to the left, (3) a forceful push of the right arm upward and forward, (4) a wrist snap and finger flip, (5) a forceful swing of the left elbow to the left side, and (6) a pushoff from the right foot. Movements *5* and *6* occur simultaneously with the wrist snap.

The next item of instruction consists of adding the hop or shift. In this case the athlete starts with the right foot at the back of the circle, and after one or two preliminary swings of the left leg, makes a low hop across the circle for the purpose of gaining momentum. The right foot alights before the left, and as the left comes down, the body rocks forward about three feet as the legs prepare to spring. Without pause he adds to the delivery the activities described above.

If a regulation shot is not available, any type of weight may be utilized for putting. Competition between groups may be either on the basis of (1) total score of the sums of the one best put, (2) continuous putting wherein the second competitor stands on the spot where the first competitor's put landed and pushes it on forward in the same direction.

A variation consists of the shuttle plan in which Team A lines up facing Team B at an interval of fifty feet. After the first competitor of Team A has put the shot, the first competitor of Team B stands with his foot on the mark made by the shot and "puts" it back.

*Twenty-Five Pound Weight Throw*

The twenty-five-pound weight throw for distance is an event suitable for boys who are slightly above average in weight and height. A twenty-five-pound weight may consist of a leaden ball attached to a triangular hand hold by means of a figure eight chain link. A variation consists of a ball of concrete in which is imbedded a chain approximately twelve inches long, and through the end of the chain is a barhandle approximately the size of a carpenter's hammer handle. In either case twenty-five pounds is the overall weight.

The instructional points in throwing the twenty-five-pound weight for distance are: (1) hand hold, (2) initial stance, (3) preliminary swing, (4) pivot and turn, and (5) release.

Ordinarily the weight is thrown from a circle seven feet in diameter, but as a substitute, a restraining line may be utilized when the circle is omitted. In either case the effort is considered a foul throw if the competitor steps either outside the circle or beyond the restraining line.

In executing the throw, the contestant stands with his back to the direction of the throw and grasps the handle with the palms down. The feet are placed at the back of the circle and are approximately twenty inches apart, with the body weight equally distributed on each foot. The trunk is erect.

The throw is frequently started by the boys swinging the weight back between the legs (to start it swinging). When the weight again swings out forward, it is swung in a big circle down past the left thigh and up again, circumscribing a circle diagonally to the rear and to the left. Large, strong boys should take a preliminary swing, but smaller boys may go into the turn directly. As the weight swings to the left and backward, the boy pivots on his left foot, and makes a full turn, placing his right foot on the ground about eighteen inches from the front of the circle (a step of about four or five feet), directly behind the original position of the same foot. During this pivot, the weight is swinging in a complete circle. As the left foot is placed on the ground, the boy (at that time with his back to the direction of the throw) throws the weight backward past his left shoulder, releasing it practically at the side of the shoulder and at arm's length and at the angle of forty-five degrees. He throws with as much force as possible. Measurement is made in a manner similar to that in the shot put. Competition between squads or teams may be arranged in the twenty-five pound weight throw in a manner similar to that for the shot put.

*Discus Throw*

The three-pound nine-ounce (for use in senior high schools) discus is thrown from a circle with a diameter of 8 feet 2½ inches. Improvements have been made in the construction of the missile so that there is less danger connected with its use than there was formerly.

The discus may be composed of all rubber, or have a metal center and a rubber rim, or of a wooden center with a steel rim. The all metal discus, which is not frequently used, is made of material similar to "duraluminum."

The progressive steps in throwing the discus involve: (1) the hand hold, (2) the initial stance, (3) the preliminary swings, (4) the pivot (or jump if the jump rotation form is used), (5) the delivery, (6) the release, and (7) the recovery.

In holding the discus, the end joints of the second, third, fourth, and fifth fingers touch the rim, and the fingers are somewhat spread. The little finger and thumb are utilized chiefly to provide lateral support. The grasp is palm down. The center of the discus is just in front of the center of the palm. The competitor should face to the rear when assuming his initial stance. For the purpose of loosening up, he takes two or three preliminary swings. When the preliminary swing has been completed he drives from the right foot (the feet may be spaced eighteen to twenty-two inches apart at the rear of the circle) and he attempts to generate momentum. He should pivot on the ball of the left foot without first stepping backward. His objective is to keep the discus away from the body with the trunk well in advance of the arm holding the discus. With one full turn† he traverses the circle so that the left foot is within eight to ten inches and about twelve inches to the left of the front edge. The next action is the most important, namely the delivery, in which the legs, trunk, and arms are simultaneously brought into play to whip the missile out at an angle of approximately thirty degrees. The discus is given a clockwise spin as it leaves the hand of a right-handed thrower. The discus leaves the hand at shoulder height and about opposite the ear. The right foot should remain on the ground until the discus has left the hand when it may be brought forward rapidly to help maintain balance and thus prevent fouling. Measurement is made from the spot where the discus first strikes the ground to the nearest edge of the circle.

*Medicine Ball Throw*

The large medicine ball may take the place of the eight-pound shot. In this case the ball is delivered with a shove from the standing position. A variation may be made by the boy's toeing the line, throwing the ball forward from between the legs, and jumping forward with the throw. In a third variation the contestant heels the line, bends forward with the ball between his legs, straightens up and throws it backward over his head as far as possible. In this throw he may not step backward across the line. If medicine balls are not available, heavy stones may be used out of doors.

*Baseball Throw*

An outdoor baseball or a softball may be used. The throw may be made (a) from behind a line, as in the javelin throw, (b) from a pitcher's plate, or (3) from a seven-foot circle. Individual and mass competition may be arranged as for the broad jump and shot put.

*Hurdles*

For beginning hurdlers a lath may be placed on upright sticks two feet high and thirty feet apart. The beginner should start at a point fifteen yards from the first lath and in an aggressive manner simply step the barrier which should cause no discomfort if displaced. As proficiency is gained, the height of the lath from the ground may be increased until the regulation low hurdle may be installed. Diagrams for stride work between hurdles are available in various texts. A contest for intramural athletics may consist of running over three hurdles with no restriction on the distance between hurdles except that there is a fixed distance of fifteen yards from the start to the first hurdle.

† Variation.—When the athlete uses the jump rotation rather than the pivot rotation form, he drives vigorously from the ground with both feet and turns the body in the air so that he lands in approximately the same position as with the pivot form. This style of throw has the claimed advantage of developing greater speed in the body turn.

Aside from competition between individuals, the low hurdles and the high hurdles offer a fine opportunity for intramural or intergroup competition. For this purpose four lanes of hurdles may be set up. Team A runs over two lanes, and Team B runs over the other two lanes.

Half of Team A starts at the one end, and the other half at the other end. After the first runner of Team A has completed his lap, the second runner of Team A at the opposite end takes over. This event, termed the shuttle hurdle relay, is used in places varying from the small schools to the large relay carnivals.

*Pole Vault*

The pole vault for height may be conducted on the same basis as that of the running high jump. Briefly, the technique of the pole vaulter consists of grasping the pole with the upper hand, the palm up, and with the lower hand, the palm down, with the hands about twenty inches apart. The run is approximately the same as that for the broad jump, two-four-and-eight strides. As the competitor approaches the pole plant box, the point of the pole is lowered and the hands shifted, lower to upper. The hands are then directly over the head, and the pole forms the hypotenuse of a right triangle. The following movements follow immediately: (1) drive off the ground with the left foot, (2) swing up beside the pole (the rotation is around the shoulders and not the hands), (3) vigorously bend at the hips and knees so that the feet are high, (4) quickly pull up, turning the body to face the runway, and push down vigorously.

The landing pit of sawdust, spaded loam, or shavings is essential. The vaulting pole should be of a strength commensurate with the weight of the vaulter, so that the bend of the pole will be timed to add to the upward throw of the pull-up and push-up.

*Hop, Step, and Jump*

Preliminary drills in the standing broad jump and running broad jump apply to this event. The contestant takes off from a board four feet by eight inches. If he is right-handed, and has greater strength in his left leg than in his right, he will start the hop with the *right* foot. The hop should not be unduly long. A championship jump of fifty-one feet was measured and found to include an eighteen-foot hop, a twelve-foot step, and a twenty-one-foot jump. Naturally, the landing for the hop is made on the right foot. While in the air after leaving the ground in the hop, the jumper executes a scissors movement so that the leg is in readiness for a vigorous step. Both the hop and the step are completed with a "running landing." The jump is made from the left foot and the instructions given for the running broad jump apply to this phase of the hop, step, and jump.

CHAPTER 21

# GAMES

Games form an important part of the physical education program. The skills involved in these games should be taught to small groups within the class. There should be a reasonable degree of mastery if the game is to be played satisfactorily. The main purposes of games are to: (1) develop organic strength and endurance, (2) multiply opportunities for student initiative and leadership, (3) provide fun and recreation, (4) adapt activities to the abilities and strengths of the participants, (5) provide varied social situations, (6) teach skills so that other purposes may be realized, (7) provide out-of-door activity, and (8) develop character by the development of desirable attitudes regarding loyalty, courtesy, self-control, friendliness, courage, obedience to officials, and habits of fair play.

## GAMES AND ACTIVITIES OF LOW ORGANIZATION

*Characteristics.*—(1) Short unit (may stop at any time), (2) simple rules, (3) skills not specialized, (4) easily officiated (by students), (5) little equipment needed, (6) adaptation to large or small spaces.

*Organization.*—There should be: (1) Squads or teams of about equal abilities, (2) student leader for each squad or team working under instructor, (3) student captain for each squad activity.

*Activities.*—(1) According to type of play: (a) continuous, (b) tag, (c) individual, (d) team, and (e) elimination. (2) According to functional activity: (a) running, (b) throwing, (c) lifting, (d) jumping, (e) climbing, and (f) combative.

Games which involve kicking elements have a strong attraction. Small boys may often be seen walking down the street kicking a tin can or rock ahead of them. This desire to use the feet in kicking objects is carried over into many games and adds an element that makes kicking games very popular. It is also natural to want to kick the object at something. Passing or throwing elements are combined with kicking elements in some games, which thus require additional skills. Most of these games involve dodging and running.

## *Games and Sports of High Organization*

Sports and games of high organization have rather complicated rules, much technique, definite teams plays, and require a definite number of players. Much time is required to teach the rules and the skills of these games. Many of them are included in the interscholastic program of athletics and in intramural sports. Such activities are a part of, and furnish a stimulus to, our scheme of physical education.

The purpose of this type of activity is to give an outlet to natural play and competitive interests; to teach courage, self-reliance, etc.; to teach fundamentals of good citizenship—loyalty, fairness, sportsmanship, coöperation, etc.; and to develop strength and endurance.

## *Procedure to Follow in Teaching a New Game*

1. Have the equipment ready, the court marked, etc.
2. Give the name of the game
3. Explain the object of the game
4. Tell how the object is reached through offensive and defensive play
5. Explain a few of the simpler rules, and ask for questions

6. Arrange the players in their positions and begin the game immediately, allowing it to proceed for a time
7. Stop the game when it seems necessary to explain a technique or a rule, and provide for discussion of the play
8. Continue the play
9. Stop and teach a skill or the fundamental most lacking in the play
10. Continue the play, adding skills or rules as they seem necessary

*Teaching Hints*

1. Teach with dignity, enthusiasm, and sincerity
2. Have a plan for teaching the game, but remain flexible
3. Hold the group to the rules
4. Be direct, positive, and definite in giving directions
5. Know the game—all of its rules, techniques of offense and defense and the fundamentals
6. Capture the attention with the first thing you do and then set the pace, the tone, and the standard for the whole period
7. Strive for 100 percent participation
8. Have external discipline if the boys lack self-discipline, but remain unsatisfied until self-discipline is acquired by them
9. Always be in a good place to supervise the activity
10. Do not over-direct the game, for this ruins enthusiasm
11. Teach the boys to respond to a whistle
12. Teach skills or fundamentals
13. Cultivate a pleasant voice
14. Study boys in their responses and attitudes
15. Teach the interesting and less difficult things first
16. Have a proper introduction to the game
17. Do not overlook emotional aspects, such as fear, jealousy, rivalry, and anger
18. Remember that the highest goal of play is character development

*Criteria for Use in Evaluating Games and the Methods Used in Teaching Them*

1. Do the boys understand what they are supposed to do in the games? Do they know and follow the rules?
2. Are they engaging whole-heartedly? Are they having a good time? Do they seem to want to continue the game?
3. Does each boy appear to have a sense of belonging to the group?
4. Are the timid boys drawn into the play?
5. Are the boys making the necessary social adjustments required of them?
6. Is the teacher securing reasonable discipline?
7. Is there respect for leadership? What happens when the whistle is blown?
8. Is the game properly chosen with respect to the age level of the boys, the playing space, the season, the clothing worn, and the interests of the group?
9. Is there encouragement of the timid, dull, and weak boys?
10. Does the teacher enforce the rules which he has outlined?
11. Is there effective teaching of the skills needed?
12. Does the teacher allow the game to proceed under its own momentum, or does he break it up for reasons other than to correct technique or to enforce rules?
13. Does the teacher "over-direct" the play?

The games listed below are not divided into games of high or low organization, but are classified into natural groups. Games that are on the usual varsity program, such as football and basketball, or very commonly played and widely known games, such as softball, are not described.

*Broncho Tag*

Divide the boys into groups of even numbers, about twelve in each group. Each group plays a separate game. The boys pair off and stand approximately eight to ten feet apart, roughly forming a circle, with one boy in front, and with one behind who grasps the one in the front of him around the waist. The boys of one pair are not thus joined, but one is the chaser and the other attempts to escape. "It" in this game is the one doing the chasing. The one attempting to escape tries to get in front of one of the pairs, and the front boy of the pair tries to aid him by grabbing him around the waist as he goes past. If he succeeds in getting in front of a pair, the third boy, or rear boy, now becomes the individual chased and attempts to get in front of some other pair. In each case, the front boy of each pair attempts to aid the boy being pursued by grabbing him. The rear boy of a pair attempts to prevent this by swinging the front boy around out of the way of the boy being pursued. The game itself becomes a series of struggles between the rear and the front boy of each pair as well as a running match for the individuals doing the pursuing and fleeing.

*Line Wrestle*

Place the teams on the opposite sides of a line. The object is to pull the opponents completely across the line. Several boys may gang up on one boy. Players pulled across must work against their former teammates. Players should stay within one foot of the center line. Any number may play.

*Line Rush*

This game is played on an open field, which is marked with two lines 100 feet apart and about 100 feet in length.

One team lines up behind one goal line, the other in the midfield. On the starting signal, the team standing behind the goal line seeks to cross to the other goal within one minute, while the team in the center seeks to prevent it from doing so by catching and holding runners. Count the number of boys crossing the far goal at the end of a minute. The teams then change. After each team has had three to five tries, the scores are added and the winner declared. A boy scores when any part of him is across the goal line. Any number may play.

The officials needed are two referees, two scorers, and one timekeeper.

*Milling the Man*

About twelve boys form a circle about ten feet in diameter. They are seated and face in. The boy who is "It" is inside the circle. He stiffens his body, with his arms close to his sides. He falls toward a player, who must push him away so that he will not fall to the ground or upon the seated player. "It" is thus pushed back and forth in the ring until someone fails to keep him upright. The boy who thus fails is penalized by exchanging places with the previous "It."

*Tug-of-War*

This game is conducted on any open field, which is marked with two lines five yards apart. A rope (150 feet long, 1½ inches in diameter) is placed across these lines with the midpoint half way between them. A two-inch band of adhesive tape is placed at the midpoint of the rope. The number of participants may be increased by the use of a longer rope.

The two teams grasp the rope, one team on either side of the middle. At the signal, the teams pull. The team which first pulls the tape mark on the rope past its line is the winner. Three out of five pulls constitute a contest.

*Battle Ball*

This is a game conducted in the gymnasium. There are two teams of any number of players. Many balls of all kinds, from small rubber balls to basketballs, may be used. The balls should be only partially inflated.

The balls are placed in a line in the center of the gymnasium, and the respective teams are on each end of the court. The referee blows the whistle, and the players rush forward to get a ball and then back again to the wall so they will be eligible to hit an opposing player (applies only to opening whistle). After the game is underway, any team member may throw at the opposing team wherever he picks a ball up on his own side. The center line in the gymnasium is the division line. No one may go across this line to attempt to hit an opponent. Any individual from either side may attempt to cross the center line, steal a ball, and get back to his side where he may throw. Anyone hit by a ball in the air is "dead" and falls to the floor and may not assist either side. (Catching the ball is not permitted.)

When the game begins to drag because the teams are playing cautiously, the referee yells, "Over the top," and both teams are allowed to cross into the enemies' territory to attempt a hit. The team with the most boys standing at the end of a set time wins.

Being hit by a bouncing ball does not count as a hit, and a bouncing ball may be caught. No player may have more than one ball in his hands at a time. (See Fig. 85)

*Battle Ball Diagram*

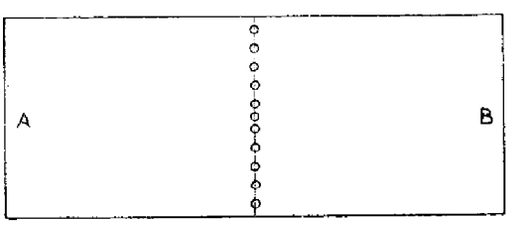



Fig. 85. Battle Ball

*Starting Formation*

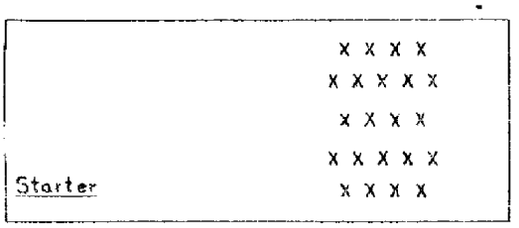



Fig. 86. Boomerang

*Boomerang*

Any number of boys, with one starter, may play. The game may be played outdoors or in a gymnasium. The equipment required is a vollyball, a soccerball, or basketball.

Boomerang is a fast game. It is begun by the starter (at one end of the gymnasium) who kicks the ball at his targets out on the rest of the floor (See Fig. 86) after which he joins the others. The players on the floor may move about to any position and must dodge the ball as it comes at them on the fly. They must wait until after it either hits the floor or someone else before they may kick it. Players drop out as they are hit, and the last one up is declared the winner.

*Dodgeball*

A circle thirty to forty feet in diameter (or a rectangular area twenty by thirty feet) may be used. One team goes inside the circle; the other team surrounds the circle. The members of the team outside have a basketball or soccerball. At the signal, they throw the ball at the opponents, trying to hit them. The play continues until all the "inside" boys have been put out. The time required to accomplish this result is noted. Then the teams reverse the procedure. The team wins which puts out all the opponents in the shortest time. For the best team play, the outside team should frequently feint to throw to get an opponent off balance and then pass to a nearer teammate who can then score the hit. If the ball stays

inside the area, an outside player may go in and retrieve it, but he must be outside the lines before action starts again.

A variation of dodgeball may also be played by playing by set time periods—two or three minutes. The score is than recorded by counting a point every time an opponent is hit. The team scoring the most hits within the given time limit is the winner. An informal variation is to place half of the team inside. When players are hit, they join the team outside, and the boy remaining to the last is the champion. When he has been hit, the teams reverse positions, and the play proceeds as before.

*Hand Hockey*

This is an indoor game for two teams of ten to twelve players each. The equipment needed is a basketball or a soccerball.

The players are stationed around a six-foot restraining circle in the center of the gymnasium, and on the command "Go" the players rush for the ball and attempt to advance the ball by the hand like passing the puck toward the goal in ice hockey. The ball must not be picked up, kicked, or caught, but may be rolled from one player to another.

The goal is that portion of the end line between the free throw lanes. Two goal guards are stationed there by each team. If the ball is out of bounds, over the end line, bring it to the side of the line opposite the free throw line, and roll it into the court at right angles to the side line. If the ball is out of bounds over the side line, roll it into the court from the spot where it went out of bounds. The ball must cross the goal while it is in contact with the floor. (See Fig. 87)

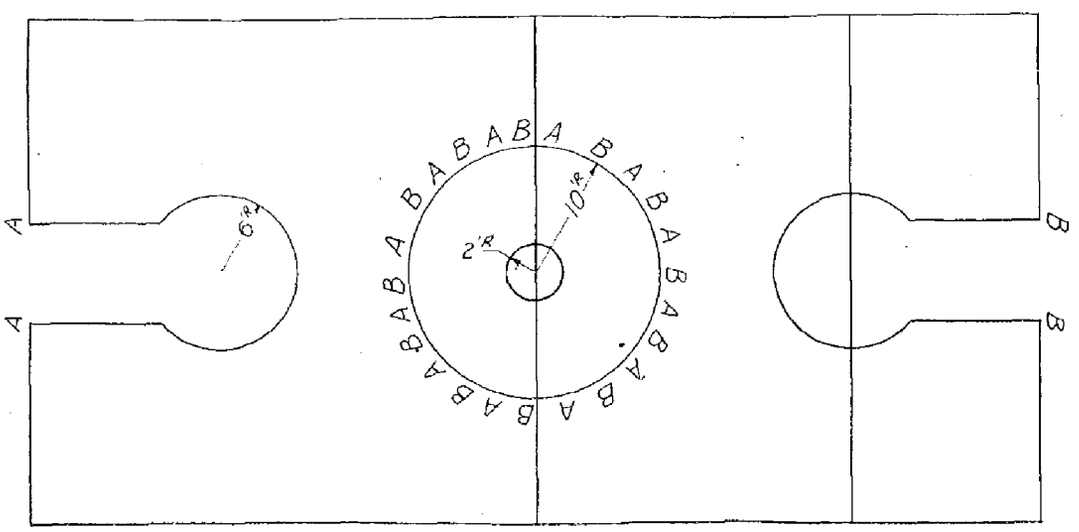



Fig. 87. Hand Hockey

*Ring-Toss Golf*

This is an outdoor game for any number of foursomes up to nine. The equipment needed is nine wooden stakes and enough rope rings for all who want to play (rings may be made out of ¾-inch rope and then fastened into 8-inch rings with tape).

A "Foursome" starts at "Tee" number one and attempts to ring the stake in the least number of strokes possible. The score is kept for each hole until the nine holes have been completed. The underhand toss, as in horseshoes, is the more accurate and better to use in most cases. If the player rings the stake, he has a hole in one. If he misses the stake but lands within one foot of it (a circle of one-foot radius is drawn around the stake) he may give himself a score of two. If he lands outside this circle,

he must carry the ring to the outer circle (another circle with a six-foot radius) in the direction from which he has thrown the ring, and make his next shot from there. In other words, the space between the two circles is "out of bounds," and the ring may be placed outside the outer circle anywhere on the line of flight.

The stakes should be placed at different angles to add to the interest and difficulty of the game. Bunkers, trees, benches, or almost anything may be used for hazards. "Dog-legs" around trees add interest to the game, and penalty strokes should be given for landing in the wrong fairways. This is an excellent noon hour game.

*Water Baseball*

This game is played in a swimming pool of any size by the same number of players as in baseball. The equipment needed is an old rubber volleyball (Voit), bases each eighteen by forty inches, and a bat. (Old surf boards or flutter boards may be used for bases).

The players locate themselves as in baseball, with the batter at the shallow end of the pool. Softball rules apply, except for the fact that the pitcher may throw overhand and the runner may be put out by throwing the ball at him. The runner may duck under the water to avoid being hit by a batted or thrown ball, and he may not leave his base until a ball has been hit and after he has left a base he may not go back.

With larger boys or better conditioned boys the home plate and the bases may be shifted so that the players must swim more in deeper water.

*Gym Hockey*

This game is played on the gymnasium floor. The *goalie,* who is restricted to the goalie's area, may use a stick (both hands), his feet, or his hands to prevent a goal; he may not sit, kneel, or lie down to prevent a goal. If he throws the puck out, it must go sideward. (No other player may infringe on the goalie's area.) The *center* takes part in the opening face-off. There may be two *forward* and two *defense* boys. The equipment needed is a deck-tennis ring for the puck, and gymnasium wands for the passing or dribbling.

The object of the game is to move the puck by the use of the gymnasium wands for passing or dribbling (advancing puck by placing end of stick in the center of puck and moving with it) down the floor, to shoot for the goal, and to prevent the opposing team from doing likewise.

The boundaries may be formed by the end and side lines of the basketball floor. It is preferable to use the gymnasium walls, with no out of bounds. The goalie's area is bounded by free throw lane lines, end lines, and the dotted arc of the free throw circle. The goals are two jump standards placed at the intersections of the free throw lane lines and the end line. A rope is used to mark the three foot top of the goal. The center circles are the same as in basketball—used for offside penalty. For the offside lines, the basketball forty-foot lines are reversed (Team A's offside line is the one nearest to the goal at which Team A is shooting.)

On the actual shot a player may use two hands on the stick, but at all other times a player may only use one hand on the stick (goalie excepted). A successful shot through the goal must go between the goal posts and under the rope. At the instant the goal is scored the stick may not be in a contact with the puck. (Penalty—goalie gets a free pass-out.) A goal from the field counts two points, and a successful penalty shot counts one point.

The game is played in three four-minute periods, with a two-minute intermission.

The fouls and penalties include: (1) Infringement on goalie's area by any player at either end. Penalty: offended goalie gets a free pass-out. (2) Off-

side: if any player dribbles across his offside line, any other player of his team who is ahead of the line is offside (refers only to the dribble and not to the pass). Penalty: any player of the offended team (except goalie) takes the puck at the center circle for a free pass-out. (3) Two hands: any player using two hands on the stick at any time (except when shooting). Penalty: same as for offside.

Personal fouls include tripping, holding, shoving, striking, or unnecessary roughness. Penalty: the offended player gets a penalty shot.

*Team Bar Wrestle*

The field should be a minimum of seventy-five yards wide and forty yards long. The markings consist of a line, in the midfield, extending the width of the field. Note that the field is wider than it is long. The game may be played crosswise of a football field. The equipment needed is one strong wooden bar (about two inches in diameter and three feet in length) for each two eleven-man teams.

There are eleven boys on a team. A side may consist of as many teams as the field will hold. The length of the game is ten minutes. The object of the game is for a team to get the bar on its own side of the center line by tugging, pushing, wrestling, carrying, etc., and to keep it there for ten minutes. The players may use any fair means of getting the bar on their side and keeping it there. Striking or using punishing holds (e.g., twisting arms or legs of opponents) are prohibited.

The captains line up, standing over the center line, each with a two-handed grasp on the bar. Each team is lined up behind the goal line and behind its captain. On the first whistle, the captains wrestle to get the stick as far on their side of the center line as possible. On the second whistle twenty seconds after the first, the teams come to the aid of their captains, and the struggle continues for ten minutes.

When the final whistle is blown, the side with the greatest number of bars on its side of the line is declared the winner. If the bar is on or over the center line when the final gun goes off, the team having the greatest length of stick on its side is declared the winner. If a bar is pulled over the goal line, it counts a point, and the referee starts the play again at the center line.

Fouls consist of striking an opponent and using punishing holds. If a player strikes, he is removed from the contest. If a player holds, he is made to release the hold and completely free his opponent.

The officials needed are one referee for each two teams. The duties of the referee are to detect rule violations and protect the contestants, and to determine the winner at the end of the contest. The timer functions in accordance with the rules set forth above.

*Shuffleboard*

This game is one that is useful for physically handicapped players, and for noon-hour and general co-recreational play. The court is laid out on a floor or pavement (see figure 15, page 38).

Eight circular discs, which can be made in the school shop, are needed. They should be six inches in diameter and one inch thick. Half are painted one color and half another color. The cues may also be made in the school shops. The handles are five feet long, are fitted with a head three and a half inches wide, and curved to fit the discs.

The play may be singles or doubles. In singles, the players shoot from one end, and then shoot back from the other end. In doubles, one pair shoots from one end and the other pair from the other end. One player or side uses discs of one color. The object is to have the four discs rest in the highest scoring spaces possible. The players shoot alternately, the winner of one end shooting first at the beginning of the next end. A disc may be struck and

knocked away by an opponent, and a disc in a good spot may be protected by another disc shot in front of it. Discs lying on a line do not count: the whole disc must rest inside the space. A game is fifty points.

*Horse Shoes*

For a game of horse shoes there should be two pitchers' boxes six feet square, which should be filled with packed clay to a depth of at least six inches; this clay should be moistened to a putty-like consistency. In each box, there is a stake of iron one inch in diameter, eight inches high, and leaning one inch toward the opposite stake; the distance between the stakes is forty feet.

The horse shoes must not exceed seven and one-half inches in length, seven inches in width, and two and one-half pounds in weight. The toe or heel calks should not extend more than three-fourths of an inch. The opening between the heel calks must not exceed three and one-half inches inside measurement.

A match game consists of fifty points, and the player first scoring this number wins. The contestant pitches both shoes, one after the other. He must stand behind a line even with the stake and outside the box. If a shoe is scored as a ringer, it must encircle the stake far enough to permit a straight edge to touch the heel calks and still clear the stake. The closer shoe to the stake scores one point. If both shoes of one player are closer than the opponent's, they score two points. A ringer scores three points. A ringer and the closest shoe score four points. A double ringer scores six points and is the highest score that can be obtained. In case each contestant has a ringer the other two shoes count scores, but the ringers pitched do not count as scores. If each contestant has a double ringer, there is no score. If one contestant has two ringers and his opponent one, the pitcher of the two-ringers scores three points. If all shoes lie at an equal distance from the stake, there is no score. In informal play, frequently shoes that lean against the stake, but are not ringers, are counted as two points. This, however, is not official. If mixed doubles are played, the girls pitch from the thirty-foot line. (See Figs. 13 and 14, p. 38).

*Box Hockey*

A wooden box six feet long and three feet wide with sides ten inches high is constructed of two-inch pine. Three partitions are prepared which, with one or two cuts, fit into the box making one or two little gateways six inches square. The two end partitions are six inches from the end wall and have one gate in the middle, while the third partition is placed in the middle of the box and has two gates. The box must be well constructed, or it will be quickly pounded to pieces.

Sections of old broom sticks, pitch fork handles, or Boy Scout sticks are used for sticks. The puck is made from a one-inch section of a baseball bat.

The puck is placed on top of the middle partition. The opponents stand on either side of the box and "face off" with their sticks, as in regular hockey, tapping the bottom of the box and their opponent's stick three times in succession; after grounding the sticks the third time, each player is free to do as he wishes. Each person tries to hit the puck through the gate at the end partition to his left; should the puck fly out of the box, the referee drops it in play in whatever section of the box it was at the time it went out, and no "face off" is used here. This is a surprisingly strenuous game.

## BASKETBALL TYPE GAMES

*Golf Basketball*

This is an indoor game for boys or girls. The gymnasium floor is marked with nine numbered circles to represent the tees for golf. The circles are arranged in an arc around the basket, from one corner of the gymnasium floor to the other. As many balls are used as can be handled.

A set shot is attempted from the first "tee." If the shot is missed, two more tries are allowed. If the player does not make the basket with three shots, he loses his turn and is penalized two shots, making his score for the "hole" five. After each player has had a chance at the first hole, the players move to the second tee and shoot from there, continuing until they have completed nine holes. If enough balls are available, "foursomes" may be used and they can go on to the next holes as they either make or miss the baskets.

"Par" is determined by the ability and age level of the group. Twenty is par for an average group. Variations of Golf-Basketball—(1) Give credit for a hole-in-one, by reducing the score by one. (2) Have tees set far from the basket, allowing players to take each succeeding shot from the point of recovery, the above rules to govern otherwise.

This is a good game for noon hour play.

*Keep Away*

This is an interesting variation of basketball. The object is to see how many passes a team can make before the ball is intercepted by the other side. In the case of a foul one point is counted and the ball is also given to the opponents out of bounds. The team that first scores 100 points is the winner. The teams should be distinguished, as for example, "Skins" vs. "Shirts." Two assistants are needed in addition to the referee, one to keep the score for each team.

*Three-Man Basketball*

The equipment and playing area for this game are the same as in basketball except that the game may be played more successfully in smaller gymnasiums.

Each team attempts to score at the same basket. If Team A advances the ball to score and Team B recovers the ball from the backboard, Team B may score immediately. (In some localities it would be advisable to have Team B make a pass to a teammate after recovering the ball from the backboard, before scoring. This would slow down the scoring somewhat, yet increase the amount of passing.) After a team is scored upon, that team takes the ball out of bounds at the end of the court opposite the backboard.

The game begins with a jump at the center with the centers facing the side lines instead of the baskets. When a player is fouled, he puts the ball into play at the nearest out-of-bound spot instead of shooting the foul. If the foul is flagrant, two free throws are awarded. As soon as one team has ten points, the first quarter ends; twenty points, the half; thirty points, the third-quarter, and forty points make a game.

The recommended size of the courts is: junior high school, twenty-one to thirty-seven; high school, twenty-five to forty-two; and college, twenty-five to forty-five.

*Goal-Hi*

A gymnasium, a playground, or a backyard will serve as the court. The equipment needed is a basketball or an official goal-hi ball and a goal-hi standard (either indoor or outdoor).

Goal-hi is played by two teams of five players each, with one common basket goal. The ball is passed from one player to another, and the purpose of each team is to score as many points as possible by tossing the ball into the common basket, and at the same time prevent the other team from securing the ball or scoring. The game is very much like basketball except for the layout of the court. (See Fig. 88).

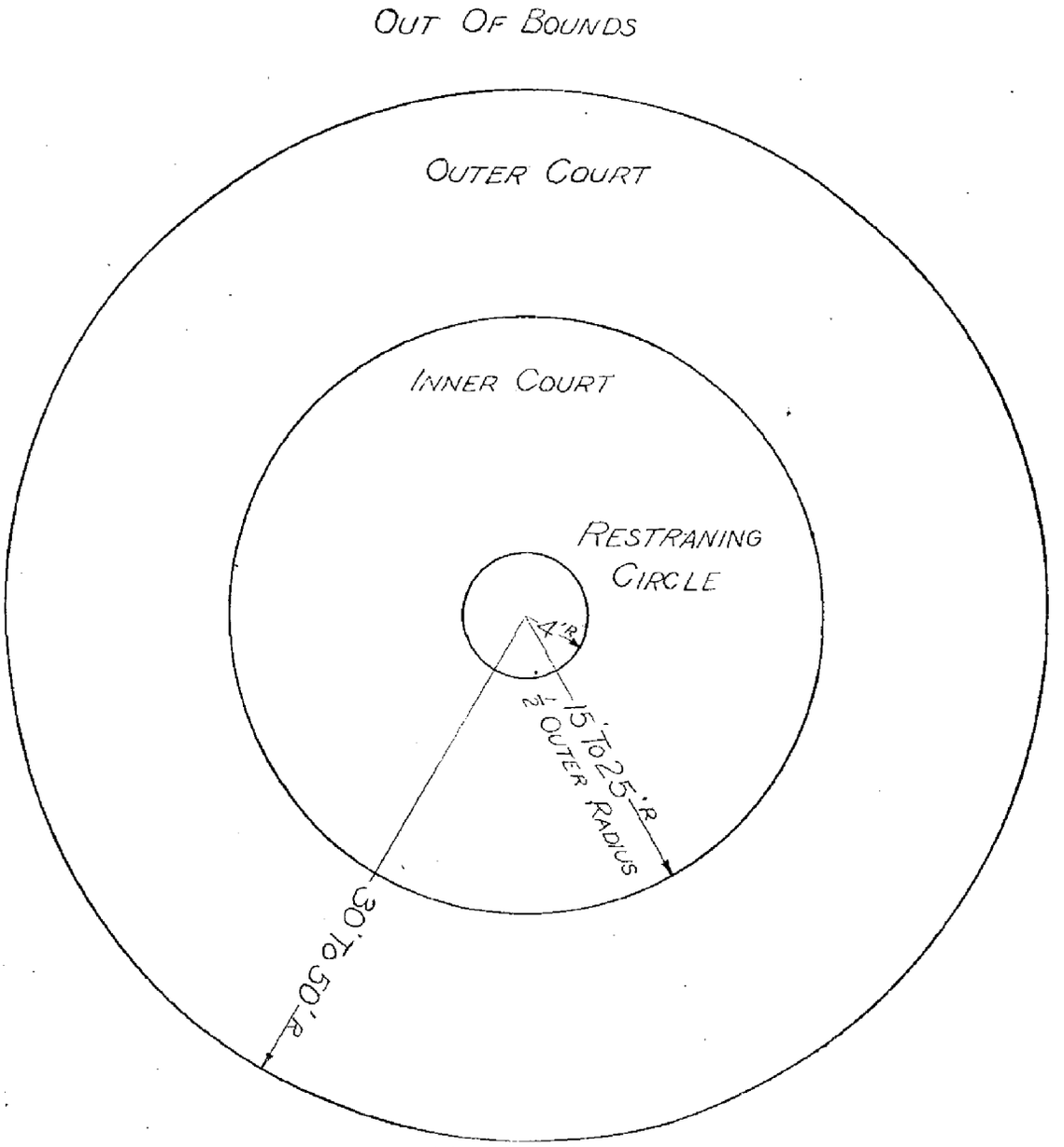



Fig. 88 Goal-Hi

Exceptions to basketball rules: (1) A field goal from within the inner court counts two points, and one from the outer courts counts three points. (If any part of player's body touches the free-throw line, it is considered as being in the inner court.) (2) The center jump takes place at the start of the game, and in all succeeding quarters just inside the free throw line, with the centers at right angles to the basket. (3) The free throw distance varies with the size of the court. It is marked by the outer boundary of the inner court and is one-half the distance of the radius for the outer court. (4) No player may enter the restraining circle. If a player has possession of the ball in this area, he is considered out of bounds. He is also out of bounds when he touches or steps outside the outer court.

Variations of goal-hi: (1) The game may be played by making use of a penalty box for a period of one minute rather than by awarding the opposing team a free throw. If a player is disqualified for unsportsmanlike conduct, and must leave the game, a substitute may take his place after one minute and thirty seconds. (2) Goal-hi may also be played as a three-court game for physically handicapped children. The court is divided into three segments, and players must remain in their designated area.

*One Goal Basketball*

In order to increase the space available for playing, four teams may play a game on one court, two teams playing one game on one-half of the court, the other teams playing in the other. The game is begun by tossing for the ball. The team winning the toss puts the ball into play out of bounds at the center of the court, and attempts to work the ball in for a score, just as in a regular basketball game when the team is trying to work the ball through a five-man defense. If the opponents obtain control of the ball, the ball must first be passed out beyond a line tangent to the free-throw circle and parallel to the goal line. After this the team may work it in for a score. In all other respects the rules of basketball govern.

*Hokey-Pokey*

This is an indoor game for two or three players on each team and two teams at each basket. There may be as many groups as there are available baskets. Enough regulation basketballs are needed to supply each group with one ball, and one basket is needed for each group.

The game is started by a free throw from the free-throw line by the player of the team winning the toss. If a basket is made, the ball goes to opponents out of bounds under the basket. If missed, the ball is in play. If a goal is made from the field, the player making it is entitled to three free throws. After the last free throw the ball is either in play or given to the opponents, depending on whether the free throw was made or missed, as in the start of the game. Basketball rules apply, and the players are their own officials.

A goal from the field counts two points; free throws count one point for each one made. The game consists of twenty-one points, and the team must go out by throwing a goal from the field and not by a free throw.

Many variations may be used to suit conditions. A double elimination tournament may be run off if six or more baskets are available. The game may be limited to fifteen points to speed up the rotation.

## FOOTBALL TYPE GAMES

*Football Keep Away* (Passing game)

This is an outdoor or indoor game for two teams of any number of players. A regulation football playing field of any size, depending on the size of the boys or on the number in each team, may be used. There are two goal lines, one at each end of the playing area.

The ball should be put into play by the designated team from its own goal and by means of a forward pass. All members of Team A must stand on or behind their own goal line until the starting signal is given, and then they may scatter to receive the pass. Team B must line up along a restraining line at least ten yards back from Team A's goal line, and remain there until a pass over the opponent's goal line is completed. This scores one point for the side. At any time during the play the ball may be intercepted and put into play in the direction of the intercepted team's goal. The team scored upon will then form a restraining line.

The pass must be lateral or forward, and not backward. The passer may run backward or to the side while looking for a receiver but must not run forward. (Violation of these rules means the loss of the ball to the opponent at the spot of violation.) An out-of-bound ball shall go to the team opposite the group that caused the ball to go out. An incomplete pass not over the goal goes to the team recovering it. Members of Team B may not approach nearer than one yard to the passer, and the passer is given plenty of time to get the pass off. Opponents may bother by waving their hands.

This game may be used in place of touch football, and is much faster. The boys should be encouraged to throw short passes and not long ones, and to attract attention by waving or clapping hands—no shouting or whistling.

*Touch Football*

This is a well standardized game in the United States. Since the rules are readily available, the game will not be described here.

*Twenty-Yard Touch Football*

There are nine players on a side instead of eleven (only five men required on line of scrimmage). The game is played on a regulation football field, with yard lines on the field drawn twenty yards apart.

Twenty-yard touch football is played with few exceptions like the no-contact touch football game. The fundamental change is the difference between necessary yards to be gained. The offensive team has the regulation four downs to make a first down which is up to the next twenty-yard marker. A team may take possession of the ball and have only two feet to go for a first down. The absence of the chain simplifies the game, and the twenty-yard lines settle without question whether a first down has been made

All players are eligible for forward passes unless the passes have gone out of bounds. Blocking may be done in the line, but no clipping is permitted. The blockers must not leave their feet. The use of the hands on the defense is restricted to the shoulders of the opponents. A touch (tackle) occurs when an opponent touches the ball carrier with both hands simultaneously between the shoulders and the hips. The ball shall be declared "dead" at the point of the touch. The *toucher* must keep his feet throughout the touch.

The penalties are fifteen yards from the spot. More teams can play at one time because of the smaller amount of supervision necessary and the reduction of players from eleven to nine on a side.

*Open Football*

This is an outdoor game for two teams of twelve to twenty players each. A football field of any size may be used. Goal posts are not necessary.

The football is put into play as in football, and touch football rules apply with the following exceptions: (1) The ball may be kicked, passed, or dropkicked at any time. (2) A player may run with the ball in any direction *not forward.* (3) There are no downs: the ball is in continuous play. (4) The opposing team may take the ball away by interception, forcing the other team out of bounds or by touching the ball carrier. Scores are made *only* by completing a forward pass over the goal line.

This is a good game on the high school level. It may be played in shortened quarters because of the continuous play and speed of the game.

*Indoor Football*

This game, which is for six to fifteen players on a side, is played with a regulation football in the gymnasium.

The winner of the toss has a choice of offense or defense (choice to be reversed at the half). All plays start at the center of the free throw line, and each team must have three backs behind the line of scrimmage. The team on offense is allowed four downs to score by (1) forward pass, (2) running, (3) drop or place kick, (4) free kick, and (5) first down. After four downs the ball goes to the opponents for them to start play at their free-throw line. A first down occurs when a ball in the possession and in control of a player has been carried or moved by a forward pass, beyond the center of the floor.

Scoring: Touchdown, 6 points; point after touchdown, one point; any completed forward pass, two points; first down, one point; completed forward pass and first down, three points; drop, place, or free kick, three points.

Forward pass rules: (1) The pass must be from any point in bounds behind the scrimmage line. Lateral passes may be attempted anywhere on the floor in bounds. (2) Several forward passes may be attempted in any series of four downs. (3) An intercepted forward pass may be advanced. Incomplete lateral or back passes shall be ruled fumbles and the ball declared dead. The play shall start again with the offensive team penalized a down.

Running rules: (1) The ball carrier will be considered tackled when touched by an opponent with two hands above or at the waist line. *The tackler must stop at the point as a marker.* (2) The ball carrier may avoid a tackler by dodging or by a lateral pass to a teammate.

Kicking rules: (1) A drop or place kick may be attempted on any play (no punting in the indoor game). (2) The ball must hit the basketball backboard. (3) A free kick may be attempted only (a) as a result of a foul or (b) after the ball has been carried or forward passed over the center of the floor. (4) Kicking should be encouraged on the fourth down; it is the last chance to score before the opponents receive the ball.

Free kick rules: (1) The opponents must know that a free kick is being attempted. (2) The ball may be kicked from any point the kicking team chooses, provided that the ball is passed by the center according to the rules; if attempting a place kick, the holder must receive the ball from the center and place it in position for the kicker to kick. (3) Both sides must line up on the scrimmage line with no interference or disconcerting tactics (as for a free throw in basketball). However, the ball may be blocked after the kick. (4) On a free kick being awarded after a foul, whether the goal is made or not, the play is resumed as before the foul.

Fouls (free kick to be awarded): (1) Forward passing when the player is beyond the line of scrimmage. (2) Pushing, holding, tripping, unnecessary roughness, or the use of the hands on offense. (3) Face guarding. (4) Interference on forward pass; pass complete and free kick awarded. (5) More than three players in the backfield. (6) Unsportsmanlike conduct. (7) Stalling.

Off side: By offense, loss of down; by defense, extra down awarded; by both, play over.

The ball is dead when the player in possession and control goes out of bounds, when the ball is thrown out of bounds, and when the player is touched who is legally in posession of the ball, and on all fumbles.

Loss of ball: (1) Failure to score, (2) after scoring, (3) when the ball crosses the goal line by a forward pass, kick, or free kick on fourth down.

This game may also be used (with a few variations) on the regulation football field, with the width of the field used as the length, and a twenty-yard section as the width. All players are eligible to receive forward passes.

## BASEBALL TYPE GAMES

*Softball*

Standard rules are available for this game. Hence the game as usually played will not be described. Frequently more action is obtained with fairness to all the players if the game is played in a form of "work up." In this case there are usually four batters and nine or ten fielders. After each out, the boys work up in the following order: right fielder to center field to left field to shortstop to third base to second base to first base to pitcher to catcher to batter. If two shortstops are used, the work up is from left shortstop to right shortstop and then to third base. The batter who has just been put out goes to right field. A variation of this is for anyone catching a flyball to change places with the batter who has been put out.

Another variation is, if no one has been put out during the time eight boys have come to bat, everybody works up one, the batter having been in longest going to right field.

*Turn Around Baseball*

This is an outdoor game played with either a softball or a hardball. The rules of softball or hardball apply as far as possible.

The first batter has the privilege of running either to first or third base. When a runner is on first or third base, the batter must run in the same direction that the preceding runner started. With no runners on base, or with only second base occupied, the batter may run in either direction. In the latter case the runner on second must wait until the batter declares himself and then run, even though it reverses the direction he started as a batter. The runner may not start toward one base and then cut over to another base unless he comes home first, and then goes around.

*Six-Man Baseball*

This is an outdoor game for two sides of six players each: catcher, pitcher, two infielders, and two outfielders. Regular baseball or softball equipment is used. Only two bases are used, and the playing area is in the form of a triangle.

*Exceptions to official baseball rules:* (1) The batter gets only two strikes, and three balls entitle him to a walk. A foul ball counts as one-half a strike. (2) Each batting side has four outs each inning. (3) The game consists of six innings. (4) The players rotate after every out. The order of rotation is pitcher, first baseman, right fielder, left fielder, second baseman, catcher, and back to pitcher.

*Three Base Ball*

This is an outdoor game for two teams, as in soft ball. The equipment needed is a softball and bat. The diamond is similar to that for softball, but with longer bases.

The pitcher pitches to the batter who hits and runs to any of the three bases. If the ball is held on the base he is heading for, he may change to another until he finds one on which the ball is, or has not been held on. If all three bases have been touched before he reaches any one of them, he is out. Having reached any base, he may remain there until a subsequent batter hits the ball, or he may return home at once (called a double one, a double two, or a double three according to the base made). He may, however, go to only one of the three bases and then home. When a runner touches any base and then leaves it to return home, he may not go back, thus being able to be put out when the ball is being held on home before he gets there. A batter is out if his fly ball is caught, and a runner may be put out by being tagged between bases or forced out at the home plate.

The scoring is based on the number of bases to which the batter has run: that is, one for a trip to base one, two for a trip to base two, and three for a trip to base three. A home run to any base and back doubles the score to either two, four, or six. Any number of runners may occupy any base at one time.

*Esophagus*

This is an outdoor game for two teams of seven to ten players each. The equipment needed is a softball and bat, and the playing area is a softball diamond.

Softball rules apply as far as possible with the following suggestions: (1) The players take regular turns at the bat, and all players line up behind the batter in single file ready to run. When the ball is hit, all run to first base. If the ball appears to be caught, all of the team should not touch

first base because they must run back in the same direction and in the same order as they came. But if it is a ground ball, they should run as hard as they can because the entire team must run to first and back in order to score. (2) The fielding team should field all ground balls as quickly as possible and throw them home. But on fly balls they must decide whether to catch them or not. If the running team does not run when it looks as though a fly ball would be caught, the fielder may drop the ball and force them to circle first base.

Special rules: only one base is used for players to run to and back to home. (2) If the batted ball is caught by the team in the field, the runners do not have to run to the base, but may remain at home and score. (3) If the batted ball is either missed or touches the ground in the field, the runners must circle first base and all must touch the home plate to score. (4) If, on a fly ball, the runners are halfway around the first base when the fly ball is caught, they must change their direction and run home—in single file, in the direction from which they came. (5) The batter must be in the lead and run on the outside of the first base line going out, and on the inside coming back.

This game does not develop skills in catching a ball but does require and stimulate quick thinking. The first base may be brought closer to the home plate if there is too much difficulty in making a round trip.

*Skee Baseball*

This is an indoor game for two teams of nine to twelve players each. A soccer football inflated to only five pounds is used. The bases are thirty feet apart, and the pitcher's box is twenty-five feet from the home plate. Two mats, five by ten by two inches, one on top of the other, are placed on the plate so that only half of the plate is exposed.

The pitcher must bowl the ball so that it rolls on the floor, then strikes the mat, and rises up through the standard strike area. The batter strikes at the ball with a softball bat, but must wait until it rises from the mat. The batter's box is determined by the area of the mats on the same side of the plate from which the batter stands to bat. The batter must remain on the mat while batting. Fast balls, curves, and change of pace are possible.

This game arose from the need of an indoor game that could be used after spring sports had begun but were not possible because of bad weather. It is an aid to teaching baseball skills, and provides a good noon hour activity. It may also be played by kicking the ball instead of batting it. It is a good noon hour informal game.

## VOLLEY BALL TYPE GAMES

*Volleyball*

The game of volleyball offers exercise to almost any desired amount. It seems only reasonable that the more players on a team, the less exercise each player will receive. Therefore, when larger doses of activity are desired, the teams should consist of not more than six to eight players.

Volleyball requires a good deal of jumping which calls for strenuous arm and leg action. The continuous stretching and reaching, particularly upward, is of great value in the development of good posture. Volleyball is played in a rectangular space sixty feet long and thirty feet wide. Dividing this area into two equal sections of thirty feet square is a three-foot net, the top of which is eight feet from the floor. For short players the net should be lowered to seven feet six inches. The players nearest the net are called "forwards"; those nearest the end lines are the "backs"; and if a third or middle row is used, they may be named the "centers."

The first player serves (bats) the ball with his hand while standing back of the serving line with both feet. The ball must pass clearly over the

net and drop within the playing area. If the ball on the serve hits the floor outside the court, hits any outside obstacle, or touches the net, the serve is lost and no points are scored. "Side out" is a condition existing when a team loses the serve. When the serve is good, the receiving team "passes" or bats the ball back over the net to the serving team. If the receivers fail to return the serve, a point is scored by the serving team. The same server continues until the "side is out." Only the serving team may score points. Under no circumstances may a player hit or pass the ball twice in succession, and each team is allowed a maximum of three passes in returning the ball over the net.

The full participation of each player is demanded by the use of the rotating system shown in the diagram. Rotation takes place only when the team receives the ball for serving. (See Fig. 89)

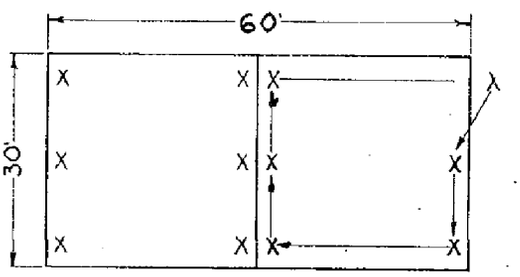



Fig. 89. Rotation for Volleyball

The game is won by the first team to score fifteen points, while at the same time maintaining a two-point margin. A team cannot win by a score of fifteen-fourteen, but the play must continue until a two-point margin is reached.

The players are not permitted to hold or scoop the ball. A ball hit into the net may still be played. A ball out of bounds may still be played but must be returned over the net the same as the others. Only front line men are allowed to "spike."

When playing co-recreational volley ball, the girls are permitted two hits each, according to the girls' rules, and no spiking is permitted.

*The fundamental skills are:* Passing—finger tip control; Serving—overhand, underhand for push; Defense; and Strategy—offensive and defensive.

*Four-Man Volleyball*

This is an indoor or outdoor game for two teams of two boys each. The equipment needed is volleyballs, a net, and standards or poles. The playing area, for formal competition is a court twenty by forty feet. Smaller courts may be used for less strenuous play or for co-recreational competition.

Volleyball rules are followed in the four-man game, with the exception of the requirement that both players must handle the ball each time it comes over the net. They may each hit it only once on each side. (This rule may be modified to suit younger boys.)

Several teams may play in the same field or court, and an elimination tournament may be held. A rope or string may serve as a net if several groups have to be provided for. This game is a good noon hour activity.

*Four-Court Volleyball*

This is an outdoor game for any number of players over sixteen. The playing area consists of four volleyball courts placed in a square, and four nets are fastened to one pole in the center. Four outside standards are necessary.

Since the game is designed for large groups, the rules are as simple as possible. One of the teams in the four courts starts the ball going and

may bat the ball into any court. The ball may be hit any number of times but must not touch the ground. Whenever the ball drops inside a team's court, it is a point against that team. The team with the lowest score is the winner.

This is an ideal game to accommodate large groups. It may be used with mixed groups, young and older groups, or as interclass competition.

*Volleyball Participation Device*

When there are several extra players in volleyball that have no place to play, this device will keep them interested and divide the time. The extra players stand in the alley outside the court. When a shift is made, they come into a regular turn. If two shift into play, two others will have to shift out into the alley. Those outside of the court may not participate.

## TENNIS TYPE GAMES

*Paddle Tennis*

This game is similar to lawn tennis, but is played on a court half the size of the lawn tennis game. (See Fig. 6, p. 37.) The net is two feet high in the center, and two feet four inches at the posts. The game is played with sponge rubber paddle tennis balls, but may also be played with old tennis balls with the covers removed. The paddles are fourteen and three-quarters inches long and seven and a half inches wide at the paddle part: they look like an overgrown ping-pong paddle. They are usually made of hard wood, three-ply, and well glued, with the handle built up with two more plies of wood, and rounded. In other respects, the rules are the same as for tennis. The game may also be played with the hand instead of a paddle. The serve in this case is like handball.

*Aerial Tennis Dart*

This game resembles badminton in its play. The court is twenty by fifty feet for singles, and twenty-six by fifty feet for doubles. There is a service line ten feet in front of the back line. (See Fig. 8, p. 37.) The net is seven feet high. The game is played with paddles which are somewhat shorter than a badminton racket, and make of hard wood, three-ply, glued. The birds and the paddle may be purchased from Sells Aerial Tennis Company, 207 Westport Road, Kansas City 2, Missouri. The birds are much more substantial than badminton birds, and will last for a much longer time. When feathers are broken they can be repaired.

In all other respects, the game is played like badminton.

*Deck Tennis*

A court eighteen by thirty-four feet is divided in the middle by a net four feet eight inches high. Three feet on either side of the net are cross lines, which are known as foul lines, and players may not step beyond these lines when throwing the quoit. For singles play, two additional side lines three feet inside the original side lines are drawn, making the court twelve feet wide. There are two lengthwise center lines on either side of the net running the length of the court, which divide the court into service courts for doubles (See Fig. 9, p. 37). The game is played with a quoit or rope ring made of half-inch rope with the end spliced, making a ring six inches in diameter. The server stands behind the rear line and tosses the ring with an underhand motion into the opposing court. The receiver must catch the ring and return it without delay. Only one hand may be used. The toss must always be underhanded and from the spot from where it was caught. The game consists of fifteen points and is scored the same as in volleyball; that is, the server continues to serve until he loses, when the opponent begins to serve. In doubles, in the first serving, only one partner

serves; after that the two partners serve one after the other, each serving until he is put out.

*Volleying Drills for Tennis Doubles*

This is an outdoor game for two sides of two players each, who take regular doubles net positions except the server who stands just behind the service line instead of behind the base line.

The server serves by dropping the ball from shoulder height and striking it after it bounces. The receivers take the serve either on the volley or on a bounce. The server may play the ball anywhere in the court. Once the ball is in play, the whole court may be used, lobbing being encouraged.

The scoring is the same as in regular tennis.

*T. S. H.*

This game is played with a ball and racket. This game, which combines elements of tennis, squash, and handball, was the outgrowth of wall practice in tennis skills.

The server starts by dropping the ball behind the base line and hitting a certain area on the wall so that the ball will rebound into the court. The size of the court is according to the space available. The ball must hit the wall each time above the three foot line and hit the floor within court limits. The scoring is the same as in tennis. This game is a good noon time activity.

*Badminton*

This game is a very rapidly growing one in the United States. It is especially valuable because of the fact that a badminton court may be set up out of doors on a ground space that is not especially smooth, for since the bird does not bounce, all that is necessary is a space smooth enough to provide safe footing.

The racket is smaller than a tennis racket. For school use, the steel rackets are very satisfactory, for they do not need presses, and usually outlast the stringing in the gut-strung rackets.

The game is played with a "bird" which is made with a hard cork nose with feathers attached. These birds wear out rapidly. For informal use, the "Flying Fleece" balls, which are inexpensive and last a long time, may be used with satisfaction (see p. 36).

The court lay-out is as shown in Figure 7, page 37. The *rear* zone is used only in singles, and the *side* zones only in doubles. The six-foot-six-inch "short" zone in the middle of the court is used only in serving: the ball must clear this zone.

The scoring is as in volley ball: only the server scores. Fifteen or twenty-one points (as decided by the players) is a game.

In singles the service is made from behind the short line, and in the right hand court. The service must go into the opponent's court without hitting the net or dropping short of the short line. Thereafter, whenever a server has either no points or an even number of points, he serves into the opponent's right hand court. When he has an odd number of points, he serves into the opponent's left hand court. In serving, the server must hit the bird upward, and from a point below his waist.

In doubles, the first server serves as in singles. If the server wins the point, his partner then serves into the other court. The service then alternates between the partners, as long as they win. On the first service of the game, when the server loses, the side is out. After that, each of the two partners must be put out in turn before the side is out and the opponents serve. "Lets," or serves that touch the top of the net and fall into the proper court, must be served over.

Players may not reach over the net with the racket, and may not touch the net with the racket or with any part of the body.

*Five-Man Badminton*

This is an indoor or outdoor game for two sides of five players each. The equipment needed is home made paddles: 3-ply fir wood, 9 inches long, 7¼ inches wide, and ¼ inch thick: handle 6 inches long (material cost for paddles, 6c): a net six feet high. There is a short service line 6½ feet; a half court 15 feet long and 20 feet wide; and a back boundary line 9 feet deep. (See Fig. 90)

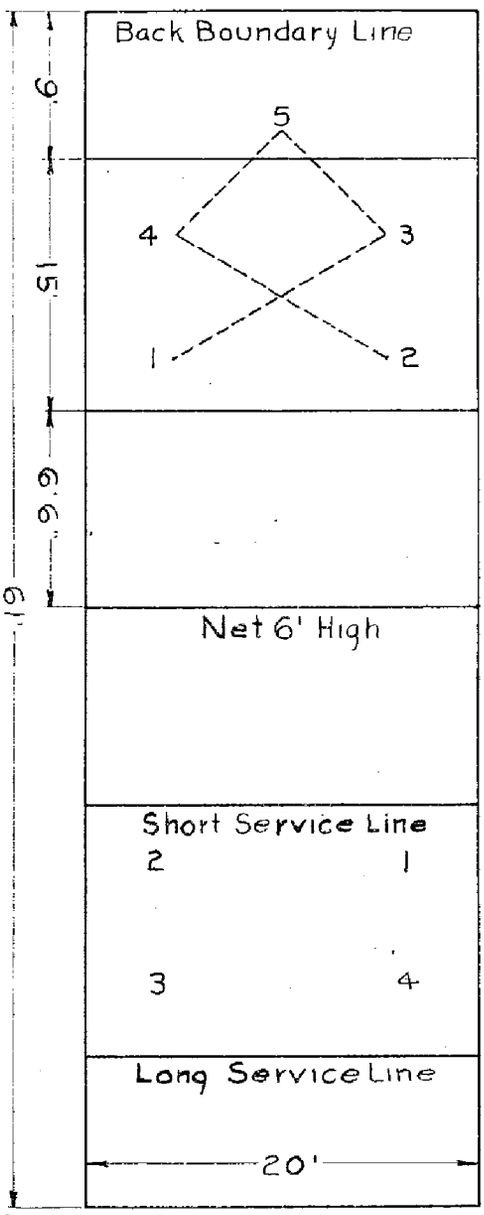



Fig. 90. Five-Man Badminton

The game is played like badminton, and follows regulation badminton rules, with the following exceptions: (1) The shuttle or bird may be hit twice in succession but not by the same player. (2) The service is made from the right-hand court to the front-line opponent in the opposite right-hand court. Alternate service from the right to left side of the court after each point is scored. The same server serves until the side is out. (3) The figure eight system of rotation is followed at the beginning of each team's

service, which is as follows: When number one is through serving, he drops to number three's position; number two goes into one's position; number three moves into five's position; number five moves into four's position, and number four moves into two's position, completing the figure eight rotation. Should number one finish serving while in the left hand of the court, originally occupied by number two, he steps directly into three's position, and number two who will be the next server is ready to serve from the right half of the court. This is a good noon hour game.

*Tether Ball*

This game is a good sport for two individuals to use in off moments. It is recommended for noon-hour, recess, and co-recreational play. The equipment is shown in Figure 16 on page 38. There is a pole ten feet high, with a heavy cord seven and a half feet long attached to the top of the pole, and with a ball attached at the lower end. This ball may be a tennis ball held in a small net, or a ball with a soft padded center with a loop attached to it. There is a two-inch line painted around the pole four feet from the top. The courts are divided by a line which passes through the pole, and there are two spots marked for service midway of each court, and six feet away from the pole.

The first server has the choice of direction. He then strikes the ball with his racket or paddle (a paddle tennis paddle is best, although a tennis racket may be used), and attempts to wind the ball around the pole above the four-foot line. The opponent tries to knock it in the other direction. If the cord wraps around a player's paddle, or if a player wraps the cord below the four-foot line, the opponent is granted a free hit. The player first wrapping the cord completely around the pole above the line wins.

*One-Wall Handball*

This game is an American game, invented in New York in 1900. It is a game that should be widely popularized in high schools, for the court is one that can readily be constructed at home. When garages are built, they may be planned so that there will be a wall of proper size for the game. If the wall is a little low, the game can still be played quite satisfactorily. The playing floor can be made of any hard surface material.

The court lay-out is seen in Figure 12, page 38. The ball used can be the regulation one and seven-eighths inch hard black rubber handball, or a tennis ball may be used. If the hard rubber ball is used, the players usually wear a glove to protect the hands.

The server starts play by dropping the ball to the floor and hitting it to the front wall from the rebound. He must serve from behind the short line and in front of the service line. The return from the wall must strike in the court and behind the short line. If the first serve is not successful, a second service is allowed. The service may not be returned before it has crossed the "short" line.

The server continues to serve until he or his partner loses a point. Only the serving side can score. In doubles, on the first serve, the "side is out" when the first server is put out. After that, each of the two partners on a team serves in turn, and the side is not out until both partners have been put out.

After the service the ball may be struck either on the fly or on the first bounce. The ball, when returned, must strike the wall before hitting the floor. If a returned ball strikes an opponent who is in line with the ball, it is a "hinder," and is replayed. If the ball strikes the player's partner, the point is lost. A game is twenty-one points.

## SOCCER FOOTBALL TYPE GAMES

*Soccer Football*

This is a standard game, the rules of which may be found in other publications. The game is played on a field about the size of a football field, with goals, twenty-four feet wide and eight feet high, at each end. In ordinary class play, reasonably satisfactory goals may be made by either nailing a bar across an ordinary football goal eight feet high or tying a rope across. In some cases where no goals are available, two piles of clothing may indicate a goal, and the referee uses his judgment as to the height at which the ball passes through the goal. Each team is made up of eleven men, divided into five forwards, three half backs behind them, two fullbacks behind the halfbacks, and a goal keeper. The game begins with a kick-off, usually rolling the ball only a couple of yards to the next man who may dribble or pass. The forward line attempts to keep about in a line across the field. The halfbacks follow them up to a distance of from ten to thirty yards depending upon the situation. The fullbacks are primarily defensive, and the goal keeper stays in the mouth of the goal. (See Fig. 2, p. 37).

In defensive play in general the center halfback marks the opposing center forward, the outside halfback marks the outside wing men of the opponents, and the fullbacks mark the inside forwards. Usually after the beginning of the game the two forward lines play between the opposing forward line and the opponent's goal somewhere on a line with the halfbacks. The ball in general should be dribbled forward with the feet or passed laterally to the wing men who dribble a ways and then center it for one of the three center men to shoot through the goal. Most kicking is done with the top of the instep. The kick should be with about the lowest two inches of the shoe laces, with a decided snap of the knee and a leg drive. It is generally better to kick with the ball slightly to one side—to the right side if kicking with the right foot—and with the non-kicking foot about even with the ball. The boy should lean forward to kick a low kick.

No one but the goal keeper may use his hands. Any other player touching the ball with any part of the arm below the shoulder commits a foul, giving a free kick to the other side. For further details, see the rules.

For physical training class games, it is usual to dispense with the off side rules. This makes for a little more scoring and is equally fair for each side.

More men can get action if the game is played crosswise of the football field, with only six men on a side, three forwards, two halfbacks, and a fullback. In this case there is no goal keeper.

*Mass Soccer*

This game is played on a field one hundred yards by sixty yards, and with four soccer balls. It is played like regular soccer with the following modifications: Organize teams of equal numbers, up to one hundred on a side. Place the balls in midfield and about ten yards apart. Have a referee for each ball. The teams line up on their own goal line, and on the signal rush forward and attempt to kick the ball across the opposite goal line. Out-of-bound balls on the sides are thrown in by the referee. When a ball crosses the goal line, a point is scored for the team sending it over. The referee then puts the ball into play at midfield by tossing it in from the sideline. The game is played for thirty minutes. A player is penalized for a foul (serious and intentional) by being eliminated from the game. The ball is then tossed up at the point of the foul.

The team scoring the greatest number of goals in thirty minutes wins. The teams are designated as "shirts," and "shirtless' or "skins." There shall be a referee for each ball. Rather than have one official on each ball, these men may work in lanes and handle anything in their respective lanes.

## GAMES COMBINING ELEMENTS OF BASKETBALL AND SOCCER

*Speedball*

Speedball is a combination of the elements of soccer, basketball, and football. For this reason it has developed into one of the most fascinating and thrilling activities for high school boys.

Speedball is a vigorous game which can contribute a great deal to the physical training program. It is especially effective in developing endurance, power, and coördination.

This game is played on a field 360 feet long and 160 feet wide (a regulation football field). There are eleven players on a team. For class use, fifteen boys may be used on a team. The goalie has no special privileges.

The quarter is ten minutes long. There is a period of two minutes between the first and second quarters and between the third and fourth quarters. There is a period of ten minutes between the halves. A period of five minutes is allowed for overtime periods. The first overtime is begun by a kick-off at the center (the same, after goals); in the event of a second overtime the goals are changed.

No metal cleats are allowed on shoes. Regulation football shoes may be used.

The winner of the toss has the same option at the beginning of the second half.

Between quarters the ball is given to the team in possession of it. In out of bounds, the procedure is the same as in basketball.

The game is started with kick-off from the kicking team's own fifty-yard line, both teams being required to remain behind their respective restraining lines until the ball is kcked.

The most characteristic feature of the playing rules of speedball is the differentiation between a "fly ball" (or "aerial ball") and a "ground ball." A player is not permitted to touch a ground ball with his hands and must play it as in soccer. A "fly ball" is one that has risen into the air directly from the foot of a player (e.g., punt, drop kick, place kick, or kick-up). Such a ball may be caught with the hands provided that the catch is made before the ball strikes the ground again. A "kick-up" is a ball that is so kicked by a player that he can catch it himself. A ball on a bounce from the ground may not be touched with the hands, for the ball has touched the ground after being kicked. This rule prohibits the ordinary basketball dribble, but one overhead dribble (throwing the ball into the air and advancing to catch it before it hits the ground) is permitted.

If a team causes the ball to go out of bounds over the *side lines*, a free "throw in" (any style) is given to the opposing team. Should the ball go over the *end line* without a score being made, the ball is given to the opponents, who may *pass or kick from out of bounds at that point.*

In the case that two players are contesting the possession of a held ball, even in the end zone, a "tie ball" is declared, and the ball is tossed up between them.

The kick-off is made by a place kick from any place on or behind the fifty-yard line of the kicking team. Team "A" (the kicking team) must be behind the place from which it is kicked. Team "B" must stay behind the restraining line (center of the field) until the ball is kicked (penalty—a violation). The ball must go ten yards before "A" may play, unless it is first played by "B." (penalty—violation). The kick-off out of bounds goes to the opponents at that spot. The kick-off touched by "B" that goes out of bounds, with no impetus added, still belongs to "B." The kick-off, in possession and control of "B" and then fumbled out of bounds, belongs to "A" at that spot. A field goal from the kick-off (under crossbar) scores three points.

A field goal (3 points) is a soccer type of kick in which a ground ball

is kicked under the crossbar and between the goal posts from the field of play or end zone. A punt going straight through is not a field goal, for it is not a ground ball. The ball must hit the ground first. A drop kick from the field of play that goes under a crossbar does not count as a field goal. A drop kick from the end zone under the crossbar counts as a field goal; over the crossbar it counts as a touchback.

A drop kick (2 points) must be made from the *field of play* and go over the crossbar and between the uprights.

An end goal (1 point) is a ground ball which receives its impetus (kicked or legally bodied) from *any* player, offensive or defensive, in the end zone, and passes over the end line but not between the goal posts.

A penalty kick (1 point) is a ball, kicked from the penalty mark, that goes between the goal posts and under the crossbar. The penalty mark is placed directly in front of the goal at the center of the goal line.

A touchdown (1 point) is a forward pass from the field of play and completed in the end zone. The player must be entirely in the end zone. If he is on, or has one foot on either side of, the goal line, no score is made and the play continues. If player is on, or outside the side line or the end line, the ball is declared out of bounds. If a forward pass is missed, the ball continues in play, but must be returned to the field of play before another forward pass or drop kick may be made.

Substitutions may be made at any time when the ball is not in play. If a player is withdrawn, he may not return during that same period.

Three legal time outs of two minutes each are permitted during the game.

Personal fouls, four of which disqualify a player, include kicking, tripping, charging, pushing, holding, or blocking; unnecessary roughness of any kind, such as running into the opponent from behind; and kicking at a fly ball and thereby kicking an opponent. Technical fouls include illegal substitution, more than three time-outs in a game, and unsportsmanlike conduct.

Violations include traveling with the ball, touching a ground ball with the *hands or arms,* double overhead dribble, and kicking or kneeing a fly ball before catching it (if the opponent is actually kicked, it is a personal foul.)

Penalties (the offended player shall attempt the kick).

| *Type* | *Location* | *Penalty* |
|---|---|---|
| Personal | In the field of play | One with no follow-up |
| Technical | In the field of play | One with no follow-up |
| Violation | In the field of play | Out of bounds to the opponent |
| Personal | In the end zone | Two with a follow-up on last |
| Technical | In the end zone | One with a follow-up |
| Violation | In the end zone | One with a follow-up |

Thus fouls in the field of play allow no follow-up, while fouls in the end zone always allow at least one follow-up. On penalty kicks, with no follow-up, only the kicker and the goalie are involved. On penalty kicks, with a follow-up, the kicking side is behind the ball, and the defending side is behind the end line or in the field of play. *No one* is allowed in the end zone or between the goal posts. The kicker may not play the ball again until after another player plays it, and he must make an actual attempt at a goal.

*Basket Soccer Ball*

This game may be adapted to large or small classes. It may be played in almost any grade. Since the game may become quite strenuous, the playing periods for younger boys should be shortened. The game involves all the skills of basketball and soccer, but is simple enough to be quickly and easily taught. Either a volleyball or a soccer ball may be used.

The class is divided into two equal groups, which are lined up behind

the boundary lines at the opposite ends of the court. Four players from each end line are called into the court for play. The ball is placed in the center ring of the basketball floor. Two opposing players enter the ring, and place the inside of one foot against the ball. The other three pairs of players must stay outside the ring until the ball has been passed. The game is started by the center players who "foot" the ball to their teammates. The object of the players on the court is to score by one of two methods. (1) The ball must hit the wall behind the players standing at the end of the court. If the wall is too far away, the scoring may take place as the ball crosses the end line of the floor. The end players, of course, attempt to force the ball back onto the court whenever it approaches. The end players may use both hands and feet in defending their area. They should, however, be required to keep in contact with the end line with at least one foot. In scoring, the ball must pass below the level of the defender's shoulders. This type of scoring should count *one point.* (2) A second method of scoring is to "shoot" the ball through the basket. This counts *two points.*

The ball may be caught with the hands only when the impetus putting the ball into the air is *something other than the floor.* For example, a ball may be kicked, and, in striking another player or the wall, may rebound into the air. In either case it may be caught with the hands. The ball then may be passed as in basketball. No player may run with the ball. Dribbling, of course, is prohibited. The defensive team may guard, as in basketball, when the opponents are passing or shooting. After a held ball the ball is tossed up between the players, and the play continues. Whenever the ball contacts the floor, the play must continue *without the use of hands.*

The playing time for each group on the court may be from one to three minutes. Two-minute intervals are probably best. New players come from the lines while the old players take positions on the end lines.

The following *general playing rules* may be listed:

1. Scoring: (a) one point for kicking or throwing the ball through the defense and hitting the wall and (b) two points for shooting the ball through the basket.
2. There must be no unnecessary roughness. For fouls, such as pushing, tripping, and holding, a free kick is given the offended team at the spot of the foul.
3. The defensive players may guard an opponent who is attempting to pass or shoot. The guarding is similar to that in basketball.
4. Dribbling the ball on the floor is prohibited. One overhead dribble is allowed. The penalty is a free kick from the spot.
5. During the free kicks only one defensive player may stand directly between the ball and the end line, and he must be at least four feet away.
6. If the side walls are close, it is better to play with no out of bounds on the sides. If the walls are a distance away, the team kicking the ball over the basketball sideline loses it to the other team at that spot. The play continues with the team kicking the ball in from outside the line.
7. No player may take more than two steps while in possession of the ball. "Traveling" is called as in basketball. The penalty is a free kick for the other team at the spot of the foul.
8. If the ball is kicked over the heads of the endline defenders, any member of the line may have a free kick in putting the ball in play.

### *Alley Soccer*

The size of the field for alley soccer is forty-five feet by ninety feet divided lengthwise into three alleys, each fifteen feet wide. Each goalie has at least two yards to guard. (See Fig. 91)

The number of players is adaptable. Each team has three runners, two (four or six, depending on the number of players) sideline guards, with the remainder of the team as goal guards; two goalies guarding the end line of center alley is the preferable arrangement. In a large class as many as six goalies may guard the whole end line.

The object of the game is for the runners to advance the soccer ball down the field by passing and dribbling until in a position to kick for goal. The ball is placed in the center of the field. The runners are behind their own restraining lines, and when the whistle is blown, they advance in their respective alleys. The ball must be pulled back or to one side by either center runner, and then passed or dribbled before it is kicked for goal.

The sideline guards must keep the ball within the playing field and pass the ball in (with the feet) on out-of-bound plays. The goalies must defend their goals by blocking with any part of their bodies except the hands. The hands may be used above shoulder height to stop the ball (not to advance it).

Two points are scored each time a runner kicks the ball through his opponent's goal, except on a free kick. The kick must be made from within the zone between the opponents' restraining line and the end line (failure—opponents' ball out of bounds on end line). One point is scored for each successful free kick.

A ball given an impetus by a runner and crossing the opponents' goal, even though it touches the body of a defending player, scores. A ball given an impetus by a defending runner, which goes over his own goal line, does not score.

A ball going out over the side lines and endlines must be passed in (with the feet) by the nearest opposing side guard at the point where it leaves the field of play. If the ball goes out of bounds off the bodies of two opponents simultaneously, the official throws the ball down between those two players, and the play continues.

Fouls are as follows:

1. Failure to pull the ball back or to one side and then passing it, or dribbling before kicking for goal on the initial play
2. Playing out of position; that is runners crossing alley lines, goalies and sideguards playing in the field
3. The ball kicked into goal by a player other than a runner
4. Touching the ball with the hands below shoulder height
5. Catching or advancing the ball with the hands
6. Pushing, holding, dangerous kicking and any rough play
7. Kicking the ball above the reach of the opposing players
8. Dribbling or passing the ball to another player on a free kick
9. Opposing runners entering the field of play before the ball reaches the goal line on a free kick

The penalty for all fouls is a free kick for the opposing center runner. The free kick is a place kick taken on the restraining line nearest the goal of the offending team. The runners of the offending team must be outside the field of play and must not aid in blocking the goal. As soon as the

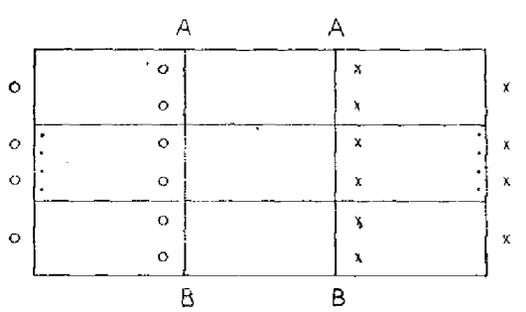


Fig. 91. Alley Soccer

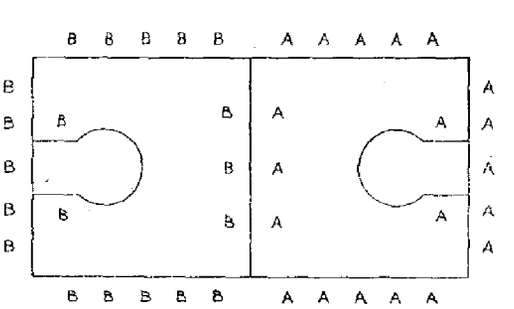


Fig. 92. Basker or Soccet

free kick is completed, the runners may again enter the game. A breach of this rule: If the goal is made, the score stands; if missed, another free kick is awarded the same player.

After each score, the players rotate one position counterclockwise, that is, center runner becomes left runner; left runner becomes left side guard; left side guard becomes goal guard, etc.

*Basker or Soccet*

This is an indoor game played on a basketball court by any number of players of from ten to forty on a side. The only equipment needed is a basketball.

The play is started at the center as in soccer between two members of opposing teams who kick it toward the opponents' end of the floor. Any ball caught in the air may be passed or shot at the basket until it is dropped or touches the floor. The teams attempt to kick the ball out of bounds at opponents' end of the floor, shoot for goal, or kick for goal. Basketball rules apply whenever basketball situations arise, such as fouling a shooter; soccer rules apply whenever soccer situations arise, such as, stopping a bouncing ball with the hands.

The penalty for a soccer foul is a free kick at the spot, and for a basketball foul, one free throw from the free throw line.

One point is counted for kicking the ball out of bounds anywhere on the opponents' half of the floor or for a successful free throw; two points for a successful goal shot from the field; three points for a successful goal kicked from the field. (See figure 92)

After each score, whether it be one, two or three, the players rotate positions clockwise, the five players on the right-hand side moving in to take the floor positions.

*Sockem Hockey*

This is an indoor game for two teams of eight to twelve players each. The players may space themselves according to their own judgment on the floor except that one player from each team must act as center.

The game is started by the referee's throwing the ball into the center circle between the opposing centers who must be outside the six-foot restraining line until the ball is thrown in. Only the two centers may go after the ball when it is thrown in, and the remaining players must not enter the circle until the ball has been hit by one or the other. The ball may be hit by any part of the hand or forearm in any direction. The object of the game is to bat the ball across or over the goal. (The goal is that portion of the endline between the sidelines of the basketball playing court and any place on the wall from the floor up to ten feet.) The ball must not be held or stopped, but may be batted on the floor or into the air toward the goal or to a teammate. Contact may occur only when a player is making an attempt to get at the ball. (The amount of pushing or rough play should be determined by the age level of the group.)

Fouls are called by the referee, and the ball goes to the other team out of bounds at the side nearest to the spot of the foul. The player committing the foul is put out of the game and must remain in the penalty box until a goal is made by either team. Unnecessary roughness fouls are left to the judgment of the referee but should be judged on the basis of whether or not the player is making an honest attempt to get the ball. Contact that is likely to result in injury should not be tolerated.

The ball is played in from out of bounds only when a player has fouled, for there are no out of bounds. The players *may* play the ball off the walls on the side of the court. The player may throw the ball until it has touched the floor. A player of the opposing team may intercept and bat the ball before it bounces on the floor if he is able to do so.

Tie balls should be only a rare occurrence if fouls for holding the ball are called. In the case of tie balls the referee may throw the ball in from the side at the spot.

Sockem hockey is a very fast and exciting game and one that can be learned in a short time. The players soon learn in playing the ball in from out of bounds to bounce it to a teammate so that he may get a good swing at it toward his own goal. The game may be played in quarters of six minutes in length, with rest periods corresponding to those in basketball.

*Combination Ball*

This is an outdoor game for two teams of ten or more players each. The playing area is a football field, and the equipment needed is a soccer ball. (The end zones are restricted areas upon which the opponents must not encroach.)

Each team stations one or two players in their restricted areas in front of the goal posts. The kicking team lines up on its own forty yard line; the receiving team lines up on or behind the fifty yard line. The kicking team may either kick the ball down the field or give it a slight kick forward of about one or two feet, and then lift kick it to one of its own players who may run, pass (in any direction), or kick as he chooses. (See Fig. 93)

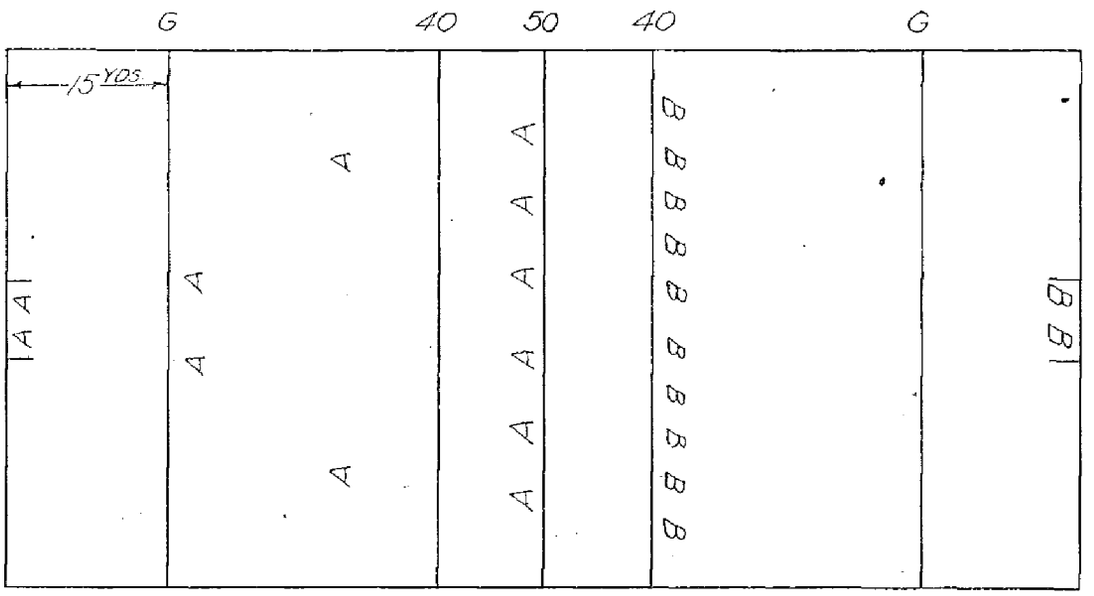



Fig. 93. Combination Ball

The object of the game is to throw or kick the ball either over or below the crossbars; one point is scored if the ball goes over the bar and two points if it goes under. If the ball is caught in the air before touching the floor, it may be advanced by running, passing, or kicking. If the ball is not caught, it must be kicked from the ground as in soccer or it may be lift-kicked to a teammate. If a ball bounces, it may be stopped with any part of the body except the hands. When a player running with the ball is tagged on the back by both hands of an opponent (or by one hand on back with one on the chest), he must immediately drop the ball and attempt to kick it.

The out of bounds are (1) over the end line or in the restricted area (guardians of the goal may either kick the ball down the field or lift-kick it to a teammate; opponents may not enter the restricted area.) (2) over

the side line; the opponents must kick the ball from the ground into the field of play.

The penalty is a free kick of the ball from the ground (the opposing team to remain at least ten yards back).

*Kick Baseball*

This is an indoor or outdoor game. The players are the same as in softball. The equipment needed is a basketball or a soccer ball. The playing area is a regulation softball diamond in the gymnasium or on the playground.

The same rules apply as in softball with the following exceptions: (1) The pitcher rolls the ball from the pitcher's box across home plate (plate thirty-six inches wide). The pitch to be a strike must be over the plate and not bounding higher than the kicker's knees. (2) The batter gets three strikes to kick the ball fair. Four balls entitle him a walk. If he fouls on the third strike he is out.

Outs occur when (1) a fly ball is caught, (2) a runner is hit by a kicked ball, (3) a runner is hit by a thrown ball while he is off base, (4) a ball reaches base ahead of the runner, as in softball. (5) a runner is touched while on base paths or while sliding into a base.

## MISCELLANEOUS BALL GAMES OF HIGH ORGANIZATION

*Field Handball* (European Handball)

This is a game very popular in Europe and combines many of the features of basketball, with the boys running on a larger field somewhat after the nature of soccer and speedball. The object of the game is to pass a soccer ball through the opponents' goal and to protect one's own goal. The field and the goal are the same as those used in soccer, as are the number and the distribution of the players.

A goal area is constructed by drawing a line eight yards in length twelve yards in front of the goal. Each end of this line is continued by means of a semicircle with a radius of twelve yards, with the goal post as a center, the line being continued until it intersects the goal line.

In front of the center of each goal is a line one yard in length drawn at a distance of fourteen yards. This is called the fourteen-yard mark. A center line is drawn across the middle of the field, and at the midpoint of this line is drawn a circle with a ten-yard radius. A penalty area is constructed in the same manner as in soccer. (See Fig. 3, p. 37).

The ball is put into play by the center forward who stands in the starting circle, tossing the ball to a teammate. The opponents must remain outside the starting circle until the ball has been first passed. Then the game is played with the same halves and intermission as in basketball. After the intermission, the other team puts the ball into play. Rules as to the substitution of players, putting the ball into play after a goal, etc., are about the same as in basketball, except that after each goal the ball is put into play in the middle of the field by the team scored on.

The ball may be played only with the hands and arms as in basketball. It is not permissible to (1) pass the ball between two men more than twice in succession, (2) run more than three steps with the ball in one's hands either forward or in place, (3) hold the ball in one's hands for more than three seconds, (4) touch the ball with any part of the body other than the hands and arms, except when catching the ball.

It is illegal for an opponent to attempt to (1) knock the ball out of the hands of a player, (2) hold, push, charge, or commit any other act that would be a personal foul on an opponent in basketball, (3) shove or drag an opponent into the goal area, (4) intentionally hit an opponent with the ball.

Should more than one player grab the ball, held ball rules in basketball hold, except that the ball is put into play by means of a referee's throw.

In the referee's throw all the players must retreat five yards from the ball and the referee drops the ball vertically on the ground when the players are permitted to go after it.

Only the defending goal keeper is allowed to enter the goal area. Entrance to the goal area to other players is a foul, penalized by a free throw. If an individual falls into the goal area but his feet remain outside, or steps into the goal area after a throw for goal, no penalty is incurred if he immediately withdraws. Defending players may not pass the ball to the goal keeper in the goal area or otherwise throw it into the goal area. The violation of this rule is penalized by a free throw.

The goal guard must throw the ball within three seconds after picking it up, or on a penalty, after the referee blows his whistle.

On the violation of most rules the penalty is a free throw from the spot of the violation. A goal may be scored from such a penalty. Penalty throws from the fourteen-yard line are awarded if a player does rough guarding inside his own penalty area, if any player other than the goal guard enters his own goal area with both feet, if a player plays the ball back into his own goal area, or if the goal guard is illegally changed. During the execution of the fourteen-yard throw all players, except the thrower and the goal guard, must remain outside the goal area; and until the ball is thrown, the goal keeper must stand behind the goal line.

A goal is made when a legal throw passes between the goal posts and under the crossbar.

If a player causes a ball to go out of bounds over a side line, the opposite team throws the ball in at the spot where the ball went out of bounds. The throw-in is made as in soccer, forward over the head with both hands, and without a jump.

If the offensive team passes the ball over the opponent's goal line, the goal keeper puts it into play from anywhere within the goal area. If the defending team touches a ball last before it goes out of bounds over their own goal line outside the goal or if they play the ball into their own goal area (provided that the goal guard does not touch it, in which case it is a free throw from the fourteen-yard line), if a player enters his own goal area or the goal guard uses feet illegally or steps out of the goal area in throwing the ball out or holds the ball in his hands more than three seconds, it is a corner penalty, in which case the opponents put the ball into play by throwing it in any manner from within a yard of the corner nearest the point on the field where the foul was made. For other violations of rules, a free throw is given from the point where the rule was violated.

There should be a referee and two linesmen in an official game. The referee is also the timekeeper.

In all other situations the rules of basketball apply. It should be noted that the players may not dribble the ball as in basketball, but they may run with it for three steps.

*Konano*

This is an outdoor game for two sides of ten or fewer players each—five forwards, four backs, and a goal guard. The forwards play only in their forward zone, the backs in their rear zones, and the goal guards back near their goals. The equipment needed is (1) sticks which are ¾ inch to 1 inch thick and 42 inches long; (2) the konano, which is a snakelike tube of canvas or leather flat in the middle and with enlarged ends containing sawdust or wood ashes. This might also consist of two light balls fastened together by a thong. It is about 20 inches long and 1½ to 2 inches wide. The narrow middle part of the shank is about 10 inches long and each enlarged end is about 5 inches long.

The playing field is any flat area 40 to 80 yards long and 30 to 40 yards wide. The goals, which are made of light wood poles, are 6 feet wide and

7 feet high. There are no side or end boundaries for the field. A line should be drawn across the field halfway between the goals. There is a goal zone in front of each goal, consisting of the area enclosed in a semicircle of a 12-foot radius, with its center at the midpoint between the goal posts.

The object of the game is to throw or carry the konano through the goal. When one side secures the konano, the players pass it back and forth or run with it until they are close enough to score. The other side tries to prevent the score and to secure the konano. If a goal is missed, and the konano goes behind it, the play continues as usual. The goals are changed after each period. The watcher will assign goals to start the game. At the start of each period, and after each goal, the watcher tosses the konano high into the air between the two center forwards, who try to pass the konano back to the guard, or who may secure the konano personally for a run or pass. After a time-out or after a simultaneous double foul, the konano is tossed in the same manner between the two opposing players nearest the konano. In all tosses no other player may be within stick and arm reach distance until the konano has been touched by one of the two playing the toss. When the toss is at the center, the forwards move over into their forward zone as soon as the konano is put into play.

A score is made each time the konano passes through the goal from the front or field side. The entire konano must clearly pass through for a score to be counted.

For high schools there should be four periods of five or six minutes each, with a minute of intermission between the periods. After the boys have become accustomed to the game, the periods may be lengthened but should never exceed eight minutes. With the longer periods there should be more time between the second and third periods. The watcher may call time out for injury, substitution, etc. There should be few fouls and there are no boundaries; hence ordinarily the play should be uninterrupted until a goal is scored. Each captain may call time-out once each period if his team is in possession of the konano or just after a goal has been made. A called time-out shall not exceed one minute except for injury.

(1) It is a foul to strike or slap with the stick, or to start a stick movement from above the shoulders. When a player is carrying or following through a stroke, the stick may go above the shoulder. (2) The konano must not be intentionally carried or hit directly by the hand or foot. If it slides down from the stick to the hand, there is no penalty if it is moved out on the stick at once. (3) It is a foul to push, shoulder trip, or otherwise play the body of an opponent. It is good play to keep the body between the opponent and the konano if a player arrives in position first. A player carrying the konano must not charge into a defensive player in an attempt to carry the konano through. In case of doubt the burden of proof is on the attacking player. (4) It is a foul: (a) if a forward goes into the rear zone, (b) a back into the forward zone or (c) if any player, except the goal guard or an attacking forward in actual possession of the konano, goes into the goal zone, thus interfering with the play of an opponent. Simply going into these zones is not a foul unless it makes a difference in the play.

The penalty for all fouls is a free or unguarded throw of the konano from the spot of the foul, unless the foul is committed near the goal, in which case the goal guard may be allowed to have the throw made from a spot fifteen feet directly in front of the goal. In such a play no player, except the goal guard (who must remain just in front of the goal), may be between the thrower and the goal. No one must interfere with the act of throwing, but the goal guard may intercept the throw after it has been made. In all other free throws no opposing player may be within ten feet of the thrower until the throw has been completed.

In the case of extreme or intentional roughness the offender must be eliminated from the game for two minutes without a substitution. Three

fouls on one person bar him from playing for two minutes. In the case of simultaneous fouls by members of the opposing teams, the konano must be tossed up at the spot.

*Bell Ball*

This game may be played on a field of any size, and with any number of players. However, thirteen men on a team, and a field 240 feet long and 160 feet wide is ideal. The goals are situated 60 feet from the end lines and 120 feet apart. The goal consists of a pole extending 10 feet from the ground. On top of the pole is located a goal ball. When this goal ball has been dislodged by the ball in play, a score is made. The ball in play is a soccer ball.

Fouls are penalized by giving possession of the ball to the offended team at the spot and by giving the offender a certain number of laps to execute about the playing area. When the ball is awarded to the opposing team at an indicated point, all players must remain at least six feet away from the player putting the ball into play. This player is permitted three seconds to put the ball into play and may attempt to score if he chooses to do so.

The game is played in eight-minute quarters. Each half is started by a jump ball at midfield between a member of each team. The teams remain in their half of the field until the ball has been tapped.

The players may run with the ball, pass it in any direction, or strike it with hands, open or closed. A ball carrier may carry the ball in any direction. However, if he is touched or tagged by an opponent, he may not at this time throw for goal or continue with the ball but must pass it before taking five steps, or within three seconds.

If it is advantageous for a player, he may attempt to tie up the ball carrier rather than to tag him. This must be done without leaving the feet and without a shoulder tackle, but by grasping the ball carrier between his waist and shoulders. A legal tie-up results in a jump ball.

The offensive team may block for its ball carrier with an upright check or screen but must not leave the feet, use a shoulder block, or clip by running into the back of an opponent.

The use of the hands on an opponent by any member of the team in possession of the ball is not permitted; for example, the ball carrier may not stiff-arm an opponent as in football. The defensive team may use hands on the body of an opponent to ward off blockers. A player warding off a blocker may use his hands to push him away but may not use them to strike the opponent. All unnecessary roughness, such as tackling, the use of the hands about the head of an opponent, tripping, and holding an opponent who is not in possession of the ball, is prohibited.

After a goal has been made, the team scored upon may advance the ball to their opponent's one-quarter line (the line 30 feet from the scoring team's goal), without interference from the scoring team.

Jump ball, timing regulations, and out of bounds are handled much the same as in basketball. Technicalities of substituting, scoring, etc., are eliminated. The play is practically continuous except for out of bound regulations and jump-ball plays.

## CLASSIFICATION OF GAMES

*Games for boys of senior high school age*

Aerial Tennis Darts
Alley Soccer
Basker or Soccet
Basketball
Basket Soccer Ball
Battle Ball
Bell Ball
Boomerang
Box Hockey
Broncho Tag
Combination Ball
Deck Tennis
Dodge Ball
Esophagus
Field Handball
Five Man Badminton
Football Keepaway
Four Court Volleyball
Four Man Volleyball
Goal-Hi
Golf Basketball
Gym Hockey
Handball
Hand Hockey
Hokey-Pokey
Horse Shoe Pitching
Indoor Football
Konano
Keep Away
Kick Football
Line Rush
Mass Soccer
Milling The Man
One Goal Basketball
Open Football
Paddle Tennis
Ring Toss Golf
Shuffleboard
Six Man Baseball
Skee Baseball
Soccer Football
Sockem Hockey
Softball
Speedball
Team Bar Wrestle
Tennis
Tether Ball
Three Man Basketball
Touch Football
T. S. H.
Tug of War
Turn Around Baseball
Twenty Yard Touch Football
Volleyball
Volleyball Participation Device
Volley Drill (tennis)
Water Baseball

*Games for boys of junior high school age*

Aerial Tennis Darts
Alley Soccer
Basker or Soccet
Basketball
Basket Soccer Ball
Battle Ball
Boomerang
Box Hockey
Broncho Tag
Deck Tennis
Dodge Ball
Esophagus
Football Keepaway
Four Court Volleyball
Four Man Volleyball
Goal-Hi
Golf Basketball
Gym Hockey
Handball
Hokey-Pokey
Indoor Football
Keep Away
Kick Baseball
Line Wrestle
Mass Soccer
One Goal Basketball
Paddle Tennis
Ring Toss Golf
Shuffleboard
Six Man Baseball
Skee Baseball
Soccer Football
Sockem Hockey
Softball
Tennis
Tether Ball
Three Baseball
Three Man Basketball
Touch Football
Tug of War
Turn Around Baseball
Twenty Yard Touch Football
Volleyball
Volleyball Participation Device
Water Baseball

## CHAPTER 22

# RELAY RACES

Relay races may be interspersed throughout the program to add variety, interest, competition, and vigorous exercise. Such races differ from games in not having the element of strategy. There is no attempt to use deception or to outwit the opponent; rather the various teams carry out their assignments, whether running, jumping, or doing stunts, independently of each other. Each team competes against the other teams in the attempt to have all of its members complete the tasks prescribed by the relay before the other competing groups have completed them. A special feature of a relay race is that each individual of the group performs in turn the assignment called for by the particular relay. The race is ended when all the runners have had their turns, one or more times, as predetermined.

A few points on relays should be remembered:

1. Be sure that the finishing runners of each team are distinguished in some way, such as by a handkerchief tied around the arm, by raising both hands overhead, by carrying an object to the finishing line, or by having a special finish line. Otherwise in the general confusion with so many runners moving about with some teams far ahead of others, it may be very difficult to pick the winners.

2. Do not have too many runners on a team. This makes a long period of waiting and of inactivity before a runner has his turn. It is better to have more teams with fewer members on each of them; eight to ten at the most are recommended.

3. The distances in the relays should be long enough so that the runners get a real workout. If the available space is small, this may be accomplished by continuing a shuttle relay without interruption for the second time, or as many times as desired, with the players naturally being in a position to reverse the direction of their run on the second lap.

To be specific, use distances from sixty to one hundred yards when each boy runs once, and from twenty to thirty yards in hopping, all fours, and jumping relays. These may be run two or three times in succession.

4. The distances involved in the different relays may be progressively increased as the boys improve in physical condition.

5. Rather than disqualify a team when infractions occur, as they unintentionally will in the excitement of the race, it is better to charge a foul and then add the number of fouls to the team's order of finish. The team with the lowest total wins: in the case of a tie, the team with the fewest fouls. Judges are then needed, one for each team.

The various relays fall into four types: race track, shuttle, column, and line. In the track type of relay the runners are scattered at equal intervals over a course of designated length. The first boy runs and touches the second boy, usually by a transfer of an object, the baton. The second boy then continues forward over the same distance and touches the third boy. This type of relay is not suited to large numbers and so is used but little in mass athletic programs. This type of relay may be run around any set of objects, such as four chairs or four piles of shirts. If a large group breaks up into smaller groups, each small group may form its own "track" and use this type of relay race.

The *shuttle* type of relay handles large numbers of participants in a small area and therefore is useful in any program concerned with mass participation. In this style one half of the team is in line formation facing the other half of the team, also in line formation, and there is a specified distance separating the teams. Each team is lined up in the same fashion.

When the relay starts, the first boy runs across the intervening distance to touch the second boy. In turn the second boy shuttles back across the same distance to touch the third boy. One half of the team are therefore odd numbers—1, 3, 5, 7, 9, etc., and the other half are even numbers—2, 4, 6, 8, 10, etc. The team finishes when the last man in the even numbered line finishes his turn. This style of relay is very popular for running events, including variations with obstacles and handicaps, also for relays in which objects are moved, such as butting a ball with the head or kicking it with the feet.

The *column* relay is commonly used in athletic instruction. For example, if a certain type of basketball pass is to be taught, the two lines of players may line up facing each other. The first boy may then pass to the second boy, the second boy in turn may pass to the third boy, etc., as the ball travels diagonally down the group to the end of the line. It is not a popular type of event if mass participation is desired, but may be used in a competitive way, by having one team try to beat the other in carrying out its performance in zig-zag fashion ahead of the other teams.

The *line* relay is probably the most used of all types in mass participation. It is suited to almost any purpose. The players line up Indian fashion, one behind the other. All teams are thus lined up and face in the same direction. The same results as in the shuttle relay can be obtained by having the first players run as specified to and from a goal. The only difference between it and the shuttle, therefore, is the fact that a player goes over the same distance twice (forward and back) instead of once only. The line relay is therefore useful for many novelty events wherein it is desired that a player carry out some specified assignment on his forward journey and reverse it on the return, such as the crab walk with feet forward and then reversed with feet trailing. This type of relay is used also where certain objects are to be handled either underleg or overhead.

In each of the four formations listed above, relays may be run with various methods of locomotion. The most common ones are:

1. Running (may be over hurdles or other obstacles).
2. Hopping.
3. Running on all fours.
4. Progressing by frog jumps, alternating on hands and feet, with feet apart, outside of hands.
5. Crabwalk, forward or backward.—In this form of locomotion, the boy runs on all fours, face up. The arms are extended backward.
6. Running, holding one ankle of own foot with the hand on that side.
7. Kangaroo jumps.—The boy holds a piece of cardboard between the ankles, holding it there by pressure inward by the ankles, or holding a ball between the knees.
8. Successive short broad jumps.
9. Three-point running.—The boy runs on two hands and one foot, keeping the other foot raised off the ground.
10. Three-point, cross leg.—Same as *9*, except that the ankle of the free leg is crossed over back of ankle of leg used in running.
11. Chariot race.—Four boys run abreast with locked elbows.
12. Pilot race.—Three boys run abreast, locking elbows, the middle boy (the pilot) is facing forward, the two outer boys face backward and run backward.
13. Crew race.—Four to eight boys in a line, preferably straddling a rope, but may be simply holding on to each other, each holding around the waist of the boy in front of him. All but the last boy face backward. The last boy, who is the coxswain, faces forward, and "steers" the crew.
14. Tandem.—Two boys in file, the rear boy holding around waist of the boy in front.

15. Wheelbarrow.—Two methods are commonly used. In the first, the front boy runs on his hands, and the rear boy pushes him by grasping his ankles, wheelbarrow fashion. In the second, the front boy is on his hands, but the rear boy is between his thighs, holding his legs just above the knees.

16. Mounted, or horse and rider.—Generally this is best done with the rider riding pick-a-back, astride the hips of the horse, and holding the horse by the shoulders, and around the neck. The rider should ride close. The horse holds the rider's thighs in his hands. The best distance for this race is from forty to one hundred yards.

17. Various novelty or tumbling events, such as forward rolls, cart-wheels, handsprings, any of the methods of progression described under Guerrilla Exercises, dribbling a ball with hands or feet, etc.

There are a number of special formations which will be described below:

1. *Jump Stick Relay.*—Each team uses a wand or broomstick or belt. The line formation is used. The front two boys take the stick, holding it about knee high, and run down the line of boys, one on either side. The boys jump over the stick as it passes them. When all of the boys have jumped the stick, the two boys carrying it run to the head of the line and lay the stick on the ground in front of the line, run to the rear of the line, and line up. The two front boys at the head of the line take the stick as soon as the others lay it down, and repeat the performance. This is repeated until all the boys have carried the stick. If there is an odd number of boys, one will carry the stick twice.

2. *Tunnel Relay.*—In line formation, all the boys stand with legs in straddle position. At the starting signal, the front boy turns around and, on hands and knees, goes through the tunnel of legs. When he gets to the end, he runs to the head of the line and touches the next boy, who starts through. The first runner then goes to the rear end of the line and takes his place. This continues until all have gone through the tunnel. As a variation, the boys may go through as fast as they can one after the other, until all have been through. When the last boy finishes, the race is finished.

3. *Crawl-Under-and-Weave.*—Like the tunnel relay, except that the boys stand side by side in one rank, with feet apart. Each boy crawls through the legs of the first boy from right to left, then through the legs of the second boy from left to right, and so on down the line.

4. *In and Out.*—The boys stand about four feet apart, and the running ones zig zag around between them.

5. *Pursuit Relay.*—This must be run in track formation, around a track of some kind. This may, for example, be around heaps of clothing or around chairs. The boys are spaced equally around the track, at least twenty feet apart. At the starting signal, all begin to run in the same direction, each boy chasing the one ahead of him. If anyone is touched by the boy behind him, he must drop out. After about one minute, the running is stopped, and the boys rest a bit. They then form two or more groups (according to the number who have fallen out), but on smaller tracks, and continue as before. This is repeated until there is but one boy left.

6. *Obstacle Relay.*—Various obstacles which can be climbed, vaulted, jumped, crawled under, etc., should be prepared. The run may be conducted in any convenient formations.

7. *Arch Ball Relay.*—The players are divided into equal teams. The first player of each team stands on a line, and the other players line up behind him, placing their hands on the shoulders of the person in front, arms out-stretched. Each of the first players has a ball, and at a signal, passes the ball overhead with both hands to the player behind, and so on to the last player. When the last player gets the ball, he runs to the front and passes the ball overhead. Each player, after he has passed the ball, at once places his hands on the shoulders of the person in front so that the

length of the rows will always be the same. The team wins when the first player again takes his place at the head of the line with the ball held high overhead.

8. *Stride Ball Relay.*—This relay is the same as the Arch Ball Relay, except that the boys stand with their feet apart, and pass the ball back between their legs. The ball must be *handed* (not rolled) back from boy to boy.

9. *Over and Under Relay.*—This game is a combination of Arch Ball and Stride Ball. The players are divided into equal teams and line up in files. The captains stand toeing a line drawn on the floor or ground. Each captain has a ball, Indian club, or other object, which at a given signal he passes over his head to the player behind him. The players pass the ball on down the line, over the head of one player and between the feet of the next. When the ball reaches the end of the line, the last player runs with it to the head of the line and starts it back over his head. This is repeated until the captain is the last in line. He runs forward with the ball, places it on a mark fifteen or twenty feet in front of his line, and runs back to his original place at the head of the line. The team wins whose captain is the first to return to his original position.

10. *Pass and Squat Relay.*—The teams are arranged in files behind a starting line. The captain of each team stands ten feet in front of his file. At the signal the captain throws a ball or beanbag to the first player in his file. The player catches it and throws it back to the captain. Immediately after passing the ball, this first player squats. This continues until all have caught the ball and passed it back to the captain. Any player dropping the ball must recover it and return to his position before throwing it. Throws may be made in any manner. The team which finishes first, with all the members squatting, including the captain, wins.

11. *Simple Dribble Relay.*—The members of each team are lined up, one behind the other, with an obstacle such as an Indian club, a stone, or a stick placed about twenty or twenty-five feet away from the starting point. At the signal the first player in each line dribbles the ball down around the obstacle and back to the line. The second player then takes the ball and repeats what the first player has done. The first team back in its original position is the winner. This relay may also be run with the boys' dribbling a ball with the feet.

12. *Run and Pass Relay.*—The players are divided into two teams of equal number and stand on two parallel lines about thirty feet apart, facing each other. (In the schoolroom they stand in the aisles next to the outside on each side of the room). The first player at the right end of each line has a basketball, and at the leader's command runs around the opposite line and gives the ball to the last player at the end of his team line. The ball is passed up the line, with each player touching it. The player at the head of the line runs as soon as he receives the ball. The ends of the lines should be marked in some way, and the first and last players must have one foot on the marks when receiving the balls. The team wins whose first player first receives the ball after all have run.

For variation, the distance may be increased between the players on the line, and the ball thrown, rolled, or bounced between the players. The runner may throw the ball as soon as he turns the end of the opposing team, but if the catch is missed by the end player, the ball shall be secured by a teammate and delivered to the end player at his position.

13. *Kangaroo Relay.*—The players are divided into two or more teams of equal number. The players are lined up in single file formation behind a starting line. A goal line about thirty feet from the starting line is drawn. The first player in each team is given a ball about the size of a volleyball. He places the ball between his knees and jumps to the goal line without

touching the ball with his hands. If he drops the ball, he must replace it and continue to jump. When he reaches the goal, he takes the ball in his hands and runs back to the starting line and gives it to the next player on his team who stands ready to take the ball and jump in the same way as the first player. This continues until all have had a turn. The first team to have all of its members cross the starting line wins.

14. *In and Out Relay.*—The group is divided into two or more teams. The teams stand in file formation behind a starting line. Directly in front of each team, thirty to sixty feet away, there is a row of three Indian clubs about two feet apart. On the signal, the first boy of each file runs forward, zigzags between the clubs without knocking any over, zigzags back, and then makes a straight run back to his team. He touches the next player's hand and passes to the rear end of his line. The second player should be waiting for this "touch off," with his toe just behind the starting line and with his hand outstretched. The second player repeats the run of the first and so on until all have run. If a club is knocked over, it must be set up immediately by the one who knocked it over. The teams win in their order of finishing, plus consideration of their record on fouls.

15. *Leap Frog Relay.*—The contestants are arranged in files, down in position for leap frog. The last boy leapfrogs over all in front of him, runs and touches the wall, returns to his place touching off the boy directly in front of him. The second boy leapfrogs over all in front, touches the wall, returns and leapfrogs over the last boy to get to his own place and touches off the next boy. In this way each boy goes over every boy in his own line. The line finishing first wins.

16. *Skip Rope Relay.*—The teams are arranged in files ten feet apart behind a common starting line. A turning point sixty feet in front of the starting line is established for each team. The first player in each file is given a rope eight feet long. At the signal, the player jumping the rope skips forward, around the turning point, and back to the starting line. Here he gives the rope to the second player who repeats the performance. The first performer goes to the end of the line. Any player who stops skipping and starts to run must halt and start skipping again before advancing. Each player skips in his turn until all have skipped. The team having its last player first across the starting line wins.

CHAPTER 23

# SWIMMING AND WATER SAFETY PROGRAM

The primary aim of the swimming program in the schools is to teach every pupil in the community to swim well, and to be able to remain afloat for prolonged periods of time. In contrast to the remainder of the high school program of physical education, which is planned primarily for the high school pupils, the swimming program should be directed for the community as a whole, because of the fact that the high school pool is usually the only one in the community, and hence it should be made available, together with instruction, to as many people in the community as possible. Frequently, the high school pool is used all summer by the younger children, and is opened evenings throughout the year to the adults of the community.

The major objectives of the high school swimming program are to teach the basic skills well, to cause the pupils to master the fundamental strokes—the front and back crawl strokes, the Trudgen stroke, the side stroke, the breast stroke, and the elementary or resting back stroke. In this mastery of strokes the swimmer should acquire (1) the ability to swim short distances with the arms alone or with the legs alone; (2) the ability to swim short distances while clothed, or even while clothed and carrying light objects; (3) a fair knowledge of water safety and of personal defense in the water, particularly as it applies to defense from being seized by a drowning person; (4) a fair knowledge of the methods of rescuing people in peril of drowning, or of reviving people who have apparently drowned; and (5) some experience in competitive swimming for the recreational values inherent in this type of competition. The instructor should attempt to discover competitive interests and special abilities of the swimmers in swimming classes.

*Facilities*

For the best possible utilization of swimming pools a number of administrative practices is involved.

(1) The pool and facilities should be inspected daily, and all necessary repairs and replacements made promptly.

(2) The shallow areas should be roped off in order that beginning swimmers may be discouraged from getting into water beyond their depth.

(3) If the swimming is conducted out of doors in a stream or lake, the instructional area should be at a place where there is no sudden dropping off in depth from that safe for beginners. There should, on the other hand, be adequate depth beneath the diving board for the individual to dive (8 to 12 feet).

(4) In indoor pools the temperature should be from 77 to 78 degrees Fahrenheit.

(5) Adequate flotation aids should be provided. The best of these is probably the type of cans which have been introduced in recent years by the Naval Pre-Flight Schools. The success of these schools in teaching swimming with cans has revived the interest in teaching with such aids. These floats are made from two number eight fruit cans soldered together at the ends. Two loops five and a half inches apart are made with wire, and the cans are fastened to the chest with a strap which passes through these loops. The cans are painted with a water-proof paint to prevent their rusting. When using these floats, the swimmer has more confidence, than when he is without such an aid, can swim for a much longer period of time, and the whole pool—the deep end as well as the shallow end—can be used even for beginners' classes. Since the swimmer can take his time, he tends to

swim with better form and greater ease and relaxation, and to repeat the strokes many hundreds more times than he does when trying to keep himself up without floats. Flutter boards are also useful, especially in the teaching of the crawl kick.

(6) Life-saving equipment, such as buoys and long poles, should also be on hand.

*Administration*

*Staff.* The teacher and his assistants and leaders should work out definite policies for organizing the teaching of swimming. The methods to be used should be agreed upon, including the form of each stroke as it is to be taught by each instructor or leader. The specific assignments of each staff member should be clearly understood, as well as the time schedule for each person to be on duty. The rules, which should be posted, should be clearly understood and enforced.

*Sanitation.*—The sanitation of the pool should be cared for by those designated for that purpose. In many communities the office of public health will care for the routine tests of the bacterial content of the pool. These tests should be made twice a week.

The floor around the pool should be washed frequently (preferably daily when the pool is being heavily used) with a disinfecting agent strong enough to kill fungi.

Hair strainers and filters should be checked regularly.

Foot baths should be cleaned and refilled regularly with one of the approved foot disinfecting agents.

Students with colds, foot infections, open sores, or who are wearing bandages should be forbidden to use the pool until their infections have cleared up.

Students should be required to take a lukewarm shower, without suits, using soap, before entering the pool.

Street cloths and shoes should not be worn in the pool area.

Chewing gum should be removed.

*Safety precautions*—The following safety precautions should be taken:

(1) In indoor pools the lighting should be sufficiently strong to enable the boys under the water to be clearly seen.

(2) The surface along the side of the pool should be of non-slippery construction.

(3) The rule of no running and of no games on the bank should be strictly enforced to prevent accidents due to slipping and falling. This rule should apply to the entrance of the pool as well as to the immediate surrounding surfaces.

(4) Games in the swimming area should be carefully supervised. Pushing others into the pool, or indiscriminate ducking should not be permitted, especially in beginners' classes.

(5) Diving boards should be located where the water at the point of entrance is at least eight feet deep. In outdoor bathing beaches, the water under the diving places should be carefully examined to determine that there are no obstructions or underwater obstacles. (The diving board should be one meter high for the low boards, and three meters high for the high boards.)

(6) Swimming in pools or streams known to be unsanitary should be prohibited.

(7) Swimming alone, except in an emergency, should be prohibited. A lifeguard should always be present.

(8) Lifeguards should watch especially closely the areas in the region of the diving boards, that of the ladders into and out of the pool, semi-deep water where beginning swimmers are likely to suddenly get out of their depth, and deep water.

(9) The boys should be taught never to call in fun for help.

(10) Life guards should be well qualified for their work by training ading to the Red Cross Life Savers' award. They should be strong swim- ers, and well versed in methods of life saving and resuscitation.

(11) In the case of an accident, the person in charge should proceed follows: (a) Rescue the victim. (b) Send someone at once for a physician. ) Administer artificial respiration. (d) Send for blankets, warm wraps, c., to keep the victim from becoming chilled. (e) Notify the school ad- inistrative officer at the earliest opportunity. (f) Make a full report in riting immediately after the incident is closed.

## SWIMMING TESTS

The swimming tests are designed to classify the students as to their esent swimming abilities and to motivate a measure of progress in swim- ing. These are minimum standards, and every effort should be made to prove swimming ability beyond these minima.

*ginning Swimmers' Test*

Jump or dive into the water from the bank of the pool and swim fifty rds, using any stroke. The boys failing this test are classified as *non- imimers* and are assigned to a class for beginners. Those who pass this st but fail the intermediate test are classed as *elementary swimmers* who ed additional help and coaching on swimming fundamentals.

*termediate Swimmers' Test*

1. Jump or dive into the water from the bank and swim one hundred rds, using at least three different strokes selected from the back stroke, le stroke, breast stroke, front or back crawl strokes or Trudgen stroke, ch for at least twenty-five yards.

2. Stay afloat at least ten minutes.

Note: These two elements of the test may be taken simultaneously, e swimmer covering one hundred yards during the ten minutes he is afloat.

3. Swim thirty feet under water.

Only swimmers who pass the beginners' test should take the intermediate st. Those who pass this test are classified as *intermediate swimmers* who e ready for instruction in advanced swimming and life saving.

*lvanced Swimmers' Test*

1. Swim 220 yards, or for ten minutes continuously, using back, breast, d side strokes, each for at least 50 yards; or, as an alternative, keep afloat twenty minutes.

2. Jump into the water, feet first, and swim under water 25 yards, aking water to breathe not more than twice.

3. Remove trousers in the water, and inflate them for support.

4. Approach a boy of approximately equal size in the water, demonstrate e break or release from either a front or back hold, and then tow the boy enty yards with any carry.

Swimmers passing this test may be considered to be *advanced swimmers* d able to care for themselves in emergencies.

*pert Swimmers' Test*

1. Swim 880 yards, or swim continuously for forty minutes.
2. Swim 440 yards wearing shirt and trousers.
3. From a surface dive, swim 50 feet under water.
4. In deep water, demonstrate breaks from both front and back neck lds, and tow the subject 50 yards with one of the standard carries. Those ssing this test shall be classed as *advanced swimmers.*

*Maintenance Check Test*

Swim 440 yards in fifteen minutes. This test should be taken every three months by all swimmers who have passed the expert swimmer's test. If the test is failed, more time should be spent in endurance swimming.

In swimming tests many more boys can be tested at one time if they are swum around a double lane with ends about ten feet from the ends of the pool. This greatly simplifies the administration of the test, especially if the tests involve long distances.

*Introduction to the Teaching of Swimming*

There should be a careful preparation of all administrative aids for teaching. For example, testing schedules should be made out and posted. Arrangements should be made for keeping records of attendance, of test results, and of progressive achievement. Arrangements should be made for organizing the classes according to the demonstrated abilities of the pupils, rather than according to vacant periods alone. Schedules should be prepared for regular progressive instruction. In addition, there should be one group which is sometimes called the "subsquad", which is made up of boys who *fail to make normal progress.* Not all of these are beginning swimmers. These are boys who need additional time for instruction. Periods for recreational swimming should also be provided.

All beginning and elementary swimmers should be given certain basic instruction. The non-swimmer and the beginning swimmer are often afraid of the water because it exerts pressure on the body, and hampers the freedom of breathing. The beginning swimmer is frequently disturbed because he cannot breathe when his face is in the water. He feels unnaturally light in the water, and finds it difficult to stay on the bottom and to return to a stand on the bottom after having assumed a horizontal position. It is essential therefore that the swimmer be (1) oriented with regard to being at home in this new element, (2) taught the facts relating to the buoyancy of his body in the water, (3) taught to open his eyes under water, (4) given instruction in relaxation in the water, (5) given instruction and practice in methods of proper breath control while in the water, and (6) taught the facts concerning breathing while swimming, concerning resistance in the water, and concerning flotation.

*Instructing the Beginner*

Because of the fears referred to immediately above, the beginning swimmer frequently becomes somewhat panicky and tries to climb high out of the water with the result that he tenses all of his muscles, exhausts himself quickly, and creates general discomfort for himself. He must therefore be convinced of two things: (1) that he can breathe comfortably while in the water; and (2) that he can stay on the surface if he relaxes, lies on the surface, and keeps moving forward, however slowly. Hence the instructor may well proceed as follows: (1) The boys should be divided into pairs, or "buddies," who will work with each other. They should stand about four to six feet apart in the water. The fact that the water will hold them up if they stay low in the water should be explained to them. The boys should then be given practice in buoyancy and flotation, combined with practice in breathing.

(2) They should be instructed to bend forward at the waist and to slide the hands down the fronts of the thighs and the legs until they are floating face downward in the water, with the hands clasping the ankles or the knees. In this position they should open their eyes and get used to seeing in the water. This position is called the "jelly fish float." (See Fig. 94) Half of the boys should practice this at one time while their buddies stand by to help them regain their feet if they exhibit any difficulty.

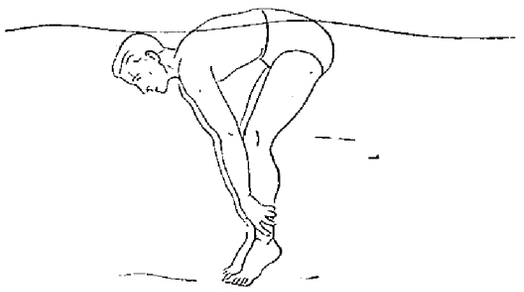


Fig. 94

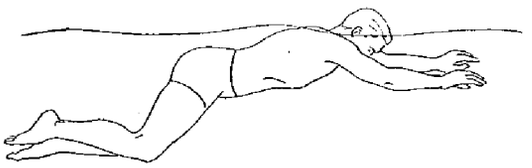


Fig. 95

(3) The boys should then prepare for water breathing exercises. At ıe command "Ready" each boy inhales deeply and quickly through the outh only, and then slowly exhales. At the command "Go" each boy lowers .s head, eyes open, beneath the surface of the water, and walks toward .s partner. When he reaches his partner, he raises his head above the ater and again assumes the standing position. This exercise should be ıpeated until all the boys do it easily.

(4) The group should then stand in a line facing the instructor. Each ›y should place his hands on his hips, thighs, or knees until his chin is ıst above the surface. Each boy should then inhale quickly and deeply ırough the mouth only, lower his face into the water at once so that his 'es are just beneath the surface, then forcibly exhale all of the air in his ngs through both the mouth and the nose, and then raise the head again ıd inhale. This exercise should be repeated until the boys can do it easily.

(5) The group should then stand in a line with about three feet between ıddies. Each boy then extends both arms in front of him on the surface ! the water. He then inhales quickly and fully through the mouth, lowers .s face into the water, holds his breath, and then shoves off from the ›ttom, allowing his body to stretch out fully upon the water. (See Fig. 95) e maintains this position for a few seconds only and recovers to the anding position before his forward momentum is lost. To recover to the anding position he doubles his knees under his body and at the same me sweeps his arms downward. This movement brings the body to the ›right position. He then extends his legs downward and stands up. (See igs. 96a, b, c) This exercise, when mastered, should be repeated with ıch boy exhaling fully under the water through both the mouth and the ›se when gliding forward, and recovering the standing position again as ›on as all his air is expelled. This procedure should be repeated until all ıe boys do it easily.

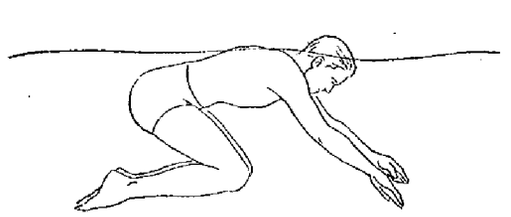


Fig. 96a

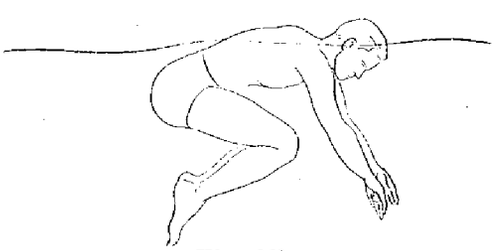


Fig. 96b

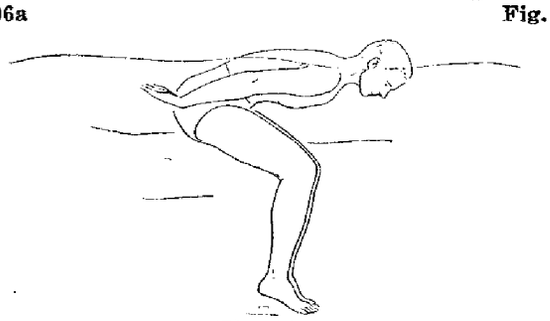


Fig. 96c

(6) The group should stand in a line with about three feet between each two boys. Each boy should then inhale deeply, hold his breath, and shove off from the bottom while lying with his back on the water, head drawn down against the chest, back straight. He should hold this position for a few seconds only and then recover by doubling up and throwing his arms forward until his body assumes the erect position, and then he should stand up. In performing this "floating" exercise, the arms should be relaxed along the sides, with the palms of the hands down and the entire arm just beneath the surface of the water. This exercise should be repeated until each boy can lie with his back on the water and float comfortably for a few seconds. (Even those rare individuals who cannot float motionless are able to float flat in this position for a few seconds because of the body momentum along the surface.)

(7) Then each boy should stand in water about 4½ feet deep and walk backward in the water, lying on his back, with the face out of the water. (One boy of the pair should see to it that his partner's head does not sink beneath the water.) He should then walk backward about fifteen feet and recover. This exercise should be repeated with a sort of running, springing step. The boy should lie with his back in the water and kick with his feet in a kind of pushing movement, first forward, then downward, with the forward part of the sole of the feet, with first one foot and then with the other. This is similar to the kick of the back crawl stroke. When the boy's speed slackens, he should recover his footing. If the water is so deep that the boys must use floats, they should simply lie on their backs, with the cans attached, and use their legs as directed.

(8) The next step is to add a "finning" movement of the hands. This is a pushing movement of the hands which starts at about the level of the hips and scoops the palms of the hands outward and downward towards the thighs.

(9) In all practice in the water, the boys should relax as much as possible.

(10) The fact should be explained that since the human body is so buoyant, almost no effort needs to be placed on trying to remain afloat; rather the effort should be made to propel the body forward through the water. Since the chest is slightly higher in the water than the rest of the body, this forward propulsion results in the body *planing* upward and forward.

(11) The fact should be explained that speed is dependent upon the amount that the propulsive force exceeds the resistance in the water. Hence speed can be improved by increasing the propulsive force and also by reducing the resistance. To reduce the resistance, the body should be as straight and streamlined as possible in the water. The strokes should be executed slowly enough and gently enough that the swimmer can continue for a long time without fatigue. The use of even a little too much force results in very rapid exhaustion.

*Introduction to the Teaching of Fundamental Strokes*

There has been a tendency recently, in teaching swimming to boys, to place almost all of the emphasis upon the crawl stroke. Except in competitive swimming for speed other strokes are of much more importance. Treading water, the elementary or resting back stroke, the side stroke, the breast stroke, and the front and back crawl strokes, and the Trudgen stroke are important in about that order. All of these strokes should be taught to the boys until they have had an opportunity to master them reasonably well, and then the boys should make up their own minds as to which strokes they prefer.

*Planning the Instruction*

When planning instruction, the teacher should (1) determine the total amount of time available, (2) determine the number of skills that can

robably be taught in that length of time—considering the abilities of the upils, (3) formulate a unit of work that he feels can be covered in that length f time, and (4) lay out specific day-by-day instructional programs.

*)rganization for Teaching*

1. Test all the boys and then classify them into homogeneous groups or instruction.

2. Arrange the boys in the appropriate part of the pool (shallow end or the beginners, and deep end for intermediate and advanced swimmers). f the numbers are small, all the boys in one class may push off in one group. f the numbers are large, the boys may count off by twos or fours, one roup pushing off at a time. For example, all number ones push off first, hen number twos, etc. For endurance swimming around the pool, floats ıay be used to mark the "track" around which the boys swim.

3. Arrange the class so that all may hear and see.

4. Present the material as simply, clearly, and concisely as possible, hen practice. There should be a minimum of talk and a maximum of wimming.

5. Outline the program for the day.

6. Where it will be helpful, use dry-land practice drills for the boys o learn the skills.

7. The boys should be paired for mutual assistance, and if possible, hould work together in every practice period.

8. If the time spent in the pool per week is too little for adequate ıractice in the water, the instructor may institute intensive practice in dryland swimming," or the practice of the various forms out of the water. ome of this instruction will precede water training in each stroke even vhen the boys are to be given training in the water.

9. The use of floats in teaching non-swimmers or beginners to swim s strongly recommended. The most useful device is the "can" (see p. 211). hese cans are strapped on the side that is uppermost—on the lower chest f the boy learning the back stroke, on the back of the breast stroker, etc. he use of the float gives confidence, and the boy strokes with much more kill than would be the case without the float. He may be told to stroke or a prolonged period of time—say half an hour—in this way learning the troke through much repetition and learning to stroke easily, thus conserving is strength and developing endurance while still a beginner. If floats are ısed, no attention need to be given to the depth of the water and to segre- ating the various groups of swimmers, and safety is thereby readily secured. Vhen the boy can swim a quarter mile with the cans, he can be readily rusted to swim without them. If the instruction pool or stream has little hallow water, the use of floats is essential. If floats are used, all funda- nental strokes should be learned together, with the mastering only of the lements of each stroke before progressing to the next one. The swimmer vill then change from one stroke to another as he swims for prolonged periods f time.

10. A certain percentage of non-swimmers exhibit a fear of entering he water. Military experience has shown that it is best to ignore their omplaints and to assume that they will learn to swim with the others. 'requently, simply placing them in the pool for half an hour in water up o their necks, accelerates their recovery from their fears.

11. Treading water is a skill that parallels the learning of swimming trokes. It is a deep water skill and uses the same leg strokes as those ısed in the back and breast strokes. Hence treading should be introduced s these strokes are learned. For details, see page 223.

*Floating*

A large proportion of boys can be taught to float, and this skill should be taught early. In teaching floating, the instructor should first ascertain whether or not the boy is a floater. The boy is told to assume the position of the jellyfish float (see p. 214). If he stays up with any portion of his back above the surface, he is a floater. If he sinks, he cannot be taught to float, and must be taught to stay up by means of gentle arm and leg movements.

*The Balanced Float*—Most boys are heavy legged, and cannot float in a horizontal position. To learn to float at all, the boy should stand in water about shoulder deep, take a full breath, lean backward gently, arch the back, tip the head backward, and raise the arms sideward and somewhat beyond the head. He should then thrust his feet gently from the bottom and lie as relaxed as possible in the water. No attempt need be made to float horizontally, for the legs will rise if they are buoyant enough. (See Fig. 97)

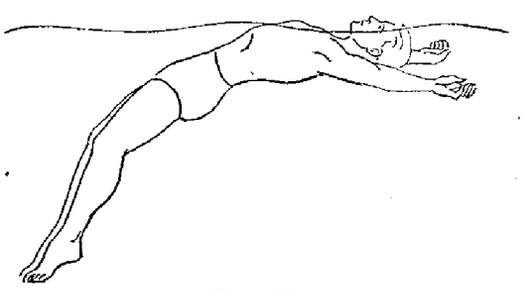


Fig. 97

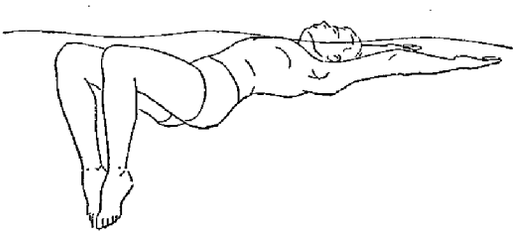


Fig. 98

If the boy's feet will not remain off the bottom of the pool, two things may be tried. (1) He may bend and separate his lower legs in which case he may float satisfactorily. (See Fig. 98) (2) He may move out into deeper water where he may float vertically with only the face above the water. This is not usually a satisfactory or comfortable position; hence if the boy does not float comfortably in the semi-horizontal or horizontal position, he should supplement the float with gentle arm or leg movements, or with both. The simplified leg movement is an alternate push with the soles of the feet. The foot is extended and pushed down for eight to twelve inches, then pulled back a bit with the knees slightly bent, and again thrust out. It is much like walking up stairs with the feet close together. The appropriate arm stroke is "finning," described below.

*Swimming on the Back*

The inexpert swimmer can swim on his back for a longer period of time than with any other stroke. This type of swimming has several variations.

1. *Finning*—This is the easiest and most natural of the two-arm movements on the back. The arms are first extended by the sides, and are then drawn up about a foot, when the hands are thrust out and then downward toward the feet in a sort of pushing movement, supplemented by a sort of fish tail flip of the hands and wrists. This movement may be amplified into a sculling movement.

2. *Sculling*—Lying on his back, the swimmer starts the sculling movement with the arms by pressing the hands outward, with the wrist bent backward and with the little finger nearer the surface than the thumb. The hand is then swept inward toward the thigh, with the wrist still bent backward, but with the thumb closer to the surface than the little finger. The movement is with the hand and wrist primarily. It is like sculling with an oar. There is little lost motion. The range of motion is from fourteen to twenty inches.

3. *The Elementary Back Stroke*—With the swimmer lying on his back, an extended finning movement is combined with a so-called "frog kick" on the back. The two parts of the stroke will be described separately. (See Figs. 99a, b, c, d, and e.)

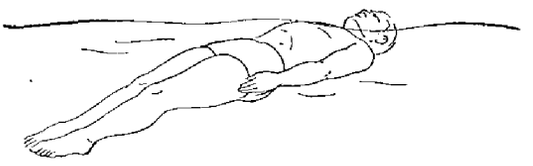


Fig. 99a

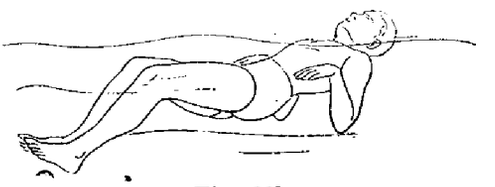


Fig. 99b

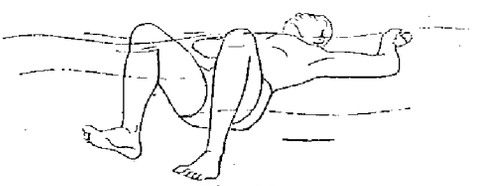


Fig. 99c

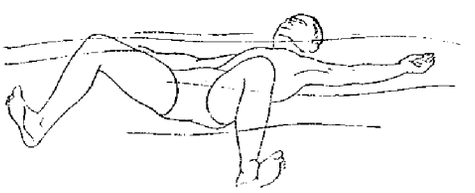


Fig. 99d

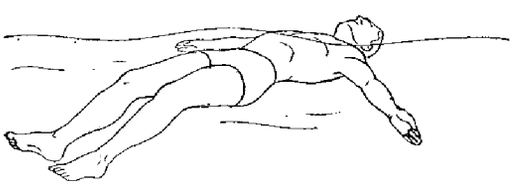


Fig. 99e

a. The arm stroke of the elementary back stroke may be one of two types.

(1) The usually accepted method is to start with the arms by the side, then to slip the hands up the fronts of the thighs, and up the abdomen and the chest until they rest on the chest near the shoulders. The hands and the arms are then thrust out sideward and about twelve inches above the level of the head, and then pulled sideward and downward to the sides. In doing the strokes in this manner, the beginner tends to drop his hips and thus slow his progress. If the swimmer does this, he should shorten the arm stroke by keeping the elbows near the hips, and working the stroke only with the hands and the forearms at the sides of the hips until he masters the skill of swimming with the body straight in the water.

(2) A second method may be used when the swimmer is in no hurry and needs support in the trunk and shoulders. Here the *straight arms* are swung sideward and upward, palms down, with the little fingers leading and slightly nearer the surface than the thumb. When the arms are just beyond the shoulder level, the palm is turned toward the feet and pulled sideward and downward to the thighs. The upward sweep of this stroke retards progress slightly, but it compensates for this by giving support to the thorax, permitting the head to remain farther out of water than would otherwise be the case.

b. The leg stroke of the elementary back stroke is usually spoken of as the "frog kick." The stroke is started with the legs straight, the knees separated sideways and bent, the feet thrown outward and backward with a strong *inward* rotation of the hip joint, and the feet are then thrust out sideward to a wide side straddle position with an accompanying *outward* rotation of the hip joint, until soles of feet are facing each other. The legs are then brought together forcefully. The knees should not be raised forward any more than necessary.

c. *Coördination of Arms and Legs.*—In the elementary back stroke, the starting position is with the arms by the sides and with the legs straight. The arms and the legs begin their movement at the same time,

and begin their stroking at approximately the same time. The leg stroke is completed earlier than the arm stroke; hence the last part of the movement is with the arms. If the limited arm stroke is used, the arms and legs finish at the same time. The swimmer then glides for several feet in as complete relaxation as possible. Inhalation is done through the mouth on the upward movement of the arms, and exhalation through the mouth and nose on the downward movement.

d. *Learning the Back Stroke*—After the boy has developed confidence in the water and has learned to do the back glide, he should stand in water about 4 to 4½ feet deep, and push off backward with a jump, and begin by finning or by using the sculling arm stroke with the frog kick. The hips should be kept close to the surface. The head should not be so far backward that water runs into the nose. The arms should always be under the water.

*Land Drills*

The boy should be given practice in the coördination of arms and legs before going into the water. He should practice the arm strokes both standing and while lying on his back. The leg stroke may first be practiced with the boy seated on the floor, and leaning backward, supporting the trunk on the elbows. Here the boy can see his leg movements. The movement of one leg may also be practiced while the boy is standing, and this can be combined with the arm movement. If benches are available, the boy may lie on his back on the bench, and practice arm and leg movements at the same time.

*The Breast Stroke*

This is one of the most useful strokes for swimming. It provides good visability, is not too tiring, and is useful in swimming through debris, through oil covered waters, swimming with clothing on, swimming with a load, and in pushing a tired swimmer along using the tired swimmer's carry. It is not an easy stroke to master, but it should be thoroughly learned. (See Figs. 100a, b, c, d, e, f.)

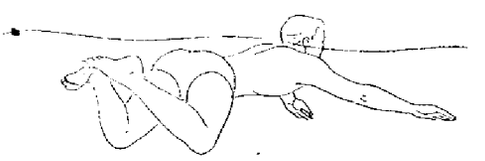


Fig. 100a

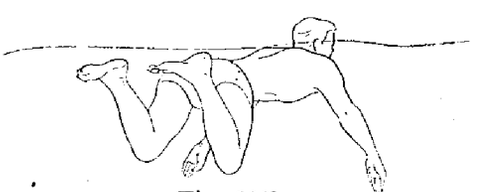


Fig. 100b

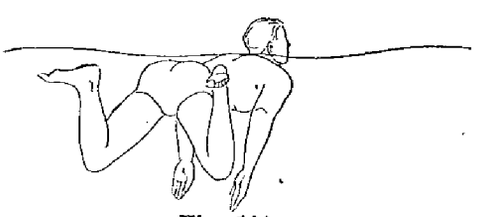


Fig. 100c

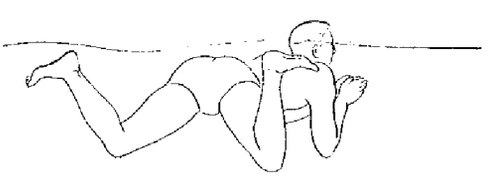


Fig. 100d

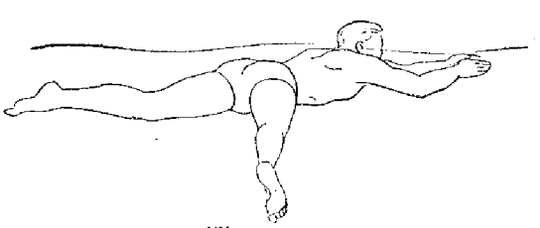


Fig. 100e

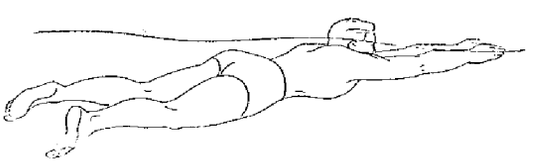


Fig. 100f

1. *Arm Movement*—From a position of full extension in the water, arms pushed out ahead, the palms are turned outward and the arms pull outward, sideward, and slightly downward until the hands are opposite the shoulders and slightly below them. The hands are than sliced in to the

fronts of the shoulders, with the elbows against the sides. The arms are then thrust forward, palms down and slightly outward. The hands should be thrust straight forward from the shoulders.

2. *The Leg Kick*—This is much like the frog kick on the back. The knees are drawn up sideward rather than forward, with the heels trailing until near the limit of the upward motion of the knees, which is near the limit of thigh "split." Then the lower legs are flexed at the knees, the heels lifting higher than the hips. The legs then thrust sideward and outward, and then are squeezed together. The soles of the feet should be facing as much as possible during the thrust and the squeezing together.

3. *Coördination of Arm Stroke and Leg Kick*—The whole stroke movement is in three counts. a. The arms begin their pull, and near the finish of the arm pull at shoulder level, the knees draw up. The arm pull keeps the resistance created by the knees from unduly slowing the swimmer's progress. b. As the arm pull is finished and the hands thrust forward, the legs kick out and pull together. c. The swimmer then glides through the water until the momentum begins to fall off. Then the next stroke begins.

4. *Breathing*—It is possible to breathe at any time in the breast stroke, but the usual way to breathe is to inhale through the mouth with the arm pull, and to exhale through mouth and nose during the finish of the leg kick and the glide.

5. *Body Position*—In swimming the breast stroke for speed, the boy must keep his trunk and legs near the surface. This stroke, however, is much more tiring than a position with the trunk and legs projecting diagonally back and down at an angle of from twenty to thirty-five degrees. The latter method is slower than the former, but is easy to sustain, and is not tiring.

6. *Land Drill*—In land practice, the arm movement may be practiced in a standing position with the trunk bent forward ninety degrees. If the boys have small benches upon which they may lie, the whole stroke may be practiced. The leg kick is sufficiently like that of the back stroke frog kick that practice in that stroke will carry over to the breast stroke kick. The kick can be practiced with one leg at a time while the boy is standing, and combined with the arm stroke.

*Side Stroke*

This stroke is an easy one to learn and to swim. If slight modifications are made, it is useful in towing others, and may be used when one arm is injured, and to carry an object in the top hand out of the water. The swimmer swims on one side. Usually he begins on the side on which it feels most natural to swim. After learning on that side, however, he should learn to swim on the other side as well. The stroke will be described as executed on the right side. To those who swim on the left side, all directions will be reversed. All swimmers should eventually learn to swim on each side. (See Fig. 101a, b, c, d, e, f.)

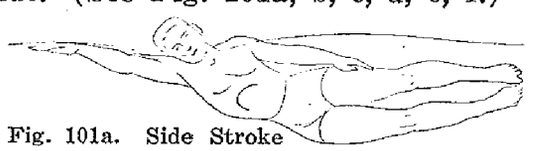


Fig. 101a. Side Stroke

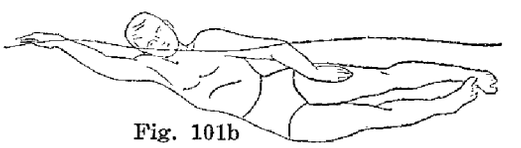


Fig. 101b

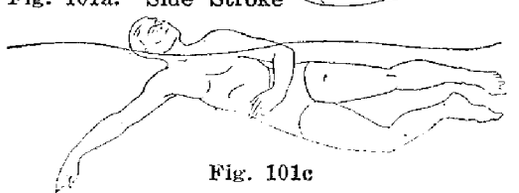


Fig. 101c

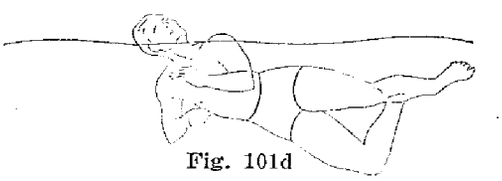


Fig. 101d

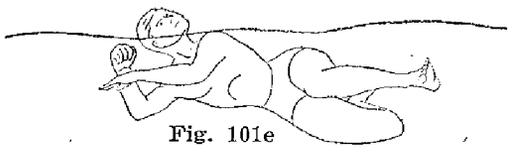


Fig. 101e

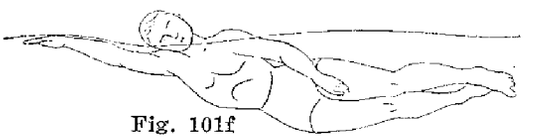


Fig. 101f

1. *Arm Stroke*—The fundamental beginning position is lying on the right side, the right arm extended in a line with the body beyond the head. The left arm is extended backward by the left thigh. The right arm pulls downward with the elbow straight, and continues until it is straight down from the shoulder. The elbow is then flexed and pulled in toward the side, and the hand turns the palm toward the face, and is then thrust forward to the original extended position. The left arm bends at the elbow, and the hand is thrust upward in front of the chest, and pushes forward and downward in front of the chin or face. Here it catches the water and pulls backward to its original position by the left thigh. The left hand starts forward just in time to meet the right and pass it just at the neck or face. The coördination is as though the right hand were to pull a handful of water down and hand it to the left hand, which carries it on to the end of its stroke.

2. *The Leg Kick*—The leg kick is the "scissors kick," in which the feet are first drawn up, with the left foot in front about twelve inches, until the knees are bent to a right angle. The left knee is then straightened, and the left foot is thrust forward, downward, and then backward in a semicircular sweeping motion. At the same time the right knee is straightened, and the right foot is thrust backward, downward, and then forward in a sweeping motion, resembling a kick. The double leg stroke resembles the closing of a pair of scissors cutting through a large bite of water. The left foot presents the sole to the water during the thrust, then points the toes back during the backward sweep. The right foot is extended throughout the stroke. The legs come together at the end of the stroke and remain in line with the toes pointed downward during the glide.

3. *Coördination of Arms And Legs*—From a position with the right arm extended forward, the left arm by the left side and the legs straight and together, the stroke is begun with the downward pull of the right arm. As this arm pulls downward, the left arm starts to thrust forward, and the knees draw up to begin the kick. The catch and pull of the left arm and the kick of the legs coincide with the completion of the pull of the right arm and its thrust forward to the gliding position.

4. *Inverted Side Stroke*—The side stroke may be changed so that the swimmer lies about half on his right side and half on his back. The arm pull is the same, but the position of the legs is exactly reversed, the right leg being forward and the left backward. This variation is frequently used in towing a person with the cross chest carry.

5. *The Overarm Side Stroke*—This stroke is exactly like the ordinary side stroke, except that the left arm recovers above the surface, and is thrust into the water about in front of the face. This stroke is somewhat faster than the ordinary side stroke, but sinks the swimmer deeper in the water, necessitating that he breathe rhythmically, inhaling with the pull and kick, and exhaling, usually under the water, with the glide. This form of the stroke is somewhat tiring to swim if the boy is clothed. It is useful in swimming in rough water, and where increased speed is required over a short distance.

*Underwater Swimming*

Underwater swimming is a useful accomplishment in life saving. Two methods are commonly used. These are identical with the breast and side strokes, except that the head is held straight forward. A variation of the side stroke is sometimes used, where the pull of the right arm and the kick of the legs are identical, but the swimmer rolls somewhat on his face and performs a longer reaching stroke with his left arm. The stroke is half way between the form for the side stroke and the Trudgen (see p. 223).

*reading Water*

As soon as the frog and scissors kicks have been learned, methods of eading water should be mastered. The ones most commonly used are as llows:

1. The swimmer is erect in the water, and kicks with the frog kick :actly as in the elementary back stroke. If necessary, the arms may help, ing the movements of finning, or of sculling.

2. The same objective can be accomplished by the use of the scissors ck, either single or alternate (in the alternate kick, the left leg is forward one kick and the right leg in the next kick). The arm stroke, if used, a simultaneous finning or sculling.

3. It is also possible to stay afloat without the use of the legs by suming the position of the balanced or the vertical float, and by sculling ith the hands.

*he Trudgen Stroke*

The Trudgen stroke is the hand-over-hand stroke which is most useful a speed stroke when the boy may be swimming with his shoes on, and e easiest to teach following the strokes already presented. This stroke like the over-arm side stroke, except that the body rolls from the left to e right, and back again, assuming a position in which the axis of the oulders is at an angle of about forty-five degrees to the water when the y is on his right side (body lying on right side and chest) and an angle only about twenty degrees to the water on the left side.

1. *Arm Stroke*—Starting with the body on the right side, and with the gs together, the boy withdraws his left arm from the water and swings forward above the surface of the water, with his elbow slightly bent, and e back of the wrist leading. The hand is placed in the water, palm downard, directly in front of the head, with the elbow only slightly bent. At is time the right arm is pulling through the water and has about reached e right hip, pulling backward. The left arm is now brought down, with e elbow bent about thirty to forty degrees from the straight line, with e hand pulling under the midline of body, and is brought through to a sition almost opposite the left hip when it is withdrawn and begins a new roke. The stroke of the right arm is the same as that of the left, except at it is timed to alternate with the left arm. In slow endurance swimming, ch hand enters the water about as the opposite hand passes the shoulder the backward stroke but does not begin to pull until the opposite hand aches the hip.

2. *Leg Kick*—The leg kick is exactly the same as the scissors kick of e side stroke.

3. *Coördination of Arm Stroke and Leg Kick*—The pull-up of the knees d the kicking motion of the legs are begun just as the left hand is in front the left shoulder on its backward stroke. The kick is completed just as e left arm finishes the stroke and returns to the side. If this stroke is vum rapidly, the arm motion is continuous, and there is practically no ide between strokes such as there is in the side stroke. If, however, the vimmer is swimming for endurance, he rests in the position with the right m forward, the left arm backward, and the legs together, and glides a ort distance before taking up the stroke again. The timing of this glide is actly the same as in the over-arm side stroke. The Trudgen stroke may swum with the head out of water all the time, or it may be swum with e face in the water most of the time as in the crawl stroke. (See below).

*he Front Crawl Stroke*

This stroke is primarily a racing stroke, though when swum by experts can be used for swimming considerable distances. The arm movement

of the crawl is an easy stroke to learn. The leg kick is very difficult to master in its best form, and is not useful for swimming with shoes on. (See Figs. 102a, b, c, d, e, f.)

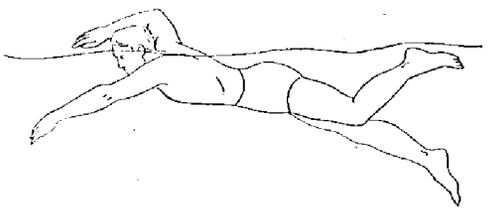


Fig. 102a. Front Crawl Stroke

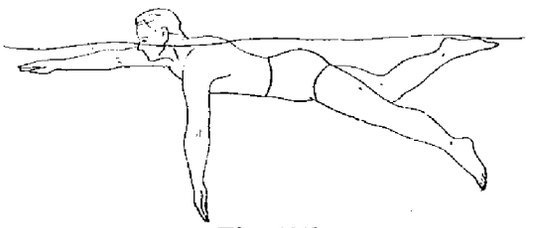


Fig. 102b

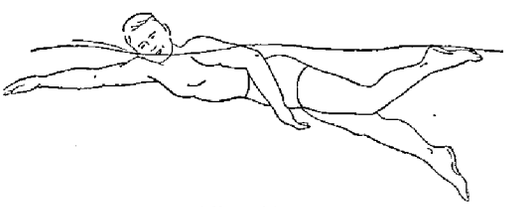


Fig. 102c

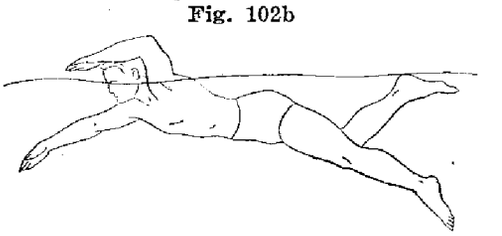


Fig. 102d

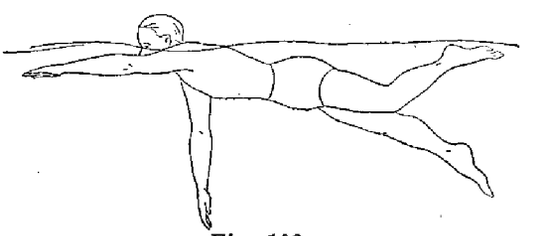


Fig. 102e

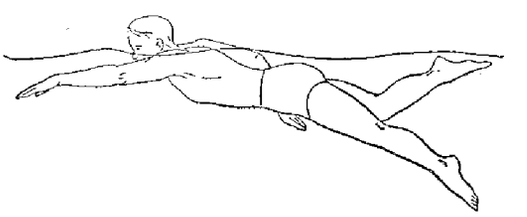


Fig. 102f

1. *Body Position and Breathing*—The body position of the crawl stroke is lying almost chest downward, with a very slight roll to each side. The face is in the water, the water line usually being about at the hair line, except as the individual turns his head to inhale, or as he raises his head to look ahead. Most swimmers inhale on the left side; hence the stroke will be discussed from this position. The swimmer rolls usually not over twenty degrees to the right but may roll as many as thirty degrees to the left. As the left hand comes out of the water, the head is rotated sharply to the left without being raised in the water, so that the chin is just forward of the left collar bone. In this position the swimmer inhales through his mouth. As the left hand enters the water, the swimmer begins exhalation through the nose and the mouth, completing the exhalation just before he turns his head to the left again for the next inhalation.

2. *Arm Stroke*—The arms enter the water alternately just in front of the head. There are two commonly used forms for the arm stroke.

a. In the most commonly used form, the arm thrusts forward just beneath the surface of the water and in front of the head where the arm remains for a moment until just as the other hand is pulled out of the water, when the forward arm begins its downward and backward stroke. This is the form used when the crawl stroke is swum for endurance, as it permits a relaxation of this coasting arm, with a movement of rest.

b. The second method is used primarily in short distance sprinting. The arm is thrust into the water forward and downward at an angle of about forty to forty-five degrees to the surface of the water, entering just in front of the ear, and making the catch the instant the hand enters the water. In this method of swimming each arm enters the water before the other arm has pulled completely through so that when the forward arm is about forty-five degrees forward of a vertical line through the shoulder, the other arm is about forty-five degrees behind the vertical. This is a more powerful swimming stroke, but a much more tiring one. Regardless

/hich of these methods is used, the pull of the hand should be directly
:r the center of the body, and the elbow bent about twenty degrees from
straight line. When the hand passes the hip, the arm is withdrawn
out completing the push backward to the thigh, and the over-water
very is in much the same form as that described for the Trudgen stroke.
)ughout the arm stroke the palm of the hand should be as nearly at
t angles to the surface of the water as practicable; that is, the wrist
ooked at the beginning of the stroke so the "paddle" surface of the
l is at right angles to the line of backward pull. The position of the
t is then so adjusted as to keep the hand at that right angled position
ıe surface of the water.

3. *Leg Kick*—In the beginner's learning of the crawl stroke, usually
legs simply thrash up and down over a narrow range, with toes pointed,
purpose being primarily to streamline the body in the water and to
ent the legs from sinking. This is not the crawl kick as swum by
rts. In the crawl as swum by experts, the legs thrash up and down
ı the hips in a very loose-jointed manner over a range which seldom
eds eighteen inches at the heels. The knee is straight on the up stroke
almost at the top, and the sole of the foot is at an angle of about
/ degrees to the surface of the water. As the leg starts its downward
ke, the knee bends usually about thirty to thirty-five degrees, the toes
pointed backward as much as possible, and the whole leg is moved
ıward in this position until the knee is below the knee of the opposite
at which time the knee is extended. In both up and down strokes the
are close together, the toes are held "pigeon-toed," and the knee and
e are relatively loose. The motion of each leg and foot strongly re-
)les the thrashing of the tail of a fish if the fish were swimming on
ide. There is, if anything, more propulsion from the upward thrashing
ıe lower foot than from the downward thrash of the upper foot.

4. *Coördination of Arm Stroke and Leg Kick*—In almost all crawl
ke swimming, the feet execute six kicks to each complete double arm
ke. As the left arm starts pressing downward at the beginning of the
ke, the right foot starts its downward kick and then starts the upward
on. This is followed by two more such kicks, and just as the right
begins its pull, the left leg kicks downward and the right upward, and
in like manner is followed by two more kicks.

*Back Crawl*

This is primarily a racing stroke. (See Figs. 103a, b, c, d, e.)

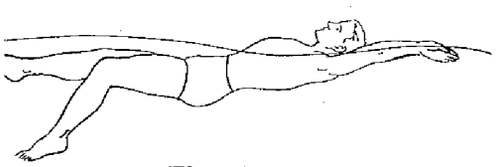


Fig. 103a

Fig. 103b

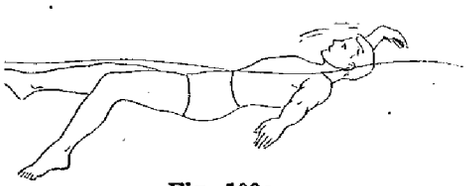


Fig. 103c

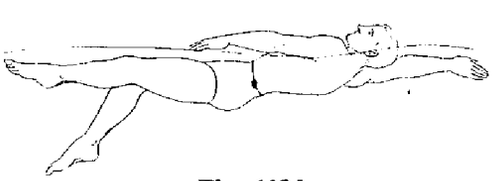


Fig. 103d

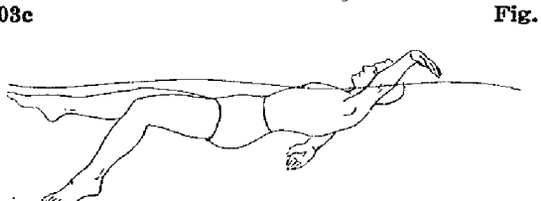


Fig. 103e

1. *Arm Stroke*—With the swimmer on his back, the arms are alternately lifted upward and placed in the water straight ahead of the shoulder on that side, then drawn sideward and downward to the hip, with the hand about six to twelve inches below the surface, and with the elbow straight. The wrist is bent in such a manner as to present the palm to the direction of pull.

2. *Leg Kick*—The leg kick is almost exactly the same as that described for the front crawl, except that there is a greater emphasis on the backward and downward motion of the foot than on the forward and upward motion.

Methods of conditioning of swimmers for competition, the techniques of fancy diving, and the methods used in life saving are beyond the scope of this mannual. Adequate references to such manuals as are helpful for this purpose are given in the bibliography on page 295.

# PART IV

# STURE TRAINING, AND CORRECTIVE AND SPECIAL PURPOSE EXERCISES

## CHAPTER 24

# POSTURE TRAINING

Good posture has many values. First, a person is often judged by his ›pearance. A person who habitually has a good posture and walks with spring in his step tends to make a better impression upon his prospective ıployers than does a person with a poor posture. Second, a person with a ›od posture tends to have better morale than does a person with a poor ›sture. When a person feels well, he tends to have a better posture than ıen he does not feel well; and when a boy feels bad, he tends to slump. lso, however, when a person has a good posture, he tends to feel well and ›sitive, but when he has a poor posture, he tends to feel discouraged and gative. Hence, throughout the school program, the physical training achers should endeavor to promote good posture.

Contrary to popular belief, there is no "best posture" that is correct r all people. The physical architecture of people differs widely. Some ople are born with an inherited bony structure quite different from that others. To develop the best posture for any given individual, therefore, rtain general principles intelligently applied both to the group as a whole ıd to each person must be relied upon.

The boy should be taught what good posture is and how it may be veloped. Frequently he *feels* more natural while maintaining a bad pos-re than while maintaining a good posture. Many boys have a misconcep-›n as to what constitutes good posture, and, for example, arch the lower .ck and thrust out the chest unduly, or perhaps they spring their knees .ckward and throw out the feet to an angle of forty-five degrees.

Perhaps as satisfactory a method of teaching good posture as any is train the boy, first, in carrying a weight of ten to twenty pounds on the own of his head. As he pushes this weight upward, slightly tightening s abdominal muscles and pulling his shoulders to the back instead of ılding them forward ("hang your arms on your back, not on your chest"), will be in good posture.

Second, he should be taught to assume this posture without having e weight on his head. He should be taught to notice how he *feels* while anding in this position: in other words, he should develop a kinesthetic eling for good posture. If possible, he should be able to see himself in a rge mirror.

Correct posture is characterized by a freedom from unnecessary tensions, ıd by balanced body segments. In correct standing posture, (1) the head erect, with the chin drawn in and the neck erect; (2) the abdomen is ıld in and flat; (3) the chest is up so that the sternum (breast bone) is e part of the body farthest forward; (4) the shoulders are backward ıd downward, not tensed, and the arms hang relaxed; (5) the muscles the buttocks are slightly contracted, and the pelvic (hip) tilt is decreased; ›) the knees are straight, but not tensed; (7) the medial borders of the et are approximately parallel. This position must be the basis of all tivity, for all muscular exercise is done with the greatest efficiency from correct posture. Exercise done from a bad posture serves only to accentuate ›stural defects. Here the major emphases are upon the erectness of the ıad and the spine, the flattening of the abdomen, the carrying of the arms ıd shoulder girdle on the back rather than on the chest, and the correct ›sition of the feet. These parts—head and spine, abdomen, shoulder girdle, ıd feet—dominate all postures for all purposes.

Regardless of the amount of exercise and instruction, boys will assume ›od posture habitually *only if they want to.* Hence, *motivation* is especially ıportant.

1. At the beginning a short talk, illustrated if possible, should be given on reasons for the cultivation of good posture, and at the same time the teacher should demonstrate what a good posture is and give methods of attaining it.

2. The instructor should himself at all times be an excellent example of good posture.

3. The instructor should be enthusiastic about good posture: he should "sell it" to the boy.

4. Where possible, visual aids should be utilized—a few pictures of good posture, a few signs around at familiar places to remind the boy to emphasize good posture. These devices may help in motivation.

5. The boy should be complimented when he shows excellent posture and be reminded, without being nagged, when he exhibits poor posture. The instructor, where possible, should use a bit of humor in reminding the boy of his need to improve his posture.

6. Posture judgments may help in motivating good posture. The four posture silhouettes (see Fig. 104) are highly valid, and may well be used

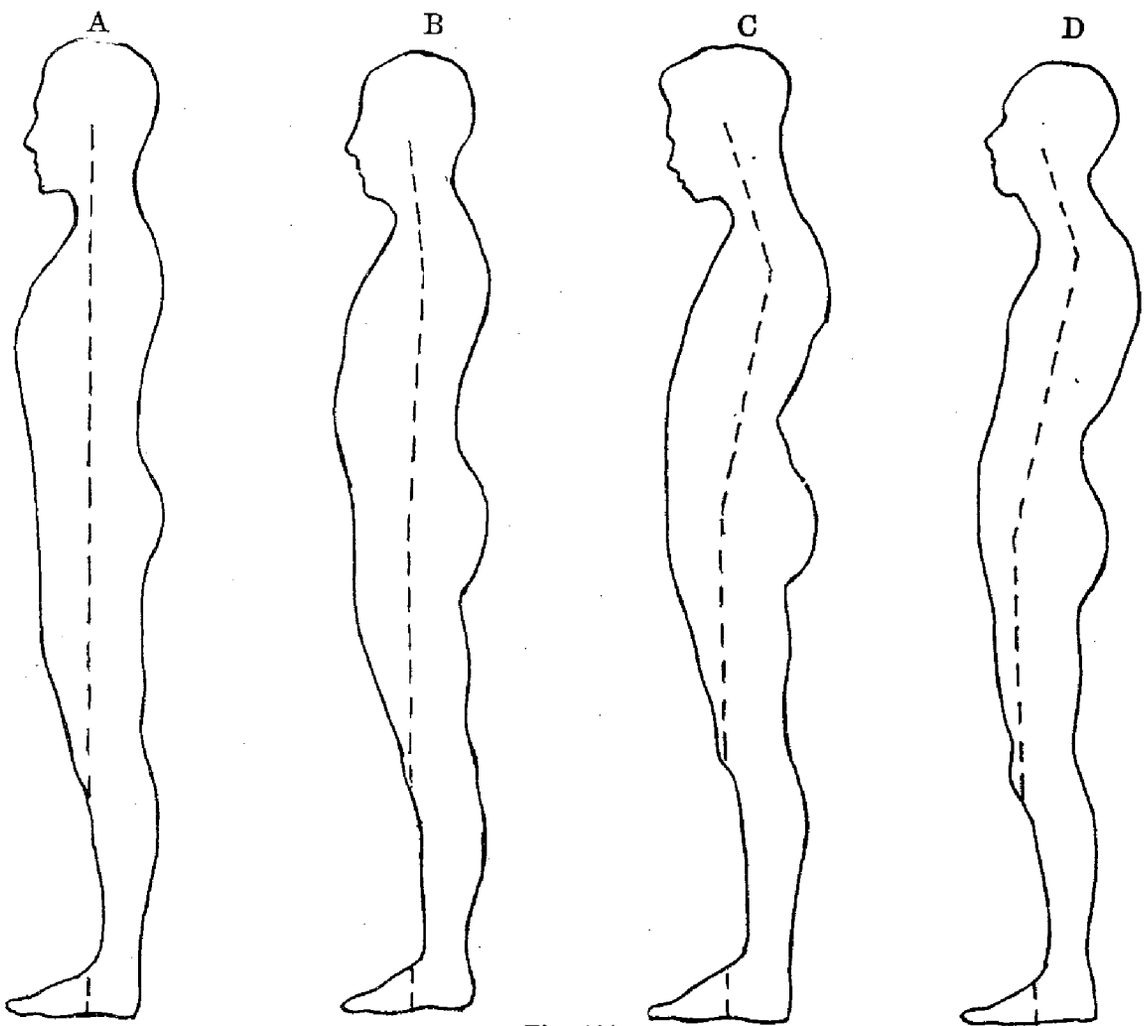



Fig. 104

| GOOD | FAIR | POOR | VERY POOR |
|---|---|---|---|
| 1. Head, trunk and thigh in straight line. | 1. Head forward. | 1. Relaxed (fatigue) posture. | 1. Head forward badly. |
| 2. Chest high and forward. | 2. Abdomen prominent. | 2. Head forward. | 2. Very exaggerated curve upper back. |
| 3. Abdomen flat. | 3. Exaggerated curve in upper back. | 3. Abdomen relaxed. | 3. Abdomen relaxed. |
| 4. Back curves normal. | 4. Slight hollow back. | 4. Shoulder blades prominent. | 4. Chest flat-sloping. |
| | | 5. Hollow back. | 5. Hollow back. |

Posture Silhouette Outlines—Note straight and zigzag posture lines.
(Reproduced by permission of Dept. of Physical Education, University of Southern California.)

ut once a month. A class may be judged in a few minutes, especially if boys are inspected in small groups. They should be judged occasionally en off guard, and an announcement of the squad or class with the best rage posture may help to stir up a bit of friendly rivalry.

In posture training it is essential that exercises which strengthen the aker muscles be applied; for instance, if the individual has drooping ulders, a cramped chest, a round upper back, and a forward bent head, large back and abdominal muscles should be exercised. If the body lines to the right, the muscles on the left side should be strengthened, l vice versa.

Good posture should be maintained in standing, sitting, or walking; l postural habits should be overcome. The boys exhibiting good posture uld be complimented, and the boys exhibiting poor posture should be efully reminded of it.

### Exercises for Strengthening Postural Muscles

1. Lying on the back, the knees flexed, the feet on the floor, and the arms the sides of the body. Inhale and pull in the abdominal muscles, and tten the back against the floor by tightening the buttocks muscles; at same time move the arms sideward to the height of the shoulders and urn to the starting position. Repeat 10-15 times.

2. Lying on the back, the knees flexed, the feet on the floor, the hands sped behind the neck, the elbows touching the floor. Inhale and at the ne time raise the chest, but keep the head and the elbows down on the or. Relax. Repeat 10 times.

3. Lying on the back, the knees flexed, the feet on the floor, and the arms the sides of the body. Inhale and at the same time raise the arms forrd upward, and extend the knees so that the heels will be about ten inches the floor when the legs are straight and the toes are pointed. Return to original position. Repeat 10 times.

4. Lying on the back, the legs extended, the arms bent, and the upper ms on the floor. Raise both legs, then lift the hips and the trunk to the neck nd position (resting on back of neck and on shoulders). In this position legs and the trunk are vertical, and the trunk is supported by the nds near the hips. Return slowly to the original position, and unroll along entire spine. Repeat 10 times.

5. Sitting, the legs extended, the back flat, the abdomen in, the chest and head up, and the chin in. Inhale and place the hands behind the neck; rce the chest up and the elbows back. Hold this position five to eight conds. Relax. Repeat 10 times.

6. Starting position as in *5*. Hold the correct posture, bend the trunk to left, and force the chest up and the right elbow back and up. Do the me on the opposite side. Repeat 5 times to the left and 5 times to the ght.

7. Sitting, the knees flexed and the heels near the buttocks, the feet held m by a partner, the hands placed behind the neck, the elbows back. Lower trunk backward, keeping the back hollow and the chest forward. Return the sitting position in the same manner. Repeat 8-10 times.

8. Kneeling on both knees and sitting on the closed heels, the trunk bent rward so that the forehead touches the floor, the arms crossed in front of chest. Raise the trunk and lift the buttocks off the heels, and at the me time swing the arms forcefully diagonally sideward, forcing the chest t and the abdomen in. Return to starting position. Repeat 8-10 times.

9. Kneeling on both knees (the thighs vertical and the feet together), the nds resting on the floor directly below the shoulders. Raise the hips and raighten the knees, and sway the weight backward as far as possible. The

change takes place by the stretching of the legs and by the raising of the hip. Return to the original position. Repeat 10 times.

10. Full knee bend, the trunk bent forward so that the chest touches the knees, and the arms held backward. Stretch the knees and raise the trunk; at the same time swing the arms forcefully forward to side horizontal (the palms up). Force the chest out and the abdomen in. Return to the original position. Repeat 8-10 times.

11. Standing, with the feet about 2½ feet apart, the hands placed behind the neck, and the elbows back. Swing the trunk alternately to the left and to the right while maintaining the best possible posture. Be sure that the elbows remain backward, and swing in one plane.

12. Standing, with the feet about 2½ feet apart, the arms extended sideward, and the palms down. Turn the trunk alternately to the left and to the right. Keep the feet firm on the floor, with the toes pointing forward, the rear arm pulled backward but kept in the horizontal plane.

13. Standing, with the feet about 2½ feet apart, the arms extended sideward and the palms down. Bend the upper part of the trunk sideward left until the left arm is pointing vertically downward and the right arm vertically upward. Then swing the trunk and the arms in the opposite direction and position, maintaining correct posture during the exercise. Keep the feet firm on the floor, and do not twist the trunk.

14. Standing with the hands clenched on top of the head, the elbows back, the chest up and out, and the abdomen drawn in. Pull the elbows backward downward three times, then strike the extended arms backward downward to diagonal backward position with a twice repeated springy motion. Return to the original position.

CHAPTER 25

# CORRECTIVE AND SPECIAL PURPOSE EXERCISES

The purpose of this outline is to provide the teachers of Corrective ysical Education with a practical guide of safe and proven exercises, which e been carefully considered and listed for their corrective and preventive ues. The teachers should not attempt correction of doubtful or advanced es, but should refer such cases to an orthopedic physician and follow his scription.

Aims and Objectives of Corrective Physical Education

1. To have the student know what he is working for and to have him assume responsibility for the results to be obtained
2. To place an especial emphasis on "abdominal and low back" exercises and on foot exercises
3. To correct what can be corrected, to educate and re-educate for improvement, and to stimulate and guide in various remedial activities

It is important to avoid all exercises which tend to increase the curvature the lumbar spine and which overstretch the abdominal muscles and upper k muscles.

The Corrective Physical Education teacher should also take notice that the school benches and desks are properly built to fit the individual dent, (2) there is adequate supervision of the hourly recess, (3) the dents carry their books or satchels on the back, if possible, or else be rised to change the load from one arm to another, and (4) the students shown and taught how to sit, stand, and walk correctly.

Properly prescribed exercises, performed in a correct manner, will relieve correct certain undesirable conditions, such as weak and flat feet, poor ture, malnutrition, constipation, obesity, and underweight, and will pro- t against further injury or deviation from the normal. Each exercise uld be repeated ten to twenty times.

Most of the following exercises have been taken from the textbook *Pos- e Training and Remedial Gymnastics,* by Albert J. Baumgartner (pub- ed by the Burgess Publishing Company, 426 South Sixth Street, Minne- lis 15, Minnesota).

## SPECIAL PURPOSE EXERCISES

### 1

### FORWARD HEAD

The forward position of the head and neck so commonly assumed as part the general "fatigue slump" requires attention.

1. Lie on the stomach with the hands placed on the neck: turn the head toward the left and the right.
2. Sit on a chair or on the floor: lower the head until the chin touches the chest; raise the head against imaginary resistance, pulling the chin in.
3. Sit on a stool with the legs apart: press the hands on the thighs; stretch the spine and the neck.
4. Lie on the back: lower the head sideward, right and left, touching the ear to the shoulder.
5. Sit on a chair: roll the head toward the left and the right.

### 2

### KYPHOSIS (Round Back)

"Round back" is a deviation of the shoulder girdle with scapular mal-

position; the scapulae are separated (winged scapulae); the tip of the shoulder is forward, the chest is flat, the neck is forward, the normal dorsal curve is increased which, in its exaggerated form, extends to the lumbar region and is known as "total round back." The condition is influenced by ill fitting clothing, relaxed and weak musculature, and occupational positions.

1. Raise the arms to the side horizontal, with the palms upward, and with the left or the right foot placed forward on the floor so that the weight of the body is carried equally by both legs. Move the arms with moderate speed so that the hands describe a small circle backward, downward, forward, and upward.
2. Lie on the stomach, with the legs together and the toes pointed and held down by a partner. Inhale, and place the hands on the neck. First, push the elbows back; then raise the head and, last, the chest; and hold this position as long as possible. Be sure that the movement is felt in the shoulder region. Exhale and relax.
3. Lie on the back, with the arms at the sides. Inhale, and place the hands on the neck; raise the shoulders off the floor, and lift the chest as high as possible; the head, the elbows, the hips, and the legs stay on the floor. Hold this arch position, avoiding arching in the small of the back. Exhale and relax, bringing the arms to the sides.
4. Sit astride a bench or chair, the feet resting on the floor, the arms at the sides. Inhale, and place the hands on the neck; push the elbows back as far as possible, and bring the head into the correct position. Hold this position. Exhale, and bring the arms to the sides.
5. Lie on the back, with the arms against the thighs; place a pillow or small cushion under the shoulder blades. Inhale, and place the hands on the neck. Push the elbows toward the floor and hold this position as long as possible. Exhale, and bring the arms to the sides.
6. Stand as correctly as possible, and bend the elbows, placing the finger tips on the shoulders. Move the elbows in circles forward, upward, backward, and downward.
7. Stand as correctly as possible, with one foot placed forward, the arms held forward, the palms inward. Inhale, and move the arms sideward and backward horizontally as far as possible, turning palms up. Exhale, and drop the arms. Repeat.

3

LORDOSIS (Sway-back)

Lordosis is an exaggeration of the physiological curve in the lumbar region. The pelvic tilt is exaggerated, the abdominal muscles are stretched and relaxed, the abdomen is protruding, and the knees are hyperextended.

1. Bend the knees, and place the hands outside and near the legs, the palms flat on the floor, with the wrists near the toes (squat rest position). Stretch the knees as fully as possible, while retracting the abdomen; push lumbar spine upward, and turn the head under. Return and repeat.
2. Sit, with the legs stretched and the trunk erect. Inhale, and place the hands on the hips, bend the knees as fully as possible without changing the position of the trunk, and return to the starting position by stretching the knees, and exhale.
3. Lie on the back, with the arms at the sides and spread a few inches from the thighs. Inhale, and draw the knees to the point of the chin, keeping the head on the floor, and the heels as close to the buttocks as possible.
4. Lie on the back, with the knees drawn up, the feet on the floor and the heels close to the buttocks, hands grasping the ankles (toes must

be held down). Inhale, and raise the trunk to the sitting position, bringing the forehead to the knees.

. Lie on the back, and bend both knees to the chest. Stretch both knees into the air, lower both legs to the floor.

. Sit about six inches from the wall with the back to the wall. Place the hands on the hips. Lower the trunk backward to the wall, and hold this position a few seconds. Return to the upright sitting position.

4

## Scoliosis (Lateral Curvature)

Scoliosis, or lateral curvature, is an abnormal bending of the spine ally from the normal vertical. In advanced stages there may be a ing deviation, called "rotary spinal curvature." The individual curves amed according to convexity as the left total, that is, total curve convex e left; also left or right dorsal, left or right lumbar; and "S" curve, is, right dorsal left lumbar where there is a curve convex to right in orsal region and a curve convex left in the lumbar region.

NOTE. The starting positions and the movements of the exercises given are for lateral curvature, the convexity being to the left. In a right the positions and movements would be the opposite. At the beginning ch exercise the section of the spine that is concerned is indicated.

1. Dorsal. Standing, sitting, or lying, with the hands at the shoulders, and the elbows at the sides, extend the right arm upward and extend the left arm sideward. Hold the utmost extended position for several seconds. Return to position and repeat.
2. Dorsal. Standing, sitting, or lying, with the hands on the neck and the elbows well back, inhale and bend the body to the left, lifting the right elbow as high as possible. Hold this position; exhale and return.
3. Dorsal-lumbar. Side straddle standing, with the arms side horizontal, bend forward, downward, and bring the left hand outside the right foot and push the right hand backward. Return and repeat.
4. Dorsal-lumbar. Sit, with the legs crossed, the hands on the neck, the body as erect as possible. Twist the trunk to the right.
5. Dorsal-lumbar. Sit, with the legs apart, the left hand at the hip, the right hand at neck. Bend the trunk to the left, pressing on the side and against the neck.
6. Total curve. Stand with the back against the wall, the heels, the hips, the shoulders, and the head touching the wall. Inhale, and raise the right arm sideward upward, the palms forward; then extending it as high as possible and pushing the left arm downward, bend the trunk to the left. Exhale and return.
7. Total curve. Lie on the right side, place the left foot under a stationary object or have it held down by a helper; the right knee is bent so that the left knee rests at the middle of the lower right leg. The right arm is straight out and in line with the body, the left hand is placed on the hip. Inhale and raise the right arm and the right shoulder off the floor, and hold the position. Exhale and relax.
8. Total curve. Place the left foot on a stool or chair, keeping the legs straight, the arms at the sides horizontal. Bend the body left sideward and swing the right arm upward and the left arm downward behind the left hip. Return and repeat.
9. Lumbar. Hang on a high bar or on a horizontal ladder, with the toes touching the floor. Raise the extended left leg sideward.

10. **Lumbar.** Hang on a high bar or on a horizontal ladder. Raise both legs left sideward.

5

## Weak and Flat Feet

The most common deformity is talipes valgus with pes planus. This may be of congenital origin, due to paralysis or to paresis. In this position the ankle is deviated inward, the foot is pronated, the front of the foot is abducted on the medio-tarsal joint and the weight is thrown upon the ligaments so that the plantar structures are stretched and weakened.

In weak and flat feet the anterior tibial muscles, the posterior tibial, the intrinsic plantar muscles, and occasionally the peroneus longus may be stretched and weakened allowing the foot to sag. It must be remembered that the peroneus longus is a depresser of the big toe and helps hold down the front strut of the long arch. Although the peroneal groups in general may be shortened to adapt themselves to this deviation, the longus itself may actually be moderately stretched.

Flat foot may be designated as first, second, or third degree as follows: first degree—scaphoid one inch below an imaginary line drawn from the internal malleolus to the prominence of the big toe; second degree—scaphoid two inches below this line; and third degree—scaphoid three inches below this line.

1. Lie on the back, with the knees bent, the feet flat on floor and the heels about ten inches from the buttocks. By a series of grasping motions with the toes, creep down the floor and away from the buttocks as far as possible without moving the trunk. (Let the toes pull the heels away from the body without using the leg muscles).
2. Bend the body forward and place the hands about three feet away and in front of the forward pointing toes, with the feet flat on the floor and twelve inches apart. Rise on the toes, then move the heels outward, and return to starting position.
3. Lie on the stomach with the knees and the ankles bent at right angles. Do a series of grasping motions with the toes.
4. Squat to the full knee bend with the knees together. Place the hands outside the feet. Extend the legs backward, with the upper part of the forefeet (not the balls of the feet) resting on the floor. Alternately bend and stretch the arms.
5. Sit on the floor with the knees flexed and apart, the balls of the feet touching each other, and the heels slightly apart. Draw the feet to the buttocks, keeping the balls of the feet together. Push the feet away, and keep the position of the feet.
6. Sitting on a stool, hold a marble under the toes. Raise the right foot off the floor, and describe small inward circles with the forefoot, keeping the toes curled under. Do this ten to fifteen times; then repeat with the left foot.
7. Sit on a stool with the knees flexed at right angles, the feet resting on a towel, and about ten inches apart. Pivoting on the heels, slowly work the feet to bunch the towel between the feet, keeping the heels in contact with the floor during the exercise. Stretch the towel and repeat.
8. Lie on the stomach, with the arms sideward at shoulder level. Flutter kick the legs with the feet pointed, keep the chest on the floor, draw the stomach in, and breath freely during exercise.
9. Sit on a stool with the feet together and parallel on the floor and with the knees flexed at a right angle. Curl the toes tightly downward, and then roll the feet on to the outer border thus lifting the

inner border of the feet. Hold this position for several seconds. Relax and repeat.

10. Stand facing the wall and place extended hands against the wall, with the feet parallel and about one foot apart. Bend the arms so that the body weight falls forward. (The heels must be kept on the floor.) Extend the arms and repeat.

## ACTIVITIES ADAPTED FOR THE PHYSICALLY HANDICAPPED

Physical education has a unique opportunity to contribute to the develop-nt of morale, and to the recreational life of the handicapped by a program activities (which will not aggravate the handicap) that have corrective l ameliorative values, generally. A large part of the handicap of injured 'sons is emotional. They have to work and play with others who are ysically normal in most respects, and they feel their differences from 'mal people, and in many cases worry about them. As a result, they :hdraw into themselves, and miss many of their best opportunities to 'elop in personality and character. This withdrawal also results in their ; profiting sufficiently from association with others, and in their not ;aging in enough exercise for normal physical development.

Many of the purely exercise needs can be met by artificially devised move-nts, but these will not meet the need for all-round development. Hence, feasible, other activities, especially of a sports nature, should be added their program. This subject has been treated in detail by Stafford.* is advised that all teachers projecting such a program for their students dy this text carefully.

It is further suggested that in every school where there are handicapped ldren, careful attention be given to the formulation of such programs. ovisions for these children should, if possible, be made in the regular ysical education classes. If the handicap is too severe for this, a group such children, treated together, will often make excellent progress. It )uld be remembered that there are many who are only slightly handicapped; · these, a careful selection of the proper sports will do much to aid them develop normally. A boy, for example, who cannot swing a tennis racket, :ause of a weakened arm, may be able to swing a badminton racket because its lighter weight.

In the chapter on Games (Chapter 21) there are numerous activities ich are not overly strenuous. Some of them require much less running an others. Such games may be chosen for work with these handicapped idents. In addition, other game books may be secured which give many ni-active games, which are adaptable to such pupils.

A few suggestons for the adaptations of activities to specific defects are 'en below:

1. Activities for individuals recently recovered from severe illnesses, for lividuals suffering from severe muscular weakness or from glandular ficiencies that are of such a nature as to leave them with little strength, d for individuals suffering from asthma and similar respiratory diseases at are of such a nature as to limit the activity done.—Archery, bag punch-g, bicycling, bowling, croquet, dancing (social and folk), field events in ack and field athletics (not trying for extreme limits of performance); mes of low organization that are of light dosage—golf, hiking, horseshoes, :king a football, medicine ball (light), playing catch, relays (for short stances), rope spinning, shuffleboard, softball, stunts of the easier type, 'imming, table tennis, tennis doubles, and volleyball.

2. Activties for underweight individuals.—These individuals can par-ipate in almost any type of activity, but several precautions should be ken. First, the individual should not become too tired; hence the teacher

*George T. Stafford, *Sports for the Handicapped* (New York: Prentice-Hall, Inc., 1939).

should keep a careful check on the activity of these performers. For instance, two sets of tennis may be beneficial: four sets may be exhausting. Second, many of these individuals are very weak, and will at first be unsuccessful at sports. Since the underweight individuals are likely to be unduly sensitive, the kinds of activities that offer promise of rapid improvement and those not requiring too much effort should be taken up first. For instance, archery or golf or bowling are excellent; football would probably be dangerous. In other respects, the mental health aspects of such programs are more important than the physical aspects (see Chapter 29).

3. Programs for overweight individuals.—These individuals, again, can participate in almost any sports. They, too, are apt to be sensitive, for they have too much weight for their muscle, and hence usually perform badly. In addition to coöperating with the individual's physician in encouraging the individual to persist in the prescribed reducing diet, the teacher of physical education should attempt to aid him in choosing an exercise program which will add to his strength, give promise of rapid improvement in skills, and, if possible, be of such a nature that his overweight will not be too much of a handicap. The more strenuous activities such as weight training and wrestling will build strength. Field events in track and field athletics, especially the weight events, the balancing type of stunts, under man in pyramids, games which require a minimum of running, swimming, and skating are examples of sports in which the boy will not be too much handicapped because of his overweight.

Frequently, the overweight boy has difficulty with foot strain. The teacher should be able to advise him as to where he can secure the type of gymnasium shoes that will prevent or relieve this strain, and to assist in choosing suitable street shoes.

4. Activities for individuals with structural defects of the spine.—Here, of course, an activity program should be prescribed only after the permission and advice of the boy's physician has been secured. If such permission is given and if there is no contra-indication for strenuous activity—as there generally is not—the program should be undertaken, usually in the regular gymnasium classes. These boys can undertake almost any of the activities which are indicated for the normal boy. Emphasis should be put on hanging activities on the apparatus, and on swimming if facilities are available. Care should be exercised concerning exercises in connection with tumbling, pyramids, and with games involving head-on impact, such as football. The instructor should also be careful to see that the boy does not become overly fatigued. This type of boy should, of course, be given corrective exercises if these are indicated; but otherwise he should not be segregated from the rest of the boys.

5. Activities for amputees:

a. Activities for boys with one arm.—It is surprising how many activities can be participated in by those with but one arm. The instructor should assume, other things being equal, that the individual *can* participate. The few things in which the boy cannot compete will be apparent. One-armed boys do well in soccer, volleyball, basketball, softball, handball (they learn to hit backhanded on the handicapped side; and almost all of the regular activities, except such as the pole vault, wrestling, boxing, apparatus work, and rope climbing, can be engaged in by the one-armed boy.

b. Activities for boys with one leg.—These boys are limited in running unless the artificial limb is well fitted, and the amputation is below the knee. They frequently do unusually well in apparatus work, bag punching, rope skipping, hand balancing, swimming, golf, archery, and other activities which require little running. Again, it is usually best not to segregate the boy from his normal companions. The emphasis should be on what such boys *can* do, not on what they cannot do.

6. Activities for boys with weak or flat feet.—Here the activities need

e somewhat adapted to the condition. The usual complaint is that the give pain or that the activity strains them. The first thing is to see to iat the shoes used fit correctly, and that they are re-inforced where ssary. The help of an orthopedist may be needed here. The same ld be true of the shoes customarily worn during the day. Frequently eal strain is not during the physical education periods, but subsequently, use of poor street shoes. In general, almost any activity can be engaged xcept activities in which the individual alights hard, such as somersaults umbling, heavy landing from the apparatus, the broad or high jumps, activities requiring endurance on the feet, such as prolonged running. For such boys the advice of a competent orthopedist should be sought, a program of corrective foot exercises laid out. Such exercises are given age 236 and others can be found in any standard text on corrective exercise bibliography for Chapter 25).

7. Activity programs for boys with uncorrected hernia.—This disability ie which can be corrected only by surgery. The danger is that a sudden in will cause a strangulation, and result in a dangerous condition for boy. In the stress of competition a truss may become displaced. Hence program should be restricted until the boy has had the defect treated ically. In general, the sports contra-indicated are those which involve len jarring, such as tumbling, heavy alighting from apparatus, and those rities that induce added intra-abdominal pressure, such as exercises of ngth (weight training, wrestling, apparatus work, football, sprinting, ght events in track and field athletics, etc.). In general, sports in which e is more reaching than bending are good, such as tennis, badminton, et shooting and volleyball. The lighter informal games are indicated.

8. Activities for infantile paralysis cases.—These are similar to those amputees. Most cases seen in the gymnasium classes are those having one arm or one leg partially paralyzed. These boys can participate in y activities, such as sports for those with one arm or one leg (see p. 238). se with one leg affected can very likely become good gymnasts, for the ter weight to be carried makes them more able to control the body with arms. These boys are also able to officiate some of the more strenuous ts in which they cannot participate.

9. Activities for those with spastic paralysis.—The activities possible , of course, vary with the degree of severity of the defect. This condition ot easily relieved by medicine or surgery; hence re-education presents y useful possibilities. The basic injury is to the brain, and among the lts are strong contractures of certain muscle groups, hypersensitivity to uli, and tendency to over-excitement.

One of the most useful approaches is to teach the boy to relax. The nique of accomplishing this is too technical to detail here, but excellent erial will be found in Jacobson's book.*

The next approach is to offer activities which do not require much speed, which are dependent for success upon the individual himself, for he is ally sensitive to participating in sports with others, fearing that he will oil things" for them. However, archery, bowling, clock golf, basket shoot- croquet, horseshoe pitching, rope spinning, apparatus stunts, some tumb- stunts such as rolls, balances, and snap-ups, depend solely upon himself; if he does not do well, he does not "spoil it" for the others. He should caught that practice will result in slow but steady progress, and that he conquer many of his troubles by re-education. He can be introduced to er activities as he improves. He frequently becomes expert at non-speed mming.

For many of these groups certain special activities may be introduced the program, such as bait and fly casting, easy stunts, social dancing,

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mund Jacobson, *You Must Relax* (New York: McGraw-Hill Co., 1938).

juggling, bicycling, roller skating, and many others. The important thing is to study the problems of the handicapped boys individually, and work out programs of sports and recreation that will lead to relative success in mastering them, to the end that the boys overcome their feelings of inferiority, and acquire means of recreation which they can continue for many years to come.

# Part V
# TESTING

CHAPTER 26

# TESTING PHYSICAL FITNESS AND ATHLETIC ACHIEVEMENT

From the standpoint of physical education for boys, *physical fitness* may be considered to be composed primarily of muscular strength, muscular endurance, circulo-respiratory endurance, agility, and certain motor skills. So far as *physical fitness* is concerned, extreme speed of foot, as in sprinting, is not of great importance. Other types of speed, as in quick adaptive movements of the body, are covered by the term "agility." Since boys of the high school age group usually have a sufficient degree of flexibility, it is not necessary to attempt to measure this quality; and the activities recommended for the physical conditioning of both the younger and the older personnel develop this quality adequately.

The program for developing physical fitness should be intelligently directed to insure the achievement of maximum results. Thus, the physical fitness of each individual should be known at all times so that the progressive changes in the fitness of the individual may be followed by the physical education teacher. It is possible to measure physical fitness with no waste of time (each group of measurements to be conducted in the physical training period are in themselves excellent conditioning activities) and with a satisfactory degree of accuracy. It is proposed that the program of tests presented below be instituted and that retests be administered at least every four months.

*Qualities To Be Measured*

The qualities to be measured are strength, muscular endurance, circulo-respiratory endurance, agility, and athletic achievement. "Muscular endurance" is the type of endurance that characterizes a man about to use his strength at strenuous, submaximal levels for prolonged periods of time, such as the work of a lumber jack, or that of a farm laborer pitching hay. Men with enough of this kind of endurance can do hard work, march for a prolonged period with heavy equipment, load heavy boxes for a considerable time, or perform similar strenuous activities without undue exhaustion. It does not follow, however, that they can perform at a near maximum load with efficiency.

"Circulo-respiratory endurance" is the type of endurance which enables the boy to run without undue exhaustion at a relatively high speed, or to perform work for prolonged periods of time at a dosage level near his maximum capacity. This type of endurance is possessed by the cross country runner, the trained boxer, or the water polo player.

"Agility" may be defined as that type of ability which enables the individual to change his position in space or, when running at high speed, to change his direction sharply.

The "athletic achievements" are activities of running, jumping, throwing, and climbing (sometimes in the nature of an obstacle race), which contain essential elements of coördination needed for many important emergency tasks. These track and field athletic ability tests should be used to measure improvement in the mentioned skills and to motivate practice in them.

The tests selected use a minimum of equipment, are simple enough to be administered by any intelligent teacher after an hour or two of instruction, and measure with a high degree of accuracy the current degree of physical fitness. It is possible to measure muscular strength and muscular endurance with the same test. The first test described below has been selected to give a measurement of both these qualities (muscular endurance is very highly

related to muscular strength; while the two are not synonymous, for practical purposes the muscular endurance test will also measure muscular strength). This will be called a test of "muscular condition."

*Administration of the Tests*

The procedures for organizing the administration of the tests are very important for expediting the testing process. The procedures will be described for each test separately in conjunction with the description of the tests. Before any of the tests are administered, the physical education teacher should train a group of students in the techniques of administering the tests. This group should be put through the tests and should clearly understand the details of the administration; they should be given the opportunity to administer the tests to one another under the observation of the teacher until their methods of administering the tests are thoroughly satisfactory.

*Scoring Tables*

The scoring tables used to score all tests of physical condition are so constructed as to run from a minimum of 0 to a maximum of 100. The score of 50 is average for a very well conditioned group of high school boys. A score of 100 is five standard deviations above the average, and will usually be exceeded by only .000029 per cent of the group. The percentages expected to exceed each ten points are as follows:

| | | |
|---|---|---|
| 100 | .000029% | |
| 90 | .0032% | |
| 80 | .13% | Very exceptional |
| 70 | 2.28% | Very superior |
| 60 | 15.87% | Excellent |
| 50 | 50.00% | Good |
| 40 | 84.13% | Poor |
| 30 | 97.72% | *Very* poor |
| 20 | 99.86% | |
| 10 | 99.99% | |
| 0 | | |

*I. Tests of Muscular Condition*

These tests measure the strength and the endurance of the arms and of the shoulder girdle, of the legs, of the abdominal muscles, and of the thigh flexors. The sum of the scores of these muscular groups correlates very highly with the muscular condition of the whole body. The tests consist of pull-ups, push-ups, squat jumps, and sit-ups.

These test exercises are so strenuous that care should be taken to prevent an over-stimulation of the boy taking them: if this precaution is not taken, the boy may become physically disqualified before the conclusion of the test.

The tests should never be administered without some preliminary instructions and practice in the techniques. There should be sufficient opportunity for practice for the mastery of the form for each test. The two-minute sit-ups should have been practiced enough for the boys to know their optimum pace.

Before the tests are administered, the boys should be well warmed up—by jogging to the place where the tests are to be given or by a few not too strenuous conditioning exercises for a few minutes (see p. 52).

The group of boys should be lined up behind the chinning bar. After the time needed for administering the tests to a group of a given size is determined, it will be possible to have different groups report to the testers at appropriate intervals in order to obviate wasting the time of the boys.

Explanation should be made to the effect that these are tests in which the score depends on the repetition of each exercise to the limit. The boys

ould be told that they can usually do many more movements than they ink they can, and that when they approach what they think is their limit endurance, they should try to do more repetitions, say, three more chins, e more floor dips, ten to fifteen more squat jumps, and from five to ten ore sit-ups (by not slowing down unduly). Before each test is given, planation should be given as to what constitutes a satisfactory and an satisfactory performance.

After the chinning test has been administered, the boys should be pertted to rest about five minutes before they do the push-ups; for example, line of boys may accumulate in front of the place where the push-up test administered, and so on for each subsequent test. These boys have an portunity to rest and also to see their predecessors perform, thus getting good idea of how the tests are done. The boys should be told what contutes a superior score in order that they may be motivated to an "all-out" rformance. The best performance to date at the individual school may ll be noted. There should be a rest of about five minutes between the sh-ups and the squat jumps, and of at least ten minutes between the squat mps and the sit-ups.

Each boy aiding in the administration of the test should encourage each rformer to go "all-out," especially when the performer is apparently near- the end of his endurance, and he should encourage him to increase his ort whenever it is noted that he is about to quit.

As soon as the four tests are completed, the scoring blanks should be ken to a station where the tests are scored, the profile plotted, and the boy ould be told at once what his score is, how good it is, and a few words encouragement should be given to motivate him to further effort to prove his muscular condition.

## CHINNING

A horizontal bar approximately seven feet and six inches from the or and from one inch to one and one-half inches in diameter should be ed. In case the test is to be taken in warm weather, some provision should made to keep the hands from slipping. A resin bag, such as that which used by baseball pitchers, is convenient for the purpose.

The individual to be tested jumps (a very short individual steps on a air) and grasps the bar with the palms toward the face, that is, with the lms turned backward, and with the finger nails toward the face. From hanging position, with elbows straight, he pulls himself upward until the in is over the bar. He then lowers himself until the elbows are again raightened, and repeats the exercise as many times as possible. It is rmissible for the individual to sway slightly and flex the hips slightly, t he may not, without penalty, kick or use jerking movements or the -called "kip" movement. If he violates any of these rules, he is credited th only one-half chin. If he commits four violations while doing the test, should be stopped, given a rest, and retested later. If he starts to swing o much, the individual administering the test should stop the swinging. ie chinning must be continuous. If the boy stops at the top or at the ttom to rest, one-half chin should be subtracted. If he persists, he should stopped, given a rest and retested later. (See Fig. 105)

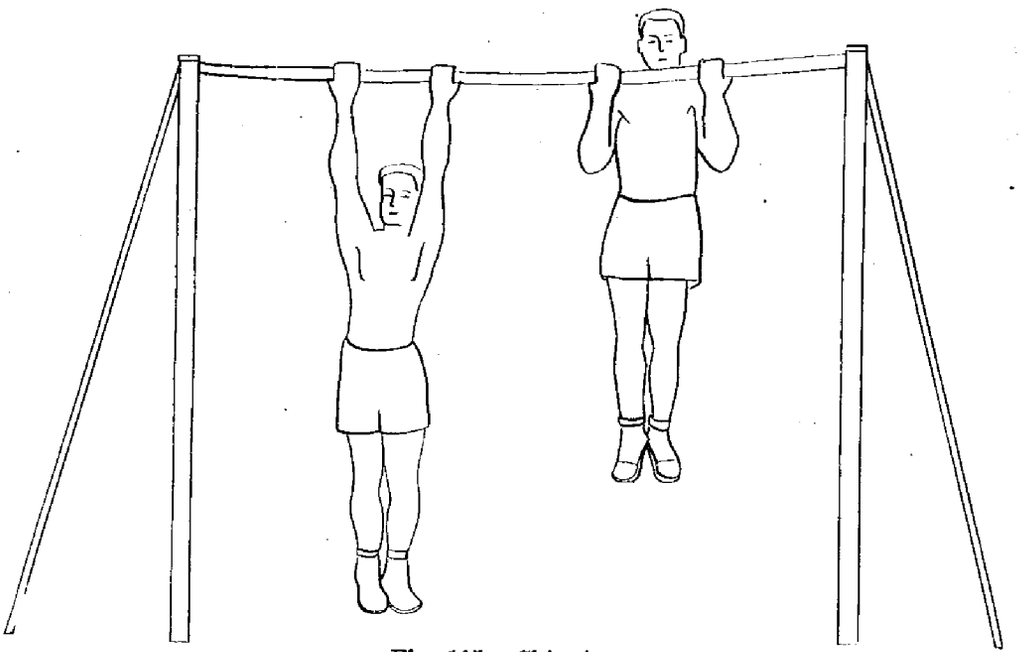

Fig. 105. Chinning

SCORING TABLE FOR CHINNING

| No. of Chins | Point Score | No. of Chins | Point Score | No. of Chins | Point Score | No. of Chins | Point Score |
|---|---|---|---|---|---|---|---|
| 44 | 100 | 33 | 91 | 22 | 78 | 11 | 59 |
| 43 | 99 | 32 | 90 | 21 | 76 | 10 | 56 |
| 42 | 99 | 31 | 89 | 20 | 75 | 9 | 54 |
| 41 | 98 | 30 | 88 | 19 | 73 | 8 | 52 |
| 40 | 97 | 29 | 87 | 18 | 72 | 7 | 50 |
| 39 | 97 | 28 | 86 | 17 | 70 | 6 | 47 |
| 38 | 96 | 27 | 85 | 16 | 68 | 5 | 45 |
| 37 | 95 | 26 | 83 | 15 | 66 | 4 | 42 |
| 36 | 94 | 25 | 82 | 14 | 65 | 3 | 39 |
| 35 | 93 | 24 | 81 | 13 | 63 | 2 | 36 |
| 34 | 92 | 23 | 79 | 12 | 61 | 1 | 33 |

*How To Read This Table*

The point score is to the right of the number of chins.
Example: The point score for 20 chins is 75.

## PUSH-UPS

The individual to be tested lies face downward on the floor, placing his hands on the floor and just at the sides of the shoulders. The body must be straight from shoulders to heels. The boy then rests his weight on his hands and on his toes. Lifting the hips very slightly so that only the chest, the hands, and the toes are on the floor, he pushes up until the arms are straight, and then lowers the body again until the chest just touches the floor, repeating as many times as possible. After the exercise has begun and when the body descends, only the chest may touch the floor (abdomen and thighs may not touch), and on the return the elbows must be completely straightened. The individual may not sway or wriggle in pushing up. If he violates this regulation, he is credited with only one-half push-up. If he commits four such violations, he should be stopped, and retested after an adequate rest. The exercise must be continuous. If the boy stops to rest or lies on the ground, one-half movement should be subtracted. If he persists in stopping to rest,

e should be stopped, given a rest, and retested later. The judge should it or kneel beside the boy being tested, and control his trunk movements ·ith one hand. (See Fig. 106)

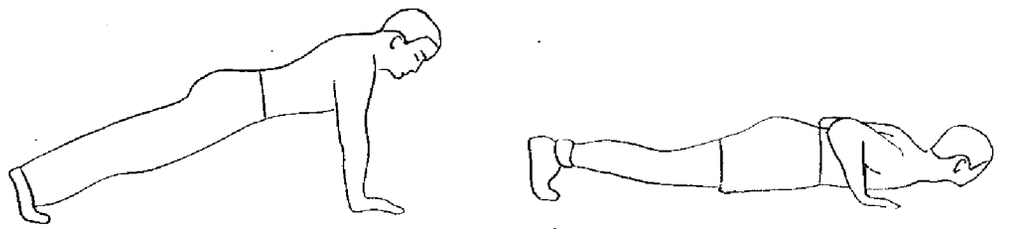

Fig. 106. Push-ups

SCORING TABLE FOR PUSH-UPS

| lo. of Push-ups | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Point Score | | | | | |
| 0 | | 15 | 16 | 18 | 19 | 20 | 22 | 23 | 25 | 27 |
| 10 | 28 | 30 | 31 | 33 | 35 | 36 | 38 | 40 | 41 | 42 |
| 20 | 44 | 45 | 46 | 48 | 49 | 50 | 52 | 53 | 54 | 55 |
| 30 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 |
| 40 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 75 |
| 50 | 76 | 77 | 78 | 78 | 79 | 80 | 81 | 82 | 82 | 83 |
| 60 | 84 | 84 | 85 | 85 | 86 | 87 | 88 | 88 | 89 | 90 |
| 70 | 91 | 92 | 92 | 93 | 94 | 95 | 95 | 96 | 96 | 97 |
| 80 | 97 | 98 | 98 | 99 | 99 | 100 | | | | |

*How To Read This Table*

The column at the left represents the score in tens; the row across the ›p represents the units. For example, the point score for 32 push-ups is 59, ıat is, where 30 in the column at the left and 2 in the row across the top ıtersect.

## SQUAT JUMPS

The individual to be tested stands with one foot approximately a foot's ıngth in advance of the other foot, with his hands clasped and resting on he top of his head. He squats down until the rear heel contacts the buttock n that side. He then springs upward until both knees are straight and is feet have cleared the floor. When he reverses the position of the feet, hat is, when the rear foot becomes he front foot, upon lighting on the eet again, he drops down to the quat position, with the rear heel ›uching the buttock on that side. Ie repeats the exercise as many imes as possible. The feet should ot be separated more than about foot, although the exact amount f separation is not of importance o long as the individual drops own so that the buttock touches he rear heel. The movement must e continuous. If the boy stops to est, he should be stopped, and etested later. (See Fig. 107)

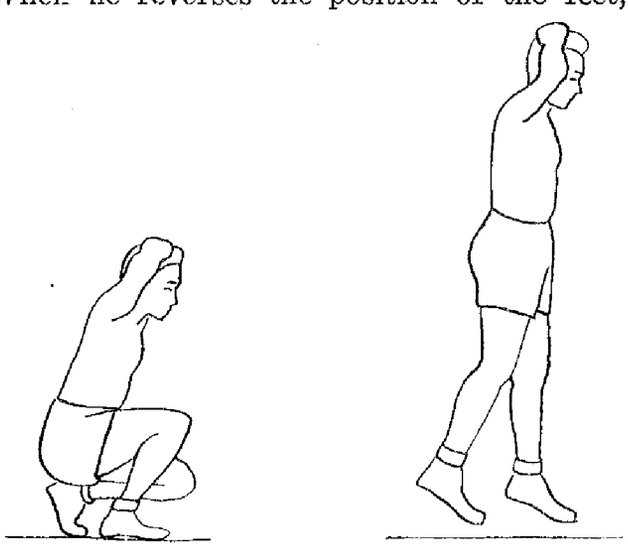

Fig. 107. Squad Jump

SCORING TABLE FOR SQUAT JUMPS

| No. of Squat Jumps | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Point Score | | | | | | | | | |
| 160 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 100 | 100 |
| 150 | 96 | 96 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 98 |
| 140 | 94 | 94 | 95 | 95 | 95 | 95 | 95 | 96 | 96 | 96 |
| 130 | 92 | 92 | 92 | 93 | 93 | 93 | 93 | 94 | 94 | 94 |
| 120 | 90 | 90 | 90 | 91 | 91 | 91 | 91 | 91 | 92 | 92 |
| 110 | 87 | 88 | 88 | 88 | 88 | 89 | 89 | 89 | 89 | 90 |
| 100 | 85 | 85 | 85 | 86 | 86 | 86 | 87 | 87 | 87 | 87 |
| 90 | 82 | 82 | 83 | 83 | 83 | 84 | 84 | 84 | 84 | 85 |
| 80 | 79 | 79 | 79 | 80 | 80 | 80 | 81 | 81 | 81 | 82 |
| 70 | 75 | 76 | 76 | 76 | 77 | 77 | 77 | 78 | 78 | 78 |
| 60 | 71 | 72 | 72 | 72 | 73 | 73 | 74 | 74 | 74 | 75 |
| 50 | 65 | 65 | 66 | 66 | 67 | 68 | 69 | 69 | 70 | 71 |
| 40 | 56 | 57 | 58 | 59 | 59 | 60 | 61 | 62 | 63 | 64 |
| 30 | 45 | 46 | 47 | 49 | 50 | 51 | 52 | 53 | 54 | 55 |
| 20 | 29 | 31 | 33 | 35 | 36 | 38 | 39 | 41 | 42 | 44 |
| 10 | 3 | 7 | 10 | 13 | 16 | 19 | 21 | 23 | 25 | 28 |

The column at the left represents the score in tens; the row across the top represents the units. For example, the point score for 49 squat jumps is 64, that is, where 40 in the column at the left and 9 in the row across the top intersect.

## TWO-MINUTE SIT-UPS

The individual to be tested lies on the floor, with his feet separated from twenty-four to thirty inches. The feet should be held down either by another individual or by some object. (The lowest bar of the stall bars or a horizontal iron pipe about six inches from the floor and four inches from the wall are excellent devices with which to hold the feet down.) The hands are clasped behind the head. The individual brings the head and chest forward, and sits up, at the same time rotating the trunk to the left, and touching the right elbow to the left knee. He then immediately lies down again, repeats the exercise, touching the left elbow to the right knee. He repeats this exercise as many times as possible within two minutes. The individual should press forward until the elbow touches the knee or to approximately this position. It should not be counted an error, however, if the elbow misses the knee by a fairly small margin. Since this is a speed test, the boys should be trained to sit up as rapidly as they can and still keep going: hence several preliminary practices should be held. If the boy tires to the extent that he cannot keep going, he may rest a few seconds and start again, as long as all of the sit-ups are done within the time limit. The time should be called out every twenty seconds. (See Fig. 108)

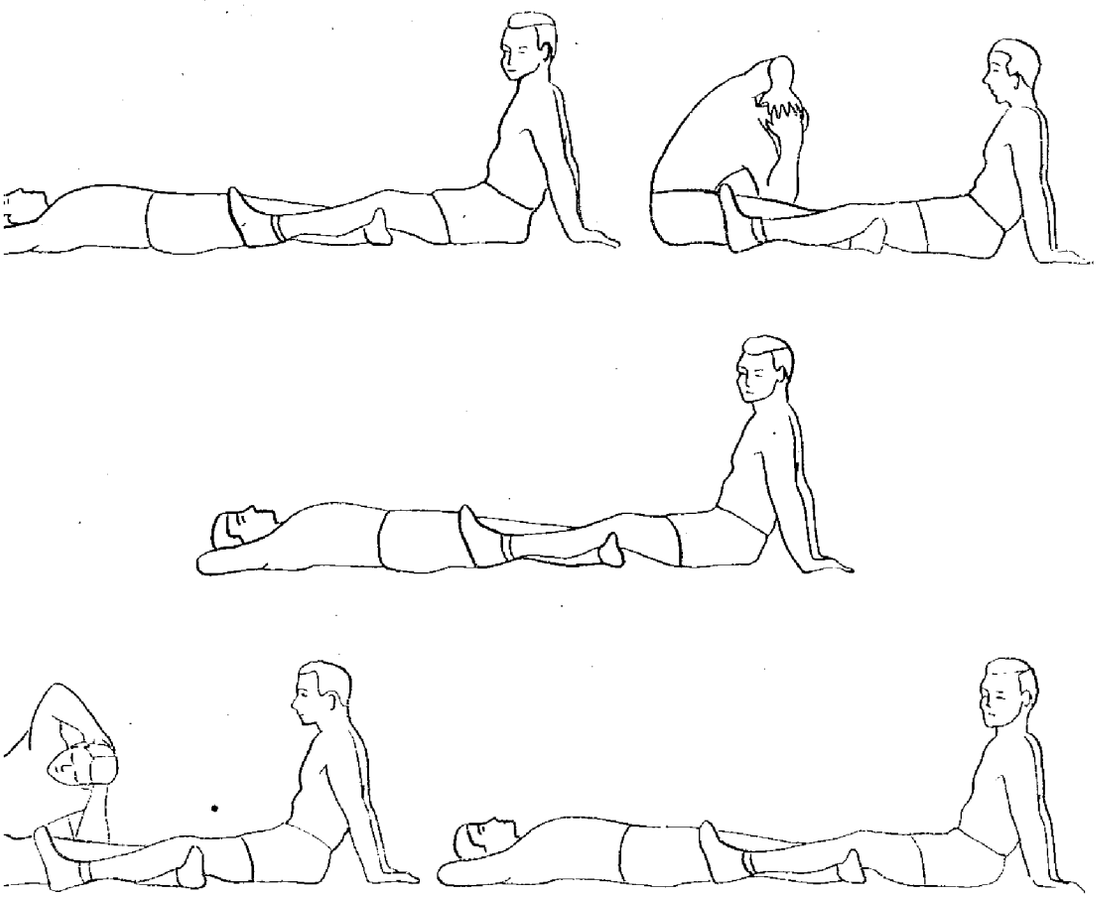

Fig. 108. Sit-ups

SCORING TABLE FOR TWO-MINUTE SIT-UPS

| of Sit-ups | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | | | | | | | | 1 | 3 | 4 |
| 30 | 5 | 6 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 |
| 40 | 17 | 19 | 20 | 21 | 22 | 24 | 25 | 26 | 27 | 29 |
| 50 | 30 | 31 | 32 | 34 | 35 | 36 | 37 | 38 | 40 | 41 |
| 60 | 42 | 43 | 45 | 46 | 47 | 48 | 50 | 51 | 52 | 53 |
| 70 | 55 | 56 | 57 | 58 | 59 | 61 | 62 | 63 | 64 | 66 |
| 80 | 67 | 69 | 70 | 71 | 72 | 73 | 74 | 76 | 77 | 78 |
| 90 | 79 | 80 | 82 | 83 | 84 | 85 | 87 | 88 | 89 | 90 |
| 100 | 92 | 93 | 94 | 95 | 97 | 98 | 99 | 100 | | |

*How To Read This Table*

The column at the left represents the score in tens; the row across the represents the units. For example, the point score for 55 sit-ups is 36, t is, where 50 in the column at the left and 5 in the row across the top ersect.

These tests are all scored on the scoring tables. Since the scores for four tests are summed, a *good* score will be 200.

These test exercises may be practiced at will by the boys, for they are ellent developmental exercises, and the boys should be encouraged to par-pate in them.

## TESTS OF AGILITY

The tests of agility used are the so-called "squat thrust" exercises, given for either twenty or sixty seconds. When given for sixty seconds they provide an excellent measure of endurance. The individual to be tested, when commanded to "go," bends the knees somewhat and places the hands on the ground about twelve inches in front of the feet. He then extends the feet and legs backward so that the trunk and legs are fully extended. The hips must be at least as low as the line from the shoulder to the heels, although they may, if desired, be lower. The individual then brings the feet back to the original squat-rest position and then arises to the erect position, with the body slanted somewhat forward. He must straighten up until the body is approximately in a straight line; that is, he may not be bent forward ready for the next movement. When the boy is in the position of leg extended backward, *the shoulders should be ahead of the hands;* otherwise, he will have difficulty in recovering rapidly. This movement is repeated as rapidly as possible until the whistle blows indicating the end of the twenty (or sixty) seconds. (See Fig. 109)

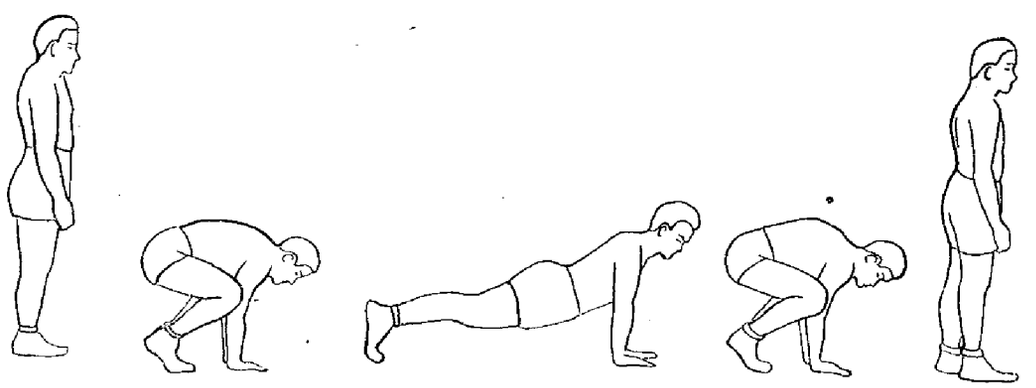

Fig. 109. Squad Thrusts

In scoring this event in the twenty-second test, the scorer counts the full number of four-count movements and quarter movements. If when the whistle blows, the hands have just been placed on the ground, it will be called a quarter movement. If the legs are back, it will be called a half movement. If the feet have returned to a squat-rest position, it will be a three-quarters movement. If the individual has again returned to an erect position it is, of course, a full movement. In the sixty-second test, only the completed full movements are counted and scored.

This test may be scored by inspectors, or one-half of the class may score the other half. This latter procedure is especially to be commended for practice trials. The test should first be practiced in conditioning exercises formation, with the exercise given slowly until the coördination has been learned, and then gradually speeded up until the individual can work at his own top speed. The first practice may be when the boy first comes to the attention of the physical education teacher in the conditioning exercise periods. The official test is given after a warming-up period in the twenty-second test. The best of three trials is taken as the individual's official score. Only a single trial is given for the sixty-second test. These tests, like the others, are interpreted in terms of a point score.

In the administration of the sixty-second test, the time should be called out every ten seconds.

SCORING TABLE FOR TWENTY-SECOND SQUAT THRUSTS

| No. of Squat Thrusts | 0 | ¼ | ½ | ¾ |
|---|---|---|---|---|
| | Point Score | | | |
| 21 | 97 | 98 | 100 | |
| 20 | 91 | 92 | 94 | 95 |
| 19 | 85 | 86 | 86 | 89 |
| 18 | 78 | 80 | 81 | 83 |
| 17 | 72 | 74 | 75 | 77 |
| 16 | 66 | 67 | 69 | 70 |
| 15 | 59 | 61 | 62 | 64 |
| 14 | 53 | 55 | 56 | 58 |
| 13 | 47 | 48 | 50 | 51 |
| 12 | 40 | 42 | 44 | 45 |
| 11 | 34 | 36 | 37 | 38 |
| 10 | 28 | 29 | 31 | 32 |
| 9 | 22 | 23 | 25 | 26 |
| 8 | 15 | 17 | 18 | 20 |
| 7 | 9 | 11 | 12 | 14 |
| 6 | 3 | 4 | 6 | 7 |

*How To Read This Table*

The column at the left represents the whole numbers; the row across the top represents fractional parts — ¼, ½, ¾. For example, the point score for 14½ squat thrusts is 56, that is, where 14 in the column at the left and ½ in the row across the top, intersect.

SCORING TABLE FOR ONE-MINUTE SQUAT THRUSTS

| No. of Squat Thrusts | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Point Score | | | | | | | | | |
| 0 | | | 1 | 2 | 4 | 5 | 6 | 7 | 9 | 10 |
| 10 | 12 | 14 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 |
| 20 | 31 | 33 | 35 | 37 | 39 | 42 | 44 | 46 | 49 | 51 |
| 30 | 53 | 56 | 58 | 61 | 63 | 66 | 68 | 71 | 74 | 76 |
| 40 | 79 | 82 | 84 | 87 | 90 | 92 | 95 | 98 | 100 | |

*How To Read This Table*

The column at the left represents the score in tens; the row across the top represents the units. For example, the point score for 31 squat thrusts is 56, that is, where 30 in the column at the left and 1 in the row across the top intersect.

*Tests of Circulo-Respiratory Endurance*

While distance running is frequently considered to be an ideal measurement of condition, such events have one shortcoming as accurate measures of circulo-respiratory endurance. This statement may be clarified by an illustration. Assume that A can run one hundred yards in ten seconds, and

that B cannot run this distance in less than fifteen seconds. Assume that both men are in ideal condition in so far as endurance is concerned but that B is innately slow and simply cannot move his limbs as fast as A can. If A and B were to run a half mile at top speed, A would run it in about 1:58 while B would run it in 2:56. Their corresponding times for the mile run would be 4:26 and 6:38, *and both A and B would be running at the same proportion of their potential speed.* B then, *on the basis of his time,* would be considered as possessing poor endurance while actually his *endurance* is as good as A's. If A ran the mile in 4:50 and B in 6:40, B would really be in better *endurance* condition than A.

Circulo-respiratory endurance may be measured rather accurately by dividing the time for a distance run (in this test, 200 yards) by the time for a sprint (in this test, a 60-yard dash). This gives a *quotient* that can be interpreted in terms of *endurance*-points that are comparable to the other two test events. We shall term this the *test of running endurance.*

In order to expediate the administration of this test so that a large number of boys may be timed with one stop watch, modifications are made in the usual method of conducting the race. Instead of running a full sixty yards, the individual runs for six consecutive seconds, and the distance run in six seconds is interpreted in terms of the time in which he would run a sixty-yard dash. The two-hundred yard run is timed with one stop watch, the individual being timed to the nearest one-half second. The quotient was obtained by dividing the two-hundred-yard time by what would correspond in principle to the scoring tables described above. The scores are read from a two-dimensional table.

## SIX-SECOND RUN

Markers of heavy cardboard about nine inches square, with the proper yardages painted on them, should be prepared. There should be one marker for each distance at units of two yards, from thirty-four to fifty-six yards. There should be a hole in the middle of each cardboard so that the cardboard may be fastened to the ground with a nail. If chalk lines can be drawn on the ground at two-yard intervals, the scoring of the test will be expedited.

Before giving a test, the physical education teacher should have trained a number of boys for inspectors—one for each lane to be run. Thus, if he plans to run ten boys in each heat, ten inspectors should be trained.

The boys to be tested are then lined up in columns behind the starting line. The inspectors collect the cards from each boy in the column, arrange them in the order in which the boys will run, and then go to a point about forty-five yards from the starting line.

The "starter" uses a hand signal to start each group, with the usual "get on your marks," "get set" and "go" signals. With "get set" he raises his hand (preferably holding a white handkerchief) and with "go" waves the handkerchief downward. The timer has a stop watch and a whistle. When the command "go" has been given, he starts the watch. He then observes the watch, not the runners. He counts aloud by seconds "three," "four," and "five," and when the second hand has reached exactly six seconds, he blows his whistle. Each inspector then notes the place which his boy has reached, using the chest of the boy as the criterion. The inspector then goes to that spot and observes where it is relative to the cards marking the distance (or the chalk lines on the ground). If this distance is just on or over one line or card, that number of yards is recorded; if it is approximately between the cards or near the next card, the distance intermediate between those lines is recorded. For example, if an individual has reached or just passed the forty-eight yard line, his score is forty-eight yards. If he has reached or just passed the fifty-yard line, his score is fifty yards. If he is nearer an intermediate position, his score is forty-nine yards.

It is well to give two trials, which may be administered very closely together. After a few minutes rest, perhaps five minutes, the subject may proceed to the next event.

## 200-YARD RUN

This event is run on a one-hundred-yard straightaway — running one hundred yards straightaway, around a stake in the ground, and back. It is started in the same manner prescribed for the six-second run. The timer observes his watch, and as the first runner approaches the finish line, he counts the seconds in a loud voice, with the accented syllable corresponding to the full second in the count and a "hup" for the half second; thus "twenty-*six*, hup, twenty-*seven*, hup, twenty-*eight*, hup," where *six*, *seven* and and *eight*, respectively, mark the seconds and "hup" marks the half second. Each inspector observes his runner and records his time in seconds and half seconds; that is, if the runner crosses the finish line when the timer has just called out the number of the second (e.g., thirty), the inspector records *thirty seconds*. If the runner crosses the finish line when the timer has just called out "hup, (e.g., thirty-hup), the inspector records thirty and one-half seconds.

The event is scored on the scoring table given for running endurance. In this table, the six-second run is recorded at the top of the table and the two-hundred-yard run on the *left side* of the table. Immediately below the six-second run and to the right of the two-hundred-yard run, scoring table values are given. These are not particularly significant except as indications of running ability, but are of interest to boys. The point values given at the intersection of the column below the six-second score and to the right of the two-hundred-yard score are significant values and correspond in meaning to similar values for other events, and may be considered as the score for *running endurance*.

### Scoring Tables for Six-Second and 200-Yard Run

| Yds. Run in 6 Sec. | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pt. Score | 24 | 25 | 27 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | 53 | 55 | 57 | 60 | 63 | 66 | 69 | 72 | 75 | 78 | 81 |

| Time | Pt. Score | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 " | 100 | | | | | | | | | | | | | 104 | 101 | 98 | 96 | 94 | 91 | 88 | 86 | 84 | 81 | 79 | 76 | 73 |
| 23 " | 85 | | | | | | | | | | | 102 | 99 | 97 | 94 | 92 | 89 | 86 | 84 | 81 | 79 | 76 | 73 | 70 | 68 | 65 |
| 24 " | 75 | | | | | | | | 104 | 101 | 98 | 95 | 93 | 90 | 87 | 84 | 82 | 79 | 76 | 73 | 71 | 68 | 65 | 63 | 59 | 57 |
| 25 " | 67 | | | | | | | 100 | 97 | 95 | 92 | 88 | 86 | 83 | 80 | 77 | 74 | 71 | 69 | 66 | 63 | 60 | 57 | 54 | 52 | 49 |
| 26 " | 60 | | | | | | 100 | 97 | 94 | 91 | 88 | 85 | 82 | 79 | 76 | 73 | 70 | 67 | 64 | 61 | 58 | 55 | 52 | 49 | 46 | 43 | 40 |
| 27 " | 55 | | | | 104 | 100 | 97 | 94 | 91 | 88 | 85 | 82 | 79 | 74 | 72 | 69 | 66 | 63 | 60 | 57 | 54 | 51 | 47 | 44 | 41 | 38 | 35 | 32 |
| 28 " | 51 | | | 101 | 98 | 95 | 91 | 88 | 85 | 82 | 79 | 75 | 72 | 69 | 66 | 63 | 59 | 56 | 53 | 50 | 47 | 43 | 40 | 37 | 33 | 30 | 27 | 24 |
| 29 " | 47 | 100 | 96 | 92 | 89 | 85 | 82 | 79 | 74 | 72 | 69 | 66 | 62 | 58 | 55 | 52 | 49 | 45 | 42 | 39 | 36 | 32 | 29 | 25 | 22 | 19 | 15 |
| 30 " | 44 | 95 | 90 | 86 | 83 | 80 | 76 | 73 | 69 | 66 | 62 | 59 | 55 | 52 | 49 | 45 | 41 | 38 | 34 | 31 | 28 | 25 | 21 | 17 | 14 | 11 | 7 |
| 31 " | 41 | 90 | 84 | 81 | 78 | 74 | 70 | 67 | 63 | 59 | 56 | 52 | 49 | 45 | 42 | 38 | 34 | 31 | 27 | 24 | 20 | 17 | 13 | 10 | 6 | 2 | |
| 32 " | 38 | 84 | 79 | 75 | 71 | 68 | 64 | 60 | 57 | 53 | 49 | 45 | 42 | 38 | 34 | 31 | 27 | 24 | 20 | 16 | 13 | 9 | 5 | | | | |
| 33 " | 35 | 79 | 73 | 70 | 66 | 62 | 58 | 54 | 51 | 47 | 43 | 39 | 35 | 31 | 28 | 24 | 20 | 16 | 13 | 9 | 5 | 1 | | | | | |
| 34 " | 33 | 73 | 68 | 64 | 60 | 56 | 52 | 49 | 44 | 40 | 37 | 33 | 28 | 25 | 21 | 17 | 13 | 9 | 5 | 1 | | | | | | | |
| 35 " | 31 | 68 | 62 | 58 | 54 | 50 | 46 | 42 | 38 | 34 | 30 | 26 | 22 | 18 | 14 | 10 | 5 | 2 | | | | | | | | | |
| 36 " | 28 | 63 | 57 | 53 | 49 | 44 | 40 | 36 | 32 | 28 | 24 | 19 | 15 | 11 | 7 | 3 | | | | | | | | | | | |
| 37 " | 26 | 57 | 51 | 47 | 43 | 38 | 34 | 30 | 26 | 22 | 17 | 13 | 9 | 4 | | | | | | | | | | | | | |
| 38 " | 24 | 52 | 45 | 41 | 37 | 32 | 28 | 24 | 19 | 15 | 11 | 6 | 2 | | | | | | | | | | | | | | |
| 39 " | 23 | 47 | 40 | 36 | 31 | 27 | 22 | 18 | 13 | 8 | 4 | | | | | | | | | | | | | | | | |
| 40 " | 21 | 41 | 34 | 30 | 26 | 21 | 16 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | |
| 41 " | 20 | 36 | 29 | 24 | 19 | 15 | 10 | 5 | 1 | | | | | | | | | | | | | | | | | | |
| 42 " | 18 | 31 | 24 | 18 | 14 | 9 | 4 | | | | | | | | | | | | | | | | | | | | |
| 43 " | 17 | 25 | 18 | 13 | 8 | 3 | | | | | | | | | | | | | | | | | | | | | |
| 44 " | 15 | 20 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| 45 " | 14 | 15 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| 46 " | 12 | 9 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 " | 11 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 " | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 " | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 " | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 " | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 " | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 " | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 " | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 " | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Endurance Point Scores

*How To Read This Table*

The first horizontal row across the top of the page represents the number of yards run in six seconds. The second horizontal row across the top of the page represents the point score for the number of yards run in six seconds. For example, the point score for 46 yard run in six seconds is 50. The first vertical column on the left side of the page represents the number of seconds for the 200-yard run. The second vertical column at the left represents the point score for the number of seconds for the 200-yard run. For example, the point score for 200 yards in 30 seconds is 44.

The endurance score is the point of intersection of the point score for the two-hundred-yard run and of that for the six-second run. For example, the endurance score for the two examples given previous are the point of intersection of the vertical column at the left beginning with 30 " with the horizontal row at the top headed by 46 yards; or in this case the endurance score is 45.

Point scores for endurance for fractions of seconds may be interpolated as follows: if the time for 200 yards is 30½ seconds, the point score is half way between 41 and 44, or 42½ which when rounded is 43. The point score for 46 yards run in six seconds is 50. The endurance score, then, is half way between 38 and 45, or 41½ which when rounded is 42.

A similar table is provided for indoor use. Here the contrasting runs are performed on a twenty-yard floor space. The six-second run is down and back for the twenty yards. The boy starts at one end, and just touches one foot over the other end line, and runs back. The distances are marked on the wall, every two yards from twenty to forty yards. In other ways, the race is conducted as the six-second run above.

SHUTTLE RUN

Yards Run in Two-Lap Shuttle in Six Seconds

| | | | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Point-Score, Six-Second Run | | | | | | | | | | |
| | | | 23 | 27 | 31 | 35 | 40 | 45 | 51 | 56 | 63 | 70 | 78 |
| 28 | 86 | | | | | | | | | | | 84 | 80 |
| 29 | 77 | | | | | | | 88 | 84 | 80 | 77 | 71 | 65 |
| 30 | 68 | | | 84 | 83 | 81 | 79 | 77 | 73 | 69 | 66 | 60 | 55 |
| 31 | 60 | | 80 | 78 | 76 | 74 | 71 | 68 | 64 | 61 | 56 | 52 | 47 |
| 32 | 54 | | 75 | 72 | 70 | 68 | 64 | 60 | 56 | 52 | 49 | 45 | 42 |
| 33 | 50 | | 70 | 67 | 64 | 62 | 58 | 53 | 50 | 46 | 43 | 41 | 38 |
| 34 | 46 | | 65 | 63 | 60 | 56 | 52 | 47 | 44 | 41 | 39 | 37 | 35 |
| 35 | 42 | | 61 | 59 | 56 | 52 | 47 | 43 | 40 | 38 | 36 | 34 | 33 |
| 36 | 40 | | 58 | 56 | 52 | 47 | 43 | 39 | 36 | 35 | 34 | 32 | 31 |
| 37 | 38 | | 55 | 52 | 49 | 43 | 40 | 36 | 34 | 33 | 32 | 30 | 29 |
| 38 | 36 | | 51 | 49 | 45 | 40 | 37 | 34 | 32 | 31 | 30 | 28 | 27 |
| 39 | 34 | | 48 | 45 | 42 | 37 | 35 | 32 | 30 | 29 | 28 | 26 | 25 |
| 40 | 32 | | 45 | 42 | 39 | 35 | 33 | 30 | 28 | 28 | 26 | 25 | 24 |
| 41 | 31 | | 42 | 39 | 36 | 33 | 31 | 28 | 27 | 26 | 24 | 23 | 22 |
| 42 | 29 | | 39 | 36 | 34 | 31 | 29 | 26 | 25 | 24 | 23 | 22 | 21 |
| 43 | 28 | | 37 | 34 | 32 | 29 | 27 | 25 | 24 | 23 | 22 | 21 | 20 |
| 44 | 27 | | 35 | 32 | 30 | 28 | 26 | 23 | 22 | 21 | 21 | 20 | |
| 45 | 26 | | 33 | 31 | 28 | 26 | 24 | 22 | 21 | 20 | 20 | | |
| 46 | 25 | | 31 | 29 | 27 | 25 | 23 | 21 | 20 | | | | |
| 47 | 24 | | 29 | 27 | 25 | 23 | 21 | 20 | | | | | |
| 48 | 23 | | 28 | 26 | 24 | 22 | 20 | Endurance Point-Scores | | | | | |
| 49 | 22 | | 26 | 25 | 23 | 21 | | | | | | | |
| 50 | 21 | | 25 | 23 | 21 | 20 | | | | | | | |
| 51 | 20 | | 23 | 21 | 20 | | | | | | | | |
| 52 | 19 | | 22 | 20 | | | | | | | | | |
| 53 | 18 | | 21 | 19 | | | | | | | | | |
| 54 | 17 | | 20 | | | | | | | | | | |

Point-Score, Eight-Lap Shuttle

The long run is eight laps on this twenty-yard course — down and back : times. It is timed in seconds and half seconds by the same technique :hat used for the two-hundred-yard run above. The chart below is to be l in the same way as the chart for the six-second run and the two-dred-yard run.

*ts of Track and Field Ability*

Competition in running, jumping, throwing, and feats of strength and urance has been engaged in by men and boys since the time of the Stone :. These activities are just as valuable today as they demand the ability :un, to jump, to throw, and to handle the weight of the body with the is; moreover, proficiency in many sports, such as basketball, baseball, :ball, tennis, or other ball games, is to a large extent based upon one or 'e of these fundamental abilities.

In general the old coaching adage is true: "A good big one will always t a good little one." To equalize the effects of age and size, the *Athletic ›tient* has been devised. This Athletic Quotient is the percentage the ıal performance bears to the average performance of a well-selected ıpling of performers of the same sex, age, height, and weight. The ›mpanying table is worked out to expediate the computation of this ›tient.

### *How To Use the Table*

Compute the Classification Index of the boy, for which the formula is as follows:

20 age (in years) *plus* 6 height (in inches)
*plus* 1 weight (in pounds)

(The age of individuals over seventeen years old is counted as seventeen years; that is, boys eighteen years old and older are counted as though they were seventeen years old. Age is counted as full years and half years. The year begins on the birthday.) Then, at the right of the sheet, find the column in which this Classification Index falls.

Next, select the events to be used, and for each event, run the record across the row to the right until the row meets the column in which the Classification Index falls. Record the value given at the intersection of this column and this row.

The table is prepared for ten events: a decathlon. If ten events are used, the sum of the values given in the column under the Classification Index for all ten events will be the Athletic Quotient for that boy. Let us follow through an example: the data are:

| | | | |
|---|---|---|---|
| Age | 15½ | Years | 20x 15½ =310 |
| Height | 65 | inches | 6x 65 =390 |
| Weight | 119 | pounds | 1x119 =119 |
| | | Classification Index | =819 |
| | | | Quotient Points |
| 50-yard dash | 7.4 | seconds | 10.50 |
| 100-yard dash | 13 | seconds | 11.54 |
| Standing broad jump | 6 | feet 9 inches | 9.68 |
| 3 standing broad jumps | 23 | feet | 11.54 |
| Running broad jump | 13 | feet 4 inches | 10.11 |
| Running high jump | 4 | feet 6 inches | 12.64 |
| 8-pound shot | 30 | feet 2 inches | 8.86 |
| Basketball throw for distance | 76 | feet | 8.14 |
| Chinning | 6 | | 7.82 |
| Floor dips | 16 | | 8.86 |
| | | Athletic Quotient | =99.73 |

The Classification Index is computed from the age, the height, and the weight, and is 819. This value is found in the column from 800 to 824. Now let us run the record of each event, as given above, across to this column, and record the *results*. The sum of these Quotient Points is 99.73, which number when rounded off gives a Quotient of 100, signifying that the performer has just average or "*normal*" athletic ability.

To use the table for fewer than ten events, the sum of the Quotient Points for the number of events used is multiplied by *ten* and divided by the *number* of events used. If, for example, only the first six of the events given above had been used, the sum of the Quotient Points would have been 66.05. This number multiplied by 10/7 equals 111.75, which when rounded off would give a Quotient of 112. The use of this Quotient makes boys of different ages and sizes fully comparable.

If, in the local program, there is to be a competition in a decathlon, two events must be selected from the runs, two from the broad jumps, one from the high jumps, two from the throws, and one from the chinning or dipping. The other two may be chosen from any of the groups. If only five events are to be used, one from each group should be chosen. If only four events are used, a run, and one event from each of any three other groups should be selected.

## Athletic Quotient

| | Points | 50-Yard Dash | 60-Yard Dash | 100-Yard Dash | 6″ Run for 60-Yd. Dash | 10″ Run for 100-Yd. Dash | 3 Potato Race | 5 Potato Race | Standing Broad Jump | 3 Standing Broad Jumps | Running Broad Jump | Standing High Jump | Running High Jump | 8-Pound Shot-put | 12-Pound Shot-put | 16-Pound Shot-put | Basketball Throw for Distance | Baseball Throw | Discus Throw | Chins or Pull-ups | Pull-ups |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90 | 10.4 | 12.0 | 18.8 | 67-6 | 138-6 | 22.0 | 41.0 | 4-4 | 13-8 | 7-4 | | | 17-0 | 14-8 | 13-0 | 51 | | 41 | | |
| 2 | 93 | 10.3 | 11.9 | 18.6 | 68-5 | 140-6 | 21.8 | 40.5 | 4-5 | 14-0 | 7-6 | 2-5 | 2-8 | 17-4 | 15-0 | 13-4 | 52 | 108 | | | |
| 3 | 97 | 10.2 | 11.8 | 18.4 | 69-5 | 142-5 | 21.6 | 40.0 | 4-6 | 14-2 | 7-8 | | | 17-8 | 15-4 | 13-8 | | 110 | 42 | | |
| 4 | 101 | 10.1 | 11.7 | 18.2 | 70-5 | 144-7 | 21.4 | 39.5 | 4-7 | 14-4 | 7-10 | | 2-9 | 18-0 | 15-8 | 14-0 | 53 | 113 | 43 | | 6 |
| 5 | 105 | 10.0 | 11.5 | 18.1 | 72-5 | 145-7 | 21.2 | 39.0 | 4-7½ | 14-6 | 8-0 | 2-6 | | 18-4 | 16-0 | 14-4 | 54 | 116 | 44 | | |
| 6 | 109 | 9.9 | 11.4 | 17.9 | 73-5 | 147-9 | 21.0 | 38.6 | 4-8 | 14-8 | 8-2 | | 2-10 | 18-8 | 16-4 | 14-8 | 55 | 118 | 45 | 2 | |
| 7 | 113 | 9.8 | 11.3 | 17.7 | 74-6 | 149-11 | 20.9 | 38.3 | 4-8 | 15-0 | 8-4 | | | 19-0 | 16-8 | | 56 | 121 | 46 | | 7 |
| 8 | 117 | 9.7 | 11.2 | 17.5 | 75-6 | 152-2 | 20.7 | 38.0 | 4-10 | 15-2 | | 2-7 | 2-11 | 19-4 | 17-0 | 15-0 | 57 | 124 | 47 | | |
| 9 | 122 | 9.6 | 11.1 | 17.3 | 76-7 | 154-5 | 20.5 | 37.6 | 4-10½ | 15-4 | 8-6 | | | 20-0 | 17-4 | 15-4 | 58 | 126 | 48 | | |
| 10 | 126 | 9.5 | 11.0 | 17.2 | 77-9 | 155-7 | 20.3 | 37.3 | 4-11 | 15-6 | 8-8 | 2-8 | 3-0 | 20-4 | 17-8 | 15-8 | 59 | 128 | 49 | | 8 |
| 11 | 131 | 9.4 | 10.9 | 17.0 | 78-10 | 157-11 | 20.1 | 37.0 | 5-0 | 15-8 | 8-10 | | | 20-8 | 18-0 | 16-0 | 60 | 131 | 50 | | |
| 12 | 137 | 9.3 | 10.7 | 16.8 | 81-2 | 160-4 | 19.9 | 36.5 | 5-1 | 16-0 | 9-2 | | 3-1 | 21-4 | 18-4 | 16-4 | 61 | 133 | 51 | | |
| 13 | 142 | 9.2 | 10.6 | 16.6 | 82-4 | 162-10 | 19.7 | 36.1 | 5-2 | 16-4 | 9-4 | 2-9 | | 21-8 | 18-8 | 16-8 | 62 | 136 | 52 | 3 | 9 |
| 14 | 147 | 9.1 | 10.5 | 16.5 | 83-7 | 164-1 | 19.5 | 35.7 | 5-3 | 16-8 | 9-6 | | 3-2 | 22-4 | 19-0 | 17-0 | 63 | 140 | 53 | | |
| 15 | 153 | 9.0 | 10.4 | 16.5 | 84-10 | 166-8 | 19.3 | 35.4 | 5-4 | 17-0 | 9-8 | 2-10 | | 22-8 | 19-8 | 17-8 | 64 | 143 | 55 | | 10 |
| 16 | 159 | 8.9 | 10.3 | 16.1 | 86-1 | 169-3 | 19.2 | 35.0 | 5-5 | 17-2 | 9-10 | | 3-3 | 23-4 | 20-0 | 18-0 | 65 | 145 | 56 | | |
| 17 | 165 | 8.8 | 10.2 | 15.9 | 87-4 | 172-0 | 19.0 | 34.6 | 5-6 | 17-5 | 10-0 | 2-11 | | 23-8 | 20-4 | 18-4 | 66 | 148 | 57 | | 11 |
| 18 | 172 | 8.7 | 10.0 | 15.7 | 90 | 174-9 | 18.8 | 34.2 | 5-7 | 17-7 | 10-2 | | 3-4 | 24-4 | 21-0 | 18-8 | 67 | 152 | 58 | 4 | |
| 19 | 179 | 8.6 | 9.9 | 15.5 | 91-4 | 177-7 | 18.6 | 33.8 | 5-8 | 18-0 | 10-6 | 3-0 | 3-5 | 25-0 | 21-4 | 19-4 | 68 | 156 | 60 | | 12 |
| 20 | 186 | 8.5 | 9.8 | 15.4 | 92-9 | 179-0 | 18.4 | 33.4 | 5-9 | 18-3 | 10-8 | | | 25-4 | 22-0 | 19-8 | 69 | 160 | 61 | | |
| 21 | 194 | 8.4 | 9.7 | 15.2 | 94-2 | 182-0 | 18.2 | 33.0 | 5-10 | 18-6 | 11-0 | 3-1 | 3-6 | 26-0 | 22-4 | 20-0 | 71 | 164 | 63 | 5 | 13 |
| 22 | 202 | 8.3 | 9.6 | 15.0 | 95-8 | 185-0 | 18.0 | 32.6 | 6-0 | 18-9 | 11-2 | | 3-7 | 26-8 | 23-0 | 20-8 | 72 | 168 | 64 | | 14 |
| 23 | 210 | 8.2 | 9.5 | 14.8 | 97-1 | 188-1 | 17.8 | 32.2 | 6-1 | 19-0 | 11-4 | 3-2 | | 27-4 | 23-8 | 21-0 | 73 | 172 | 66 | | 15 |
| 24 | 219 | 8.1 | 9.4 | 14.6 | 98-7 | 191-4 | 17.6 | 31.8 | 6-2 | 19-4 | 11-8 | | 3-8 | 28-0 | 24-0 | 21-8 | 74 | 176 | 67 | 6 | |
| 25 | 228 | 8.0 | 9.2 | 14.5 | 101-9 | 192-11 | 17.4 | 31.4 | 6-3 | 19-8 | 12-0 | 3-3 | 3-9 | 28-8 | 24-8 | 22-4 | 76 | 180 | 69 | | 16 |
| 26 | 238 | 7.9 | 9.1 | 14.3 | 103-4 | 196-3 | 17.2 | 31.0 | 6-5 | 20-0 | 12-2 | 3-4 | 3-10 | 29-4 | 25-4 | 22-8 | 77 | 184 | 71 | 7 | 17 |
| 27 | 248 | 7.8 | 9.0 | 14.1 | 105 | 199-8 | 17.0 | 30.6 | 6-6 | 20-4 | 12-6 | | | 30-0 | 26-0 | 23-4 | 79 | 188 | 73 | | 18 |
| 28 | 259 | 7.7 | 8.9 | 13.9 | 106-8 | 203-3 | 16.8 | 30.2 | 6-7 | 21-0 | 12-10 | 3-5 | 3-11 | 31-0 | 26-8 | 24-0 | 80 | 196 | 75 | 8 | 19 |
| 29 | 271 | 7.6 | 8.8 | 13.7 | 108-5 | 206-10 | 16.6 | 29.8 | 6-9 | 21-4 | 13-2 | 3-6 | 4-0 | 31-8 | 27-4 | 24-8 | 82 | 200 | 77 | | 20 |
| 30 | 283 | 7.5 | 8.7 | 13.6 | 110-2 | 208-8 | 16.4 | 29.4 | 6-10 | 21-8 | 13-4 | | 4-1 | 32-8 | 28-4 | 25-4 | 84 | 204 | 79 | 9 | 21 |
| 31 | 295 | 7.4 | 8.5 | 13.4 | 113-10 | 212-6 | 16.2 | 29.0 | 7-0 | 22-0 | 13-8 | 3-7 | 4-2 | 33-8 | 29-0 | 26-0 | 85 | 212 | 81 | | 23 |
| 32 | 309 | 7.3 | 8.4 | 13.2 | 115-9 | 216-4 | 16.0 | 28.6 | 7-2 | 22-8 | 14-0 | 3-8 | 4-3 | 34-4 | 29-8 | 26-8 | 87 | 216 | 83 | 10 | 24 |
| 33 | 323 | 7.2 | 8.3 | 13.0 | 117-8 | 220-5 | 15.8 | 28.2 | 7-3 | 23-0 | 14-6 | | 4-4 | 35-4 | 30-8 | 27-4 | 89 | 224 | 86 | 11 | 25 |
| 34 | 338 | 7.1 | 8.2 | 12.8 | 119-8 | 224-6 | 15.6 | 27.9 | 7-5 | 23-4 | 14-10 | 3-9 | 4-5 | 36-4 | 31-4 | 28-4 | 91 | 228 | 88 | 12 | 27 |
| 35 | 354 | 7.0 | 8.1 | 12.7 | 121-8 | 226-8 | 15.4 | 27.5 | 7-7 | 24-0 | 15-2 | 3-10 | 4-6 | 37-8 | 32-4 | 29-0 | 93 | 236 | 91 | 13 | 29 |
| 36 | 371 | 6.9 | 8.0 | 12.5 | 123-9 | 231-0 | 15.2 | 27.1 | 7-9 | 24-4 | 15-8 | 3-11 | 4-7 | 38-8 | 33-4 | 30-0 | 95 | 244 | 93 | 14 | 31 |
| 37 | 389 | 6.8 | 7.8 | 12.3 | 128-1 | 235-6 | 15.0 | 26.7 | 7-11 | 25-0 | 16-0 | 4-0 | 4-8 | 39-8 | 34-4 | 30-8 | 97 | 252 | 96 | 15 | 32 |
| 38 | 407 | 6.7 | 7.7 | 12.1 | 130-4 | 240-1 | 14.8 | 26.3 | 8-0 | 25-4 | 16-6 | | 4-9 | 41-0 | 35-4 | 31-8 | 99 | 256 | 99 | 17 | 34 |
| 39 | 427 | 6.6 | 7.6 | 11.9 | 132-8 | 244-11 | 14.6 | 25.9 | 8-2 | 26-0 | 16-10 | 4-1 | 4-10 | 42-0 | 36-4 | 32-8 | 101 | 264 | 102 | 18 | 37 |
| 40 | 449 | 6.5 | 7.5 | 11.7 | 135 | 249-10 | 14.4 | 25.5 | 8-5 | 26-4 | 17-4 | 4-2 | 4-11 | 43-8 | 37-8 | 33-8 | 104 | 276 | 105 | 20 | 39 |
| 41 | 471 | 6.4 | 7.4 | 11.5 | 137-5 | 252-5 | 14.2 | 25.1 | 8-7 | 27-0 | 17-10 | 4-3 | 5-1 | 45-0 | 38-8 | 34-8 | 106 | 284 | 108 | 21 | 42 |
| 42 | 495 | 6.3 | 7.3 | 11.4 | 139-11 | 257-7 | 14.0 | 24.7 | 8-9 | 27-8 | 18-4 | 4-4 | 5-2 | 46-4 | 40-0 | 36-0 | 109 | 292 | 112 | 23 | 45 |
| 43 | 521 | 6.2 | 7.2 | 11.2 | 142-6 | 263-0 | 13.8 | 24.3 | 8-11 | 28-4 | 18-10 | 4-5 | 5-3 | 48-0 | 41-4 | 37-0 | 112 | 300 | 115 | 25 | 48 |
| 44 | 548 | 6.1 | 7.0 | 11.0 | 147-10 | 268-8 | 13.6 | 23.9 | 9-2 | 29-0 | 19-6 | 4-6 | 5-4 | 49-4 | 42-8 | 38-4 | 114 | 312 | 119 | 27 | 51 |
| 45 | 577 | 6.0 | 6.9 | 10.8 | 150-8 | 274-5 | 13.4 | 23.5 | 9-4 | 29-8 | 20-0 | 4-7 | 5-6 | 51-0 | 44-0 | 39-8 | 117 | 320 | 123 | 30 | 55 |
| 46 | 608 | 5.9 | 6.8 | 10.7 | 153-6 | 277-5 | 13.2 | 23.1 | 9-7 | 30-4 | 20-8 | 4-8 | 5-8 | 52-8 | 45-8 | 41-0 | 120 | 332 | 127 | 33 | 59 |
| 47 | 642 | 5.8 | 6.7 | 10.5 | 156-6 | 283-7 | 13.0 | 22.8 | 9-10 | 31-0 | 21-4 | 4-10 | 5-9 | 54-8 | 47-0 | 42-4 | 123 | 344 | 132 | 36 | 63 |
| 48 | 677 | 5.7 | 6.6 | 10.3 | 159-7 | 290-0 | 12.8 | 22.4 | 10-1 | 31-8 | 22-0 | 4-11 | 5-11 | 56-8 | 48-8 | 43-8 | 126 | 356 | 136 | 40 | 68 |
| 49 | 716 | 5.6 | 6.5 | 10.1 | 165-8 | 296-7 | 12.6 | 22.0 | 10-4 | 32-4 | 22-8 | 5-0 | 6-1 | 58-8 | 50-8 | 45-4 | 130 | 368 | 142 | 44 | 73 |
| 50 | 757 | 5.5 | 6.3 | 9.9 | 169-3 | 303-6 | 12.4 | 21.6 | 10-7 | 33-4 | 23-6 | 5-1 | 6-2 | 60-8 | 52-4 | 47-0 | 133 | 384 | 146 | 48 | 79 |
| 51 | 801 | 5.4 | 6.2 | 9.8 | 172-9 | 307-0 | 12.2 | 21.2 | 10-10 | 34-0 | 24-4 | 5-3 | 6-4 | 63-0 | 54-8 | 49-0 | 137 | 396 | 152 | 53 | 85 |
| 52 | 849 | 5.3 | 6.1 | 9.6 | 176-4 | 314-4 | 12.0 | 20.8 | 11-1 | 35-0 | 25-2 | 5-4 | 6-6 | 65-4 | 56-4 | 50-8 | 141 | 412 | 158 | 59 | 92 |
| 53 | 900 | 5.2 | 6.0 | 9.4 | 180 | 322-0 | 11.8 | 20.4 | 11-5 | 36-0 | 26-0 | 5-6 | 6-8 | 68-0 | 58-8 | 52-8 | 145 | 428 | 164 | 65 | 100 |

## Classification Index

| 500 to 524 | 525 to 549 | 550 to 574 | 575 to 599 | 600 to 624 | 625 to 649 | 650 to 674 | 675 to 699 | 700 to 724 | 725 to 749 | 750 to 774 | 775 to 799 | 800 to 824 | 825 to 849 | 850 to 874 | 875 to 899 | 900 to 924 | 925 to 949 | 950 to 974 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.23 | 6.02 | | | | | | | | | | | | | | | | | |
| 6.44 | 6.22 | | | | | | | | | | | | | | | | | |
| 6.71 | 6.49 | 6.23 | | | | | | | | | | | | | | | | |
| 6.97 | 6.76 | 6.48 | 6.20 | | | | | | | | | | | | | | | |
| 7.27 | 7.02 | 6.74 | 6.44 | 6.09 | | | | | | | | | | | | | | |
| 7.54 | 7.29 | 7.00 | 6.69 | 6.32 | | | | | | | | | | | | | | |
| 7.82 | 7.56 | 7.25 | 6.93 | 6.55 | 6.16 | | | | | | | | | | | | | |
| 8.10 | 7.83 | 7.51 | 7.18 | 6.78 | 6.38 | 6.01 | | | | | | | | | | | | |
| 8.44 | 8.16 | 7.83 | 7.48 | 7.07 | 6.65 | 6.27 | | | | | | | | | | | | |
| 8.72 | 8.43 | 8.09 | 7.73 | 7.30 | 6.87 | 6.47 | 6.11 | | | | | | | | | | | |
| 9.07 | 8.76 | 8.41 | 8.04 | 7.59 | 7.14 | 6.73 | 6.35 | | | | | | | | | | | |
| 9.48 | 9.16 | 8.79 | 8.40 | 7.94 | 7.47 | 7.04 | 6.64 | 6.26 | | | | | | | | | | |
| 9.83 | 9.50 | 9.11 | 8.71 | 8.23 | 7.74 | 7.29 | 6.89 | 6.49 | 6.14 | | | | | | | | | |
| 10.17 | 9.83 | 9.44 | 9.02 | 8.52 | 8.01 | 7.55 | 7.13 | 6.72 | 6.36 | 6.01 | | | | | | | | |
| 10.59 | 10.23 | 9.82 | 9.39 | 8.87 | 8.34 | 7.86 | 7.42 | 7.00 | 6.62 | 6.25 | | | | | | | | |
| 11.00 | 10.64 | 10.21 | 9.75 | 9.22 | 8.66 | 8.17 | 7.71 | 7.27 | 6.88 | 6.50 | 6.09 | | | | | | | |
| 11.42 | 11.04 | 10.59 | 10.12 | 9.57 | 8.99 | 8.47 | 8.00 | 7.54 | 7.14 | 6.74 | 6.32 | | | | | | | |
| 11.90 | 11.51 | 11.04 | 10.55 | 9.97 | 9.37 | 8.83 | 8.34 | 7.86 | 7.44 | 7.03 | 6.59 | 6.14 | | | | | | |
| 12.39 | 11.97 | 11.49 | 10.98 | 10.38 | 9.75 | 9.19 | 8.68 | 8.18 | 7.74 | 7.32 | 6.86 | 6.39 | | | | | | |
| 12.87 | 12.44 | 11.94 | 11.41 | 10.78 | 10.14 | 9.55 | 9.02 | 8.50 | 8.04 | 7.60 | 7.13 | 6.64 | 6.15 | | | | | |
| 13.43 | 12.98 | 12.45 | 11.90 | 11.25 | 10.57 | 9.96 | 9.41 | 8.87 | 8.39 | 7.93 | 7.43 | 6.93 | 6.42 | | | | | |
| 13.98 | 13.51 | 12.97 | 12.39 | 11.71 | 11.00 | 10.37 | 9.80 | 9.24 | 8.74 | 8.26 | 7.74 | 7.21 | 6.68 | 6.16 | | | | |
| 14.53 | 14.05 | 13.48 | 12.88 | 12.17 | 11.44 | 10.79 | 10.18 | 9.60 | 9.08 | 8.58 | 8.05 | 7.50 | 6.95 | 6.40 | | | | |
| 15.16 | 14.65 | 14.06 | 13.44 | 12.70 | 11.93 | 11.25 | 10.62 | 10.01 | 9.47 | 8.95 | 8.39 | 7.82 | 7.25 | 6.68 | 6.12 | | | |
| 15.88 | 15.25 | 14.63 | 13.99 | 13.22 | 12.43 | 11.71 | 11.06 | 10.43 | 9.86 | 9.32 | 8.74 | 8.14 | 7.54 | 6.95 | 6.37 | | | |
| 16.47 | 15.92 | 15.28 | 14.60 | 13.80 | 12.97 | 12.22 | 11.54 | 10.88 | 10.29 | 9.73 | 9.12 | 8.50 | 7.88 | 7.26 | 6.65 | 6.08 | | |
| 17.16 | 16.59 | 15.92 | 15.21 | 14.38 | 13.51 | 12.74 | 12.03 | 11.34 | 10.73 | 10.13 | 9.50 | 8.86 | 8.21 | 7.56 | 6.93 | 6.33 | | |
| | 17.32 | 16.62 | 15.89 | 15.01 | 14.11 | 13.30 | 12.56 | 11.84 | 11.20 | 10.58 | 9.92 | 9.25 | 8.57 | 7.90 | 7.23 | 6.62 | 6.09 | |
| | | 17.39 | 16.63 | 15.71 | 14.77 | 13.92 | 13.14 | 12.39 | 11.72 | 11.07 | 10.38 | 9.68 | 8.97 | 8.26 | 7.57 | 6.92 | 6.37 | |
| | | | 17.36 | 16.41 | 15.42 | 14.54 | 13.72 | 12.94 | 12.24 | 11.57 | 10.84 | 10.11 | 9.36 | 8.63 | 7.91 | 7.23 | 6.65 | 6.10 |
| | | | | 17.10 | 16.08 | 15.15 | 14.31 | 13.49 | 12.76 | 12.06 | 11.30 | 10.54 | 9.76 | 8.99 | 8.24 | 7.54 | 6.93 | 6.36 |
| | | | | | 16.84 | 15.87 | 14.99 | 14.13 | 13.37 | 12.63 | 11.84 | 11.04 | 10.23 | 9.42 | 8.63 | 7.89 | 7.26 | 6.66 |
| | | | | | 17.60 | 16.59 | 15.66 | 14.77 | 13.97 | 13.20 | 12.38 | 11.54 | 10.69 | 9.85 | 9.02 | 8.25 | 7.59 | 6.96 |
| | | | | | | 17.36 | 16.39 | 15.45 | 14.62 | 13.81 | 12.95 | 12.07 | 11.18 | 10.30 | 9.44 | 8.63 | 7.94 | 7.28 |
| | | | | | | | 17.17 | 16.19 | 15.31 | 14.47 | 13.56 | 12.64 | 11.71 | 10.79 | 9.89 | 9.04 | 8.32 | 7.63 |
| | | | | | | | | 16.96 | 16.05 | 15.16 | 14.21 | 13.25 | 12.28 | 11.31 | 10.36 | 9.48 | 8.72 | 8.00 |
| | | | | | | | | 17.79 | 16.83 | 15.90 | 14.90 | 13.89 | 12.87 | 11.86 | 10.87 | 9.94 | 9.14 | 8.38 |
| | | | | | | | | | 17.60 | 16.63 | 15.59 | 14.54 | 13.47 | 12.41 | 11.37 | 10.40 | 9.57 | 8.77 |
| | | | | | | | | | | 17.45 | 16.36 | 15.25 | 14.13 | 13.02 | 11.93 | 10.91 | 10.04 | 9.20 |
| | | | | | | | | | | | 17.20 | 16.04 | 14.86 | 13.69 | 12.54 | 11.47 | 10.55 | 9.68 |
| | | | | | | | | | | | | 16.82 | 15.59 | 14.36 | 13.16 | 12.03 | 11.07 | 10.15 |
| | | | | | | | | | | | | 17.68 | 16.38 | 15.09 | 13.83 | 12.64 | 11.63 | 10.67 |
| | | | | | | | | | | | | | 17.24 | 15.88 | 14.55 | 13.31 | 12.24 | 11.23 |
| | | | | | | | | | | | | | | 16.71 | 15.31 | 14.00 | 12.88 | 11.81 |
| | | | | | | | | | | | | | | 17.59 | 16.12 | 14.74 | 13.56 | 12.44 |
| | | | | | | | | | | | | | | | | 16.98 | 15.53 | 14.29 | 13.10 |
| | | | | | | | | | | | | | | | | 17.93 | 16.40 | 15.09 | 13.84 |
| | | | | | | | | | | | | | | | | | 17.29 | 15.91 | 14.59 |
| | | | | | | | | | | | | | | | | | | 16.83 | 15.43 |
| | | | | | | | | | | | | | | | | | | 17.79 | 16.31 |
| | | | | | | | | | | | | | | | | | | | 17.26 |

*Rules of the Events*

1. *The Dashes.*—The 50-yard, the 60-yard, and the 100-yard dashes may be run in the usual way, with each boy being timed separately. This procedure is slow, however; therefore the 6-second run and the 10-second run may be used instead. If the 6-second run and the 10-second run are used, make lines with lime across the track to mark the distances given under both runs. Select only those distances corresponding to the zones between the best and the poorest times you would expect. For example, if the 6-second run is being used and the slowest boy could run the 60-yards in 11 seconds and the fastest in 6.8 seconds; then draw the lines given under the "6-second run" from 77 feet 8 inches to 153 feet 6 inches. From each class or group to be tested, train a group of inspectors. Then run the event as follows: The timer, who has a whistle, stands near the expected finish point. When the starter starts a heat of boys (he may use voice signals, but in this case should signal the timer by waving a handkerchief when he says, "Go"), the timer starts his watch, and then looks not at the runners but at the watch. Each inspector watches one runner. At exactly six seconds (or ten seconds as the case may be) the timer blows his whistle, and each inspector notes where his runner is. The runner is counted as being in the zone into which his leading foot has passed.

2. *The Potato Races.*—There are prepared for each runner two "boxes," which are 2 feet high, 1 foot square, and 4 inches deep. Three (or five) small blocks of wood are used for "potatoes" and are placed in the farther box. The boxes are placed with their *centers* exactly 30 feet apart. The starting and finishing line is drawn even with the outside edge of the first box and at right angles to the line between the boxes. The runner starts to the right or to the left of the first box, and runs toward the second box, picking up a block in the far box as he encircles it, and depositing it in the near box as he encircles that. When he has the last block, he runs across the finish line without depositing the block in the box. Each boy is timed separately.

3. *The Standing Broad Jump.*—The boy toes a take-off board or line, and without a preliminary jump (or "crow-hop"), jumps forward as far as he can. The measurement is made from the line of the toes to the mark on the ground or the mat closest to the take-off or "scratch" line, regardless of whether this mark is made by the heels, the hands, or another part of the body.

4. *Three Standing Broad Jumps.*—This jump is conducted in the same manner as the standing broad jump except that the boy must complete three jumps without stopping between jumps. Both feet must alight simultaneously on each jump. The measurement is from the starting line to the mark of the last jump.

In the gymnasium the administration of these jumps may be expedited by painting on the mats lines which are one inch apart and by marking them with the appropriate numbers. In this way the time for measuring each jump is saved.

5. *Running Broad Jump.*—This event is conducted in the usual manner according to the standard athletic rules.

6. *Standing High Jump.*—This event is conducted in the same manner as the running high jump except that the jumper jumps without any run, beginning the jump with the feet still on the ground and without taking a preliminary jump (or "crow-hop").

7. *Running High Jump.*—This event is conducted according to the standard athletic rules.

8. *Shot Put.*—This event is conducted according to the standard rules.

9. *Basketball Throw for Distance.*—The basketball throw is made from

·foot circle, but in all other respects the rules for the discus throw shall ɜrn. A new, standard ball should be used.

10. *Baseball Throw for Distance.*—Use a standard outdoor baseball. rules are the same as for the basketball throw for distance.

11. *Chinning.*—For rules, see page 245.

12. *Push-ups.*—For rules, see page 246.

### *Uses of This Table*

This type of competition may be used in a number of ways. First, it ɛes possible a whole-school competition in which every boy competes with ʏ other boy, but with the competition being according to a comparison ɬhe quotients and not according to actual records. In this way the llest boy has an equal chance with the largest.

Second, a competition between schools may be held with all the boys ɜach school competing. Average the quotients of the best 90 per cent of boys. This selection of the best 90 per cent obviates having some of poorest boys absent themselves from the competition to give the school advantage. If 90 per cent do not compete, use this number to divide in any case so that all the boys will be encouraged to participate and ɬhat the best boys will coach and encourage the poorest ones, instead of ouraging them.

Third, if the school can afford inexpensive celluloid badges, it is suggested ɬ these may be purchased in white, red, blue and gold colors. Give a te one to every boy achieving a quotient of 85. Give red, blue, and l for quotients of 100, 120, and 140, respectively. These badges are an ɔuragement for every boy to train and to participate.

### Other Events

If any school wishes to add other events, events can be selected from scoring tables from *The Measurement of Athletic Power.* Make another ɪmn by writing in the record of which the points correspond to the ɑber of points in the second column. If the desired event has no scoring le, methods of computing one are given in Chapter III of the book men- ɪed above. Advisory assistance in the preparation of such tables will given by the author, who may be addressed at the Field House, State ɪversity of Iowa, Iowa City.

### Combining these Tests

The scores of the tests described above should be interpreted separately; t is, muscular condition, running endurance, and agility should each be ɜrpreted by itself. An individual may be in excellent muscular condition not be in extremely good running condition. If a total *average picture* desired, add the four test scores for muscular condition plus twice the score for running endurance plus the scores for the two agility tests, s the athletic quotient, and divide by *ten.* The interpretation of this rage score will be as on page 244.

### *ɜer Tests*

It is desirable to extend the testing program beyond these physical fitness l athletic tests. These involves using tests, which because of copyright, not be reproduced here. Teachers are referred to standard text books such test programs and techniques of administering the tests selected. ɜe Bibliography, p. 296.)

# Part VI

# HOME AND COMMUNITY PROGRAMS

CHAPTER 27

# HOME AND COMMUNITY PROGRAMS OF EXERCISE AND RECREATION

A program of physical education for the community implies a great al more than a program for the schools. When people finish formal courses school, they are just beginning to learn how to live most fully, and, for e vast majority, by far the largest part of their lives lies before them. hool physical education should afford a preparation for the business of ing from then on. Part of this preparation consists in aiding the pupil develop to his fullest at the time—to become, for example, the best possible 1-year old—to help him in the evolution of all his powers. Part of that eparation should also be to teach him what he can do when he has left 100l, and is largely on his own. Part should be to teach him how he can lp his contemporaries and the next older generation to achieve that physical ucation which they did not get in school, but which can still be made ailable to them.

The high schools have usually failed to face reality as to their contribu-ns to possible future adult physical education and recreation. They have nerally assumed that if the major emphasis in high school physical educa-n was on individual and team sports, such as tennis, golf, badminton, chery, volleyball, and softball, training in these sports would carry over o good and adequate after-school habits of recreation and exercise. All the surveys have shown that this supposition is not true; and, moreover, the training in sports did so carry over, in almost no community are there ough facilities for such recreation to accommodate 5 per cent of the ghteen to forty–five year-old population. Yet this type of program for e high schools and colleges has been almost solely emphasized, and, as a sult, physical education has, *as a profession,* done very little for the adult, ter-school-age population; and the literature is strangely silent on methods r solving this problem.

This problem of the limitations on adult recreation imposed by a lack facilities may well be examined. If *half* of the adult population from ghteen to forty-five years of age wanted to engage in sports three times a ek, and if the distribution of the sports desired were about in proportion the present demands, for every one hundred thousand of *total* population, proximately the following facilities would be required: sixty golf courses, ur thousand tennis courts, thirty swimming pools, two hundred gymnasia, o hundred volleyball courts, two hundred softball diamonds, one hundred acks, fifty soccer and football fields, and fifty hardball diamonds. This t does not take into account sports such as archery and badminton, that ay be played in the backyard. New York with a population of seven llion boasts six hundred public tennis courts, seventeen public swimming ols, and other facilities of that order! Washington, D. C., with a popula-n of seven hundred thousand (as of 1940), has approximately ninety blic tennis courts, fifty paddle tennis courts, ten public swimming pools, irty-five baseball fields, thirty basketball courts (outdoor), forty football lds, seventy-five softball fields, forty volleyball courts, six tracks, and irty-four gymnasia. These facilities are far from the proportions cited ove. Obviously, any high school or college program that plans to meet e needs of the adult cannot stop with the teaching of the major sports ills. Extensive supplementary programs must be made available. The oportionate figures in Iowa are probably no more flattering.

It should be noted that the time spent in teaching sports skills in the

high schools and colleges should not be reduced; rather the amount of this teaching should be increased and improved. High school graduates should all be well versed in the fundamentals of those skills which are common to most of the individual and dual sports. They should also have had training in team sports, for team sports offer many potential social and character values, and leave a great deposit—even though the high school graduates may never play them after leaving school. They may play many of these games, however, for years after they leave school. It must not be forgotten, however, that if every adult now living were highly skilled in sports skills, and desired to participate, he could not participate, in this generation at least; *because of the lack of facilities.* Hence for many years to come, the team games and sports cannot be the sole answer to the adult physical education and recreational problems in Iowa.

Before the problem of adult physical education and recreation is discussed, a little background may well be painted in for a better understanding of the problems involved. For purpose of discussion, adult life may be divided into three periods:

1. From graduation from high school to about thirty-five years of age. —During this period the normal adult can carry on almost any activity unabated, if he wishes. This period may be called that of "young adulthood."

2. From thirty-five to about fifty or fifty-five years of age.—During this period the average person will usually slow down considerably, but he can and should be active, and should, if he elects to "stay in shape" by a continued normal regimen of exercise and by the ordinary laws of health, be able to participate in sports and other physical activities with enthusiasm and enjoyment. This period may be called that of "middle adulthood."

3. From fifty to fifty–five years of age on.—During this period most people will slow up decidedly, but they can engage in many activities with marked benefit and pleasure. This is the period of "late adulthood."

The discussion will be confined almost entirely to the first two groups, for the patterns are too well set for the oldest group, and probably few changes can be made in their habits until the conditions for two younger groups have been modified. When something has been done for the early and middle adult groups, many of the newer "late adults" will have graduated from the renovated "middle adult" group, and will present a much easier problem than they do now.

It should be kept in mind that the problem is partly to select a workable program, partly to work much of this program of activity into the high schools before the legal age for leaving school so that it may carry over into adult life, and partly to plan for the organization, promotion, and carrying out of this adult program. With these things in mind, what can be done?

*The Program*

1. In view of the lack of adequate facilities, many activities must be supplied to supplement the usual organization of the major physical recreation program. In this connection, it may be well to consider how most urban adults—laborers, clerks, shopkeepers, office workers, industrialists, teachers, and others—live. They arise as late as possible—and still be able to meet their appointments. They eat breakfast, go to work, and work, with a pause for lunch, until late afternoon. They then go home, do the chores, eat supper, and spend the evening engaging in their favorite pastimes, or in activities which they can afford. Then they go to bed. With such a routine, most people can not, or think that they can not, get away to recreate at sports. They will not, *unless very strongly motivated,* take an hour "to dress" and go out for daily hikes. They confine their exercise to gardening, raking of leaves, and shoveling of snow—and to certain forms of weekend recreation

that is usually participated in only during the summer months. Although the hope is that many might engage in sports, the facts are that they do not, be the reason a lack of time or insufficient motivation, and that if they were to choose to engage in sports regularly, only 5 per cent could be accommodated by the existing facilities. To meet these inadequacies, why should not an effective method of conditioning for use at home be prepared and sold? First, it is known that almost anything can be sold that is sufficiently advertised. Second, there is evidence that conditioning exercises may be engaged in joyfully, and for many years.* Hence, *as one measure* to provide opportunities for hygienic exercise, it is advocated that there be provided many kinds of home exercise and home recreation, adapted to both sexes and to all ages and present physical conditions. Such routines should include activities like weight training, rope skipping, and bag punching. A conditioning drill, weight training drills, and rope jumping, exercises, all suitable for use at home are provided in Part I of this manual.

Home exercise programs should be made available in each community in printed or mimeographed form for people who like their exercises presented that way; and, when possible, by local or state-wide radio broadcasting for people who need the inspiring voice — especially for the 9:30 housewife. Conditioning programs with slowly increasing dosages of regular exercise should be provided. An outline of conditioning exercises, adaptable for use by the whole family, is given at the end of this chapter.

2. Much attention needs to be given to games that can be played in the backyard and in the basement. For many people backyards do not exist, but for most Iowans they do. Badminton has already made a start, but it is too expensive for many; the birds, unfortunately, do not grow their own feathers. There are, however, many sports that can be played in small backyards, but they are not well known to many people, and information about them should be provided.

Some materials of the kind just mentioned can be secured from the National Recreation Association, 315 Fourth Avenue, New York 10, New York. Other materials should be devised. Games which the two sexes can play on a par are especially useful. Some court games can be adapted for the two sexes if an inner court is marked for the women; for example, in deck tennis, badminton, aerial tennis (aerial darts), or four-man volleyball (two on a side), an inner court may be marked with boundary lines 80 percent as long as those for the men. This difference in the courts compensates for the average differences of the sexes in reach and in speed. In such a game as volleyball, the women may play according to women's rules (with permission to bat the ball into the air to stop it and then to hit it a second time) while the men may play according to men's rules. In such play, spiking should be prohibited, and the net should be lower than for a game played between two teams of men. If horseshoes are engaged in by the two sexes, the men should pitch from forty feet, and the women from thirty feet.

At the State University of Iowa, the Division of Physical Education has experimented with a new co-recreational game. This game is played on a badminton court. A specially designed bird,* much heavier and much more rugged than the badminton bird, has been manufactured. The rules are like those for badminton, except that the woman plays with a badminton racket (or a paddle or a tennis paddle), while the man plays with handball gloves. This device evens the game, and makes it very vigorous for the man. The game is called "featherball."

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* In many Scandinavian universities there is a larger proportion of the students engaged in voluntary participation in gymnastics than there is of our university students in both required and voluntary sports.

* These birds are manufactured only by the Sells Aerial Tennis Company. 207 Westport Road, Kansas City 2, Missouri.

The basements of many homes have playrooms, but few people have thought of the possibility of a small handball court in the basement. The young wife who has played some tennis can give her husband a real tussle in this basement court if he hits a paddle tennis ball with his hands, and she with a *pair* of paddle tennis bats.

3. Gymnasium classes may be organized for women (usually not in the school gymnasium). These classes might meet in the middle of the morning and in the middle of the afternoon. In the winter season, lodge rooms, church parlors, recreation centers, or any other available rooms might be utilized. Many of the classes might be held in the parks in good weather. Similar twilight classes might be conducted for some men, particularly for middle-aged business men. These programs should be of a strenuous type calculated to develop physical fitness; they should not be just social programs. Many of the programs, for women particularly, might be conducted by married women who had formerly majored in physical education and had taught it, but who are now professionally inactive.

4. Many groups might be organized, each emphasizing a specific type of activity. Even if each group enrolled only a relatively small membership, the organization of enough such groups would care for a large number of people.

a. *Hiking.*—During the recent emergency, many automobile addicts rediscovered their legs. *Organized* hiking is *fun,* but it needs to be *organized* and *planned* and *advertised* — and to be engaged in by small groups. For the young and energetic, hiking may be changed to "road work," the alternate walking and running of the professional athlete (see Chapter 12.) When the family takes a hike, the ambitious members may range the fields like hunting dogs, while those who want only to walk, may take the straight path, accompanied by the intermittent runner when he walks. Hiking may be combined with nature study, overnight camping, short fishing trips, skating, skiing, running, and canoeing.

b. *Training Groups.*—These might, for example, hike to some place just out of a small city, or, in a large city, to a park, or perhaps they might do what is called road work, which is a combination of walking, slow running, and fast running. After arriving at their destination they might engage either in conditioning exercise drills or in games and sports, and then hike back. Some of these might meet in the morning before breakfast;* others might meet in the twilight period just before supper.

c. *Camping Groups.*—These might carry their camping equipment, and function particularly on weekends: hiking to the country on Saturday afternoon or evening, camping over night, and after some sports on Sunday morning, hiking back.

d. *Clubs for Weight Lifters and Weight Trainers.*—These clubs usually meet three times a week. The club room, if well ventilated, may be small—fifteen by twenty feet and, besides barbells and iron dumbbells, needs only a few benches, two weight platforms (see Chapter 10), a couple of mats, and a bar for chinning.

e. *Bowling.*—This activity may be promoted on commercial alleys.

f. *Archery.*—Organizations similar to Robinhood Clubs may often be established. Such groups carrying their equipment hike into the country where targets have already been prepared, shoot a while, and then hike back.

g. *Leagues for the Promotion of Various Sports.*—These leagues, wherever their formation is possible, take the form of ordinary twilight activity leagues, basketball leagues, or water polo leagues.

5. *Standards.*—Any constructive device offering good motivation should be used. One of these devices is a set of standards of physical condition.

* Morning training before breakfast should usually have any strenuous work preceded by a walk of half a mile to stabilize the splanchnic nervous functions. After such warm-up one may indulge without distress in strenuous activities.

Some standards are available,* but not all are adequate. There should be much work done in this area, especially for the late adult. It should and can be made fashionable to be above the standard for "good," and it should be remembered that it is the *results* that count.

6. *Expansion of Public and Private Agencies.*—The organization and active functioning of community centers, playgrounds, playground fieldhouses, Y.M.C.A.'s, Y.W.C.A.'s, Boys' Clubs, C.Y.O.'s, Y.W.H.A.'s, Y.M.H.A.'s, and Athletic Clubs should be encouraged, and their programs added to and integrated with the types of programs suggested above. These agencies can supply an outlet for many people wishing to carry on major sports, and other sports for which building facilities are needed, such as four-wall handball, squash, and basketball.

7. *Seasonal Activities.*—Skating, skiing, cross-country tramping, camping, canoeing, and mountain climbing, can be made available. It should not be forgotten that such programs should be planned for the whole year, not just for the summer.

8. *Swimming.*—Swimming facilities should be made available for non-swimmers and poor swimmers to learn how to swim well, and for regular recreational swimming, especially for adults. The pools should be widely used by the children in the regular school program. If only open air pools are available, summer swimming should be well organized. All such programs should include training in life saving.

*Organization*

If a functioning program of physical education is to be delivered to the adult, the organized machinery must be overhauled. A typical situation in a city where there are both a good program of physical education in the schools and a system of physical recreation for the city might well be examined.

In the high schools the physical education-recreation program is required, scheduled, convenient, and the facilities are available. The day the pupil leaves school, it is not required; if it *is* scheduled, he may not know it; the facilities may be inadequate; and the facilities that are available are frequently at a most inconvenient distance. In *very* few cities is this gap between school and after-school days bridged.

Furthermore, most of the adult population is convinced that systematic recreation "is not practicable." Under the present circumstances they are justified in so thinking. Many adults are not free before five or five-thirty in the afternoons, except on weekends; and except in the summer there is little daylight time left after that time. At present, few adults are, at this stage of their education, willing to change to informal clothing and proceed to some place at a distance from their homes to participate in a recreation program. If they were willing, most of them, because of the lack of facilities, would be able to take part in no sport other than walking.

Besides this, almost no communities have a recreation staff large enough to assume responsibility for changing these conditions and mental habits, nor is the budget to finance such a movement available. These are not insuperable obstacles to efficiency, but this type of mind-set upon the part of our people makes the organization of a recreation program difficult.

To meet such situations, the following devices are suggested:

1. The community should have an agent to coördinate the school program and the recreational program. This agent may be one of the existing per-

* C. H. McCloy, "Home Calisthenics," *Journal of Health and Physical Education*, XIV January, 1943), p. 18.
Research Committee, National Section on Women's Athletics, "Physical Performance Levels for High School Girls," *Journal of Health and Physical Education*, XIV (October, 1943), pp.445-6.
Arthur H Steinhaus and Others, *How To Keep Fit and Like It* (Chicago: Consolidated Book Publishers, Inc., 1943).

sonnel, or it may need to be another person. But the school staff and tl recreation staff *must work together* if the job for the adult is to be accon lished.

In cities having an independent organized recreation program, the recre tion staff, before children leave the junior or senior high school (many leav at the "legal age"), should be afforded an ample opportunity to present thei programs to these pupils. This presentation might be by talks, slides, movie printed matter, or by other means. When the pupils leave school, they shoul be followed up much as a Y. M. C. A. physical director would promote business men's gymnasium class. This follow-up will require the expenditur of money, but the results will justify it. The gap between the school progran and the physical education and recreation activities engaged in after student leave school must be bridged.

2. A program of the magnitude presented by such a task cannot b effected by a few men and women in an office; there must be a large grou of active workers, many of whom may be secured in the following manner:

a. School children from the fourth grade up may be used to spread this movement through the city. It is suggested that these children be used in a "Be the Community Physical Education and Recreation Leaders in Your City" movement. While in school these children* should be trained in *every type of activity that is feasible for use in after-school life.* These activities will range from badminton to conditioning exercises, from school dancing to soccer, from horseshoes to volleyball, from weight lifting to swimming, and from golf to rope skipping. The children should not only be taught these activities but should be taught why they are learning them, in order that they may successfully coöperate on the project of extending this program to the whole community. If the movement is to be functional, the schools and the recreation departments must coöperate in a follow-up program conducted by these children. This is a job for coöperative effort upon the part of both schools and recreation workers.

b. Young adults may be used to further this movement. First, the more enthusiastic ones may be used, and, later, the children who were formerly in the promotion groups of the schools. This is a job for the recreation administration.

c. Many adult members of a community may be used if a "political" type of organization is effected. Each community should be organized for physical education and recreation as thoroughly as it is for politics. Where politics are "hot," the city has a worker for every block, and other workers for every ward. The OCD air-aid organization, which formerly existed in almost every community of the country, might be taken as a pattern. In such a set-up the aim should be that every type of member of the community be used: school children, parents, club women, and Legionnaires. Fortunately, the progress of such a movement would be facilitated as people became interested in the program and as the enthusiasts became the "block wardens." All of the workers mentioned above — school children and adults — should not only work for home conditioning programs, but for block sports parties, dances in the street, and locality hikes. It should be kept in mind that if even half of the 15 per cent of population (fourth to twelfth grades) announced a series of hikes — *and urged their families to participate* — and if the "block wardens" advertised the project and helped with the plans, the results would be far greater than would be the response to a mere announcement in the local papers. The utmost coöperation should, of course, be elicited from the papers and the local radio.

To accomplish such an organization and to effect such a program, there will have to be a well-planned *training program* in the schools for the train-

* About 15 per cent of the city's population is in the fourth to the twelfth grade, about 9 per cent being in the junior or senior high schools.

ing of the children, and a similar training program perhaps in the schools, or perhaps in the recreation department, for the training of the adults. And it will necessitate an administrative organization that would best be a joint responsibility, but with the best fitted person responsible for getting coöperation from all the agencies concerned. In many cities, of course, both the school and the recreation program will be under the Board of Education.

d. The most effective organizations in the community should be enlisted to initiate and promote such a comprehensive movement. Which organizations these will be, will differ from community to community. But after the late war there will be from eight to ten million people, including graduates of high schools having had an adequate program, who have recently had the experience of being in good physical condition, at least for a time. Many of those people will be in organizations such as the American Legion, Women's Clubs, and P. T. A.'s. Their help should be sought. The Legion has always been interested in such a program, but frequently has not known what to do about it. Women in Women's Clubs are well organized, are a potent force — and *they think in terms of children more than they think in terms of dollars.* In one large city in the Middle West, an organization of Playground Mothers is one of the most potent forces for the promotion of organized recreation in the whole community.

e. There must be progress in civic planning for facilities. If a city had recreational facilities that would be adequate for all citizens below fifty-five years of age, three-fourths of such facilities would now stand idle. People have not yet been educated in how to use them. Hence city planners, physical education experts, and experts in recreation should unite to study the problem progressively. The problem is, *if* the procedures proposed here, or others as effective or better, be inaugurated, what increase in demand might be confidently expected in five years? In ten years? Then plans for supplying those facilities that will probably be demanded within the next five years should be worked out. The problem should, of course, be re-studied every few years, and the goal changed as the situations seem to warrant such changes. The important thing is that the plans be well organized and not just grow haphazardly.

f. It is absolutely essential for all local workers in the fields of physical education, recreation, and health education to work together. They have too much to contribute to one another to proceed alone. United they will progress; divided they will retrogress. Petty jealousies and squabbles about organizational preferment must not stand in the way of progress in the health, morale, and character of the American people. Furthermore, there should be a much better coördination than there is now between all national and state agencies, as well as local professional agencies. Perhaps an over-all committee composed of the best minds in each such agency might aid in securing such coördination.

Since there must be an adequate organization of programs for nutrition and health education as well as for physical education and recreation, there must also be coöperation with the departments of health and with local and national agencies for health education; for healthful living is much more than exercise and recreation.

This type of community program — especially suited to Iowa's towns and cities — must evolve with experience and experimentation until patterns are developed that will have a maximum effectiveness. Hence activities and organized patterns that prove effective should be communicated to the office of the State Department of Public Instruction. Eventually this phase of the program should develop to the point of demanding a manual of its own.

## CONDITIONING EXERCISES FOR HOME USE

In the following set of conditioning exercises, the exercises are arranged in eight sets of movements. Within each group they are arranged in order

of severity. The first exercise in the group is gentle enough that it may safely be undertaken by the very weak and by the old — especially if the older people do the movements slowly. Frequently the last exercise in the group is so strenuous that only the well conditioned will wish to use it. The purpose of arranging the exercises in this manner is to present a set from which any member of the family may pick a combination that is appropriate to his or her strength and general physical condition. Each person will select only one exercise from each group. It is suggested that everyone begin with the first exercise in the group and use this until it becomes easy to do — and then progress to the next one, and so on, until an exercise of appropriate dosage for the needs and desires of the individual is reached.

It is suggested that all the exercises be done to four counts, even the two-count exercises, which will, of course, be done twice to four counts. It is further suggested that, with the exception of the stationary run, in the beginning most people do only four four-count movements of each exercise, later working up about one or two movements a week until a maximum of about twelve such movements is reached. The use of the cumulative count is recommended (see p. 49).

## I. Abdominal Exercises

Note: Some of these exercises may well be done in bed before the individual arises.

a. *Curls*

S. P. Lying on back, hands on fronts of thighs.
Mov. 1. Raise head and shoulders from the floor, sliding hands down fronts of thighs until finger tips touch knees.
2. Recover to starting position.
3. Repeat *1*.
4. Repeat *2*.

b. *Rowing Exercise*

S. P. On back, arms upward (if the exercise is done in bed — arms forward or sideward).
Mov. 1. Sit up, swinging arms to front horizontal, and bringing knees up to chest, heels against hips.
2. Recover to starting position.
3. Repeat *1*.
4. Repeat *2*.

c. *The Rocker*

S. P. Lying on back, arms sideward, soles of feet together.
Mov. 1. Raise legs slightly from the floor, separating knees widely, and bringing feet up toward chest (this raises hips from the floor, and results in a movement like rocking up on the lumbar spine).
2. Recover to starting position.
3. Repeat *1*.
4. Repeat *2*.

d. *Sit-ups*

S. P. Lying on back, hands behind head, feet apart about eighteen inches, and held down if necessary.
Mov. 1. Sit up and touch right elbow to left knee.
2. Recover to starting position.
3. Sit up and touch left elbow to right knee.
4. Recover to starting position.

## II. Arm and Shoulder Exercises

*Push Downs*

S. P. Standing, elbows slightly bent, hands beside hips, and palms down, as though about to push downward on the top of a table.

Mov. 1. Press down *hard* with palms, pressing downward and slightly backward behind hips. At the same time, raise chest high, pull in abdomen, and pull chin in hard.
2. Recover to starting position.
3. Repeat *1.*
4. Repeat *2.*

*Limp-Body Push-ups*

S. P. Lying face down on floor, hands on floor beside shoulders, elbows close to sides.

Mov. 1. Push up the upper trunk and head by pushing downward with hands. (This is like Push-ups — see Exercise d of this series — except that body from waist down is relaxed, thus lessening the weight to be raised.)
2. Recover to starting position.
3. Repeat *1.*
4. Repeat *2.*

*Knee Push-ups*

S. P. Lying face down on floor, hands on floor beside shoulders, elbows close to sides, knees bent at right angles.

Mov. 1. Push up with arms, keeping body straight from knees to shoulders.
2. Recover to starting position.
3. Repeat *1.*
4. Repeat *2.*

*Push-ups*

S. P. Lying face down on floor, hands on floor beside shoulders, elbows close to sides, weight resting on toes, hands and chest.

Mov. 1. Push up with arms, keeping body straight from feet to shoulders.
2. Recover to starting position.
3. Repeat *1.*
4. Repeat *2.*

## III. Back Exercises

*Bend and Arch*

S. P. Standing, feet in side straddle position, hands on hips.

Mov. 1. Bend forward at waist, bending the back as far down as possible. Keep knees straight.
2. Straighten trunk to a position of a forward forty-five degree bend, upper back as straight as possible, and chin pulled in and back as much as possible.
3. Repeat *1.*
4. Recover to starting position.

This exercise should not be done fast. It can be made more strenuous if the hands are held behind the head.

*Back Lifts*

S. P. Lying face down on the floor, hands clasped behind head, elbows high from floor.

Mov. 1. Raise chest and legs (with knees straight) from the floor, pulling head and elbows back hard.
2. Recover to starting position.

3. Repeat *1.*
4. Repeat *2.*

This exercise may be made easier if the hands are clasped behind hips instead of behind head.

## IV. General Exercises

NOTE: Elderly persons should omit this group.

a. *One Leg Squat Thrust*

S. P. Standing.

Mov. 1. Squat down to the squat rest position, hands on the floor in front of feet.
2. Thrust left leg backward to full extension.
3. Return to squat rest position.
4. Return to original position.

b. *Mountain Climber*

S. P. Hands on the floor, left leg at the squat, right leg extended backward fully.

Mov. 1. Exchange position of feet with a jump.
2. Again exchange position of feet.
3. Repeat *1.*
4. Repeat *2.*

c. *Squat Thrust*

S. P. Standing.

Mov. 1. Squat rest position, knees bent, and hands on floor in front of feet.
2. Thrust both legs backward fully.
3. Return to first position.
4. Return to starting position.

d. *Arch Thrust*

Same as the squat thrust, except that when feet are thrust backward, one foot is elevated from the floor about twenty-four inches. Both knees are straight, and only the lower foot rests on the floor. The legs are alternated in being raised.

(Note: It is also possible to do Exercises c and d from the squat rest position, simply thrusting legs back.)

## V. Shoulder Posture Exercises

a. *Shoulder Puller*

S. P. Standing, trunk inclined forward forty-five degrees, arms forward, palms down.

Mov. 1. Swing arms sideward and backward, at the same time pulling chin back hard; then relax slightly.
2. Again pull arms backward hard, pulling chin back, and again relax.
3. Repeat second count.
4. Return to starting position.

The movement is a slow one, strongly executed.

b. *Shoulder Blade Roller*

S. P. Hands clasped behind hips.

Mov. 1. Roll shoulder blades backward and downward as hard as possible, at the same time pulling chin back hard. The abdomen should be pulled in to keep the lower back from being too much hyperextended.
2. Relax to starting position.
3. Repeat *1.*
4. Repeat *2.*

## VI. Waist and Hip Exercises

1. *Side Bend*

S. P. Feet in side straddle position, hands behind head.
Mov.. 1. Bend sideward left.
2. Return to starting position.
3. Bend sideward right.
4. Return to starting position.

(Note: This exercise may be modified by doing the movement continuously, and also by starting with hands on hips rather than behind head.)

2. *The Bobber*

S. P. Feet in side straddle position, hands on hips, trunk erect.
Mov. 1. Bend forward, with knees straight, and try to touch the floor between feet, and then relax slightly.
2. "Bob" downward, and touch the floor about six inches farther forward, and again relax slightly.
3. Again "bob" downward, and this time touch the floor still farther forward, and then relax.
4. Return to the starting position.

(Note: In doing this exercise, the performer will touch the floor farther and farther forward, but always with the knees straight. Those who cannot touch the floor at all will go down as far as possible without undue strain on the backs of the legs.)

3. *Rotate and Bend*

S. P. Feet in side straddle position, arms overhead.
Mov. 1. Rotate trunk to the left, and then bend forward over left hip, and swing arms down, touching floor with both hands beside left foot.
2. Return to the starting position.
3. Return *1* to the right.
4. Return to the starting position.

## VII. Leg Exercises

1. *Squat Rest*

S. P. Standing.
Mov. 1. Lower body to the squat rest position, hands on floor in front of feet, and both knees fully bent. The back should be straight.
2. Return to the starting position.
3. Repeat *1.*
4. Repeat *2.*

2. *Full Squats*

S. P. Standing.
Mov. 1. Bend both knees fully, with trunk erect. Swing arms forward at the same time for balance.
2. Return to the starting position.
3. Repeat *1.*
4. Repeat *2.*

(Note: For old people or those who are too heavy, this exercise can be done with less dosage and with less strain on the knees if the feet are separated about twelve inches, with the toes turned out somewhat, the squatting being done with the feet flat on the floor.)

c. *Stationary Run*

S. P. Standing.

Mov. Do a running movement in place, lifting knees to the height of hips, and swinging arms vigorously in the normal running movement. This should be done until the individual is moderately "winded." This is an excellent exercise, and should be used if practicable.

d. *Squat Jumps*

S. P. Left foot advanced about the length of one foot (heel about even with opposite toe) and hands clasped on top of head.

Mov. 1. Bend knees and drop down until left hip is about on top of left heel, and then jump upward with the bounce until both legs are straight and until feet have left the floor very slightly with the jump.
2. Exchange the forward and backward position of feet, and drop down until right hip is on right heel, and continue.
3. Repeat *1*.
4. Repeat *2*.

The performer can make this exercise still more severe by jumping higher.

## VIII. Lower Leg and Feet Exercise

*Toes and Heels*

S. P. Hands on hips, feet separated slightly and toes pointed inward about thirty degrees.

Mov. 1. Rise on toes high and hard, and inhale, pressing downward on hips with hands.
2. Drop heels to floor and rise on heels hard, exhaling fully.
3. Repeat *1*.
4. Repeat *2*.

# Part VII

# HEALTH EXAMINATION AND MENTAL HEALTH

CHAPTER 28

# HEALTH EXAMINATION

## *The Value of Medical Examinations*

The proposed program of physical education for high school students requires that a careful evaluation of the physical fitness of the pupils taking part be made as a safeguard for them and the school authorities. The importance of such a procedure is due to the strenuous nature of the activities and the age of the group involved.

Individuals of high school age are passing through an important period of physical, physiological, and emotional development and change. During this period of rapid growth when the bodily demands are increased, care should be taken to ascertain the ability to take on an added load. At this time of life glandular systems are also undergoing changes and are subject to upsets and imbalance that might preclude taking on additional burdens.

While the body is undergoing these physical and physiological changes of adolescence, certain latent defects sometimes make their appearance. A quiescent childhood infection with tuberculosis may flare up into activity. Tuberculin tests and chest X-rays of all children at this time of life should be made. Defective hearts may develop from an earlier rheumatic fever. Potential defects of this kind and other defects can be found only by thorough medical examinations.

A complete medical examination is not only essential to determine which students are capable of vigorous exercise, but also affords an opportunity to detect existing defects that may be remedied.

## *What Constitutes a Good Medical Examination?*

A good health examination is divided into three important divisions: history, physical examination, and evaluation or classification.

1. The history, which may be taken by trained lay personnel, should be very complete. It should include details concerning the home life, such as family status, personal habits, loss or gain of weight, amount of work, amount of sleep, emotional state, and nutrition. Forced exercise is harmful, especially to the heart and lungs, if the growing child is in a state of poor nutrition. The history of previous illnesses is necessary, for many such illnesses may have left the body tissues in a poor state. Examples of such diseases are scarlet fever, diphtheria, pneumonia, tuberculosis, ear infections, and especially, rheumatic fever. The history of injuries to the head and joints may serve as a warning and prevent many disabilities resulting from certain forms of contact sports.
2. The physical examination should always be stressed, although there are some procedures that do not directly apply to the present state of physical fitness. A physical examination, of course, is done most accurately by a competent medical man. A hasty and poorly carried out examination may miss many minor ailments which do not show up in ordinary activities of life, but which may develop into something very serious when people engage in strenuous programs. Also a poorly processed examination will not win the confidence of the pupil, and future coöperation will not be good. By "processing" is meant the organization of the examination procedures to enable much of the detail to be assumed by others; thus the physician is released to give his time exclusively to the purely medical phases of the examination. For example, one teacher may organize and direct the traffic of pupils through the various batteries of examiners, so that there is no lost time. Another teacher, trained for the task, may

test vision by the use of the Snellen Charts. A third may examine the acuity of hearing. Another (if no dentist is available) may be trained to examine the teeth. A person with some training in chemistry may easily be taught to analyze the urine, and so on. Before the pupils come to the examinations, their histories may be filled in during a home room period under the guidance of the nurse or a physical education teacher. With this kind of organization, the physician can do an acceptably thorough examination in ten minutes of his own time per pupil.

3. After the history and physical examination are finished, an evaluation of the findings is necessary. The ultimate classification of the pupil must be made according to his class in the physical education program of the school. There must be a complete understanding between the medical man and the physical education instructor and between them and the parents. The parents must be made acquainted with the defects and how the remediable defects may be corrected. The physical education instructor should help the medical man classify the various groups in order that both may know the facts and the degree of exercise to be recommended. The physical education instructor should be taught to be constantly on the outlook for things which might show up with exercise and which were not elicited in a routine examination, as well as to carry out the recommendations of the physician. During the first weeks, certain defects aggravated by exercise, but not detected by the physical examination, may be revealed.

The carrying out of such a health examination throughout the state must be adapted to the community involved. It is to be stressed that in any given case the examination should be as nearly complete as possible. This, of course, depends upon the size of school and the personnel available, including, preferably, a doctor, a dentist, a nurse, and a well trained physical education instructor. If such a staff is not available, a committee of interested people can solve the physical examination problem in one of many ways, by the use of the family physician, a doctor or two in the community, or the County Medical Society.

If the family physician makes the examination, he should be asked to fill in the blank used by the schools, and to state that he has examined for all of the items, not just to send a note to the effect that the child is normal.

If there is doubt as to which method should be used, it is well to consult the officers of the County Medical Society. The Society will discuss the matter, and aid in arriving at a constructive solution.

If at all possible, a health examination should be made at the beginning of each year and the results reviewed during the following year.

The following forms for recording health history and physical examinations are recommended. They may be used when the services of a physician and dentist are available. Other forms to be used when teachers do the inspecting are given later in this chapter.

Form 1

HEALTH EXAMINATION RECORD FORM

Health Examination Record

School.....

Name..... Date of Birth.....
Last First Middle Day Month Year

Address.....

Name of Parent or Guardian.....

Personal History

Approximately at what age have you had the following diseases?.....

Appendicitis.....Allergy.....Diabetes.....Pleurisy.....

Meningitis.....Measles.....Chicken Pox.....Enlarged Glands.....

Poliomyelitis.....Tuberculosis.....Whooping Cough.....Typhoid Fever.....

Diphtheria.....Pneumonia.....Mumps.....Skin Disease.....

Influenza.....Nervous Trouble.....Rheumatic Fever.....

Other Disease.....

Have you had Ear Trouble?.....Sinus Trouble?.....Head Colds?.....

Sore Throats?.....Chest Colds?.....Headaches.....Dizziness?.....

Fainting?.....Do You Fatigue Easily?.....

Do Any Effects of Illness Persist?.....If So, What?.....

What Weakness or Tendency to Ill Health Have You?.....

What Injuries Have You Had? (Give Dates).....

What Operations Have You Had (Give Dates).....

When Did You Have a Thorough Examination of Teeth?.....

— — — — — — — — — — Fold Here — — — — — — — — — —

Habits and Behavior (Good Fair Poor) (Yes and No)

Sleeping..... Alcohol.....

Eating..... Tobacco.....

Elimination..... Coffee..... Nail Biting..... Sensitive.....

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What Work Other Than School?.....

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Form 2

PHYSICAL EXAMINATION FORM

(Front)

Physical Examination

School.....

Name..... Address..... Date.....

Age..... Height..... Weight..... Color..... Posture..... Sex.....

Development..... Skin..... Nutrition..... Spine.....

Eyes..... Vision.....OD.....OS..... Corrected Vision.....OD.....OS.....

Ears..... Cerumen..... Drum..... Hearing.....

Nose.....

Tonsils..... Chest.....

Lungs..... Heart.....

Blood Pressure..... Systolic..... Diastolic..... Pulse (Rate-Rhythm).....

Abdomen.....

Extremities: Upper..... JTS.....

..... Lower..... JTS.....

Feet..... Arches..... Toes.....

Tests .....(Date)—Results, Immunizations..... Dates.....

Tuberculin ..... Small Pox Today..Scar Yes( )–No( )

Schick ..... Diphtheria .....

Dick ..... Typhoid .....

Anemia ..... Scarlet Fever .....

Blood for Syphilis..... Tetanus .....

Urine.....

X-ray.....

.....

Comments.....

.....

.....

(Obverse)

Teeth.....

Right 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 Left

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

(Circle Missing Teeth) (Cross Recommended Extraction)

(Check Needed Fillings)

Prophylaxis Needed..... Yes ( ).....No ( ).....

Signature.....D.D.S.

Date.....

Positive Findings .....

.....

Recommendation.....

.....

..... Signature .....M.D.

**Back**

*Techniques of Arranging for School Medical Examinations*

The program of physical examinations will be influenced by local conditions, varying in different communities. The term "examination" as used here refers only to the procedure of the physician and the dentist, while "inspection" refers to the procedure of the nurse or the teacher. Since the examinations should be planned so that they will have permanent rather than temporary value, it is essential that any plan (both in its formulation and operation) for them should have the guidance of the local medical society.

The objectives of a complete medical examination program are to (1) determine what students are capable of taking physical exercise, (2) detect existing defects, and (3) arrange for correction of remediable defects.

The following are examples of methods which may be developed for the physical examination program. Examinations by the family doctor and dentist are most desirable if it is possible to arrange for them.

1. The student sees his family physician on the same basis that he would see him for any type of medical advice. A certificate as to his physical fitness, together with a completely filled out school examination blank, would be given him to take to the proper school authorities. These services should be considered of sufficient value to merit some financial consideration.

2. Schools having a school physician could arrange for him to add these examinations to his other duties. Schools without a school physician may be able to employ one for this program by agreement with the county medical society.

3. When it is impossible to arrange for all students to have an examination by a physician, some one on the school staff, for example, the teacher of physical education, may be delegated to select the students for special activities in accordance with the plan for physical inspection described on page 284.

If it is necessary to resort to the third procedure, it should be considered only as an emergency measure, and plans should be made for complete medical examinations in the future. The medical society should be requested to appoint a physician to give instructions, individually or in a group, to the teacher or teachers who have been selected to do the inspection. Names of the officers of county medical societies may be obtained from Mr. W. H. McFarland, Department of Public Instruction, Statehouse, Des Moines, Iowa, or Dr. J. M. Hayek, State Department of Health, Des Moines, Iowa.

*Instructions to Teachers*

The selection of pupils (by the inspection method) for intensive physical training will require careful judgment and discrimination on the part of the teacher. The teacher may suspect that a defect exists, but he must avoid making a diagnosis. He should, however, advise the parents to have a medical examination of these pupils.

The selection of pupils by the teacher should be based on three factors: (1) Case History—Form 3. (2) Physical Inspection—Form 4. (3) Continuous, careful observation during the entire training period. The selection will lead to the differentiation of two groups: (1) the group which is physically able to begin full training and (2) the group which is not physically able to begin full training.

If the third plan (Techniques of Arranging for School Medical Examinations) on page 281 is agreed upon by the school administrator and the medical society, the following suggestions may prove helpful to the teacher:

1. Case History Form 3 should be sent home with the pupil to be completed. The report, if countersigned by one of the parents, is increased in value. Comments from the room teacher or others dealing with the pupil may be helpful.

2. Some time and thought should be given to evaluating the reports. All facts on the returned form that may have any bearing on the physical or emotional condition of the pupil may be marked with a colored pencil. These facts summarized at the end of the report may be a helpful reference in the inspection.

3. Privacy should be provided for the actual inspection.

4. If on the basis of the case history and inspection, the student seems entirely healthy, he may be admitted to the training program.

5. If on the basis of the case history and inspection, any physical impairment is found or *even suspected,* the parents should be informed (use Notice of Pupil's Health Needs Form 5), and the student should bring a letter from a physician.

6. Snellen E Charts for vision testing may be obtained from the Department of Public Instruction or from the local county superintendent of schools.

*Procedure for Follow-up on Physical Impairments*

1. Informing parents.—A personal conference in the home or at the school, relative to the health needs of the pupil will be most productive. Several conferences may be necessary. Symptoms only should be discussed. A *diagnosis should not be made.* The teacher can be very influential in encouraging the correction of remedial impairments.

2. Conference with pupils. High school pupils are old enough to take some responsibility for their health needs.

3. If the county provides the services of a public health nurse, she will be glad to make home visits to the parents to discuss the health needs of the pupils.

4. If the county *does not* provide the services of a public health nurse, the district advisory nurse of the State Department of Health will be glad to assist the superintendents of schools and the teachers in working out a satisfactory follow-up procedure. (See the list of Health Department district offices and counties served by each office. Because of frequent changes of personnel, names are not listed. Address inquiries to the District Health Office.)

References:

"What Every Teacher Should Know About the Physical Condition of Her Pupils" James Frederick Rogers, M.D., U. S. Government Printing Office, Pamphlet No. 68.

"Physical Fitness Through Physical Education," Federal Security Agency, U. S. Office of Education.

The following forms are recommended for use when no doctor is available to make the examinations and a teacher must inspect the students.

PUPIL CASE HISTORY FORM 3
(To be filled out at home)
School.....

Name..... Age..... Parent's Name.....
Address..... Grade..... Parent's Address.....
Family Physician..... Address.....
Family Dentist..... Address.....

A. Disease and Immunization History

| | | | |
|---|---|---|---|
| Measles | Year..... | Preventive Treatments: | |
| Whooping Cough | " ..... | Whooping Cough | Year..... |
| Chicken Pox | " ..... | Diphtheria | " ..... |
| Mumps | " ..... | Small pox | " ..... |
| Scarlet Fever | " ..... | Other | " ..... |
| Diphtheria | " ..... | Tests: | |
| Smallpox | " ..... | Tuberculin | " ..... |
| Poliomyelitis | | Schick (For Diphtheria) | " ..... |
| (Infantile Paralysis | " ..... | Dick (For Scarlet Fever) | " ..... |
| German Measles | " ..... | Blood | " ..... |
| Frequent Colds | " ..... | | |
| Pneumonia | " ..... | | |
| Rheumatism | " ..... | | |
| Exposure to | | | |
| Tuberculosis | " ..... | | |
| Others | " ..... | | |

Operations 1.....
2.....
3.....

B. Have you ever been a hospital patient? Yes.....No.....When?.....How long?
For what illness?.....

C. Have you had treatment by a physician or clinic within the past six months?
Yes.....No.....For what illnesses?.....When?.....
How long?.....Did you completely recover?.....

D. Do you now have any complaints regarding your health?.....
What do you feel would improve your physical condition? (Example, improve endurance, gain weight, etc.) 1.....
2..... 3.....
4.....
I go to bed at.....P.M. I arise at.....A.M.
For breakfast I usually eat.....
For lunch I usually eat.....
For supper I usually eat.....

Check any of the following attitudes which you feel might apply to you:

1. Irritable at times . . . . . Yes..... No.....
2. Irritable frequently . . . . . Yes..... No.....
3. Dislike many people . . . . . Yes..... No.....
4. Dislike few people . . . . . Yes..... No.....
5. Easily angered . . . . . Yes..... No.....
6. Easily depressed . . . . . Yes..... No.....
7. Shy . . . . . Yes..... No.....
8. Daydreams . . . . . Yes..... No.....
9. Get along well with people . . . . . Yes..... No.....
10. Willingly take part in school sports and activities Yes..... No.....

For recreation I like to.....
My hobby is.....
Parent's comment .....

Pupil's Name.....
Parent's Name.....

Comments from Room Teacher:

## PHYSICAL INSPECTION FORM 4

(To be used by Teacher)

School..... Date.....

Name..... Age..... Parent's Name.....

Address..... Grade.....

1. Height..... Weight.....
2. Eyes (Vision with glasses) R.....L..... Without glasses R.....L.....
3. General appearance (age, race, and heredity must be taken into consideration)

| | |
|---|---|
| Muscular development | Good.....Average.....Poor..... |
| Fatigues easily | Yes.....Average.....No..... |
| Fatty development | Fat.....Average.....Thin..... |
| Posture | Good.....Average.....Poor..... |
| Skin eruptions | Numerous.....A few.....None..... |
| Deformities of arms or legs | Severe.....Slight.....None..... |

4. Chest

Circumference of thorax at deepest inspiration..... Expiration.....
(at or just above the nipple level)

Expansion unequal on the two sides Yes.....No.....

5. Throat

| | |
|---|---|
| Enlargement of tonsils | Protrude to near midline..... |
| | Protrude half way to midline..... |
| | Protrude a quarter inch..... |
| | Do not protrude..... |
| Frequent sore throat | Yes.....No..... |
| Mouth breather | Yes.....No..... |

6. Teeth

| | |
|---|---|
| Cleanliness | Good..... Fair..... Poor..... |
| Cavities and missing teeth | Number of cavities.....Number missing..... |
| Gums (swelling, redness) | Marked..... Moderate.....None..... |

7. Heart and Circulation

Following moderate activity:

| | |
|---|---|
| Is the student panting unduly? . . . . | Yes..... No..... |
| Is any rapid movement of the heart visible on left side of thorax? . . . | Yes..... No..... |
| Is student pale and exhausted? . . . . | Yes..... No..... |
| Is there purplish color to lips or finger nails? | Yes..... No..... |

8 Abdomen

| | |
|---|---|
| Abdominal scars . . . . . | Yes..... No..... |
| Bulges in abdominal walls or groins . . | Yes..... No..... |
| Complaints of pains . . . . . | Yes..... No..... |

9. Back

| | |
|---|---|
| Prominent vertebrae . . . . . | Yes..... No..... |
| Discomfort in sitting or moving about . . | Yes..... No..... |

10. Feet

| | |
|---|---|
| Special shoes . . . . . | Yes..... No..... |
| Malformations . . . . . | Yes..... No..... |
| Scaling between or under toes . . . . | Yes..... No..... |

Remarks: (Teacher)

Signature.....
Teacher

NOTICE OF PUPIL'S HEALTH NEEDS FORM 5

School.....

To the Parent or Guardian of

.....

A physical inspection and daily observation indicate that this child shows an abnormal condition of.....

.....

and advise that you have him / her examined by a physician.

..... .....

Date Teacher

(These forms may be mimeographed)

STATE DEPARTMENT OF HEALTH

DISTRICT OFFICES AND COUNTIES SERVED

— — — — —

DISTRICT HEALTH SERVICE No. 1
Court House
Decorah, Iowa

| | | |
|---|---|---|
| Allamakee | Chickasaw | Mitchell |
| Black Hawk | Clayton | Winneshiek |
| Bremer | Fayette | Worth |
| Buchanan | Floyd | |
| Butler | Howard | |

DISTRICT HEALTH SERVICE No. 3
Spencer, Iowa

| | | |
|---|---|---|
| Buena Vista | Emmet | Osceola |
| Cherokee | Kossuth | Palo Alto |
| Clay | Lyon | Pocahontas |
| Dickinson | O'Brien | Sioux |

DISTRICT HEALTH SERVICE No. 4
City Hall
Sioux City, Iowa

| | | |
|---|---|---|
| Crawford | Monona | Woodbury |
| Ida | Plymouth | |

DISTRICT HEALTH SERVICE No. 5
Court House
Fort Dodge, Iowa

| | | |
|---|---|---|
| Calhoun | Greene | Sac |
| Carroll | Hamilton | Webster |
| Cerro Gordo | Hancock | Winnebago |
| Franklin | Humboldt | Wright |

DISTRICT HEALTH SERVICE No. 6
1027 Des Moines Street
Des Moines, Iowa

| | | |
|---|---|---|
| Adair | Guthrie | Marshall |
| Boone | Hardin | Polk |
| Dallas | Jasper | Story |
| Grundy | Madison | Warren |

## DISTRICT HEALTH SERVICE No. 7
Washington, Iowa

| | | |
|---|---|---|
| Benton | Keokuk | Washington |
| Iowa | Poweshiek | |
| Johnson | Tama | |

## DISTRICT HEALTH SERVICE No. 8
Manchester, Iowa

| | | |
|---|---|---|
| Cedar | Dubuque | Linn |
| Clinton | Jackson | Scott |
| Delaware | Jones | |

## DISTRICT HEALTH SERVICE No. 9
522 North Third Street
Burlington, Iowa

| | | |
|---|---|---|
| Des Moines | Lee | Van Buren |
| Henry | Louisa | |
| Jefferson | Muscatine | |

## DISTRICT HEALTH SERVICE No. 10
Professional Building
Centerville, Iowa

| | | |
|---|---|---|
| Appanoose | Lucas | Ringgold |
| Clarke | Mahaska | Union |
| Davis | Marion | Wapello |
| Decatur | Monroe | Wayne |

## DISTRICT HEALTH SERVICE No. 11
544 Fifth Street
Council Bluffs, Iowa

| | | |
|---|---|---|
| Adams | Harrison | Pottawattamie |
| Audubon | Mills | Shelby |
| Cass | Montgomery | Taylor |
| Fremont | Page | |

CHAPTER 29

# MENTAL HEALTH

*Importance of Detecting Mental Strains*

Most teachers are aware in a general way of the fact that mental health is important for the development of young boys and girls. The boy who does not coöperate well, who thinks that he must always be first, who cheats if he cannot get his way, who worries a great deal, or who does not get along with others is obviously handicapped in doing his best work. The important question is, "How can such boys be helped so that they will make a better adjustment?" If such behavior is a sign of mental strain, how can such strains be detected before they become very severe and how can they be removed and prevented?

These questions are important to all teachers but especially to the teacher of physical education. He is frequently closer to the boys than any other teacher. He sees them in such different situations as free-play periods and assigned-play periods. He, perhaps more than any other teacher, sees the boys in group games where they reveal how they react to others. They are very likely to come to him with their personal problems. It is important, therefore, that the physical education teacher be able to detect signs of mental strain, be able to interpret from the boys' behavior what lies back of the behavior, and how he can help them make a better adjustment.

*Mental Strains and Behavior*

To understand boys' behavior and to learn how to use such things as what boys do and how they do it as indicators of mental health, it will be helpful to follow through some of the simple facts about behavior.

There are certain basic motives, desires, or wants that every person is trying to fulfill. For example, when a healthy person is hungry, he does not stop, under ordinary conditions, until he gets something to eat. When he is fatigued he seeks rest. There are, in addition to these well known desires, others that are just as real but not so easy for the teacher to observe or describe. Every person wants to feel secure, secure that someone cares for him and is ready when he needs advice or comfort or help. Every person wants to feel that he is doing something worth while and that he has the respect of people whom he thinks important.

Now, if a person has difficulty in satisfying his feeling that he is doing something significant, if he feels inferior or inadequate, he will try various methods to overcome this feeling of inadequacy. He may increase his effort in some game or sport. If that procedure does not turn the trick, he may brag about something he owns or has developed. If he cannot think of anything real—some skill in which he really excells or something that he has that is really good—he may make up something and brag about a skill he may not have, or about some exploit in which he has not even taken part. Or he may do something entirely different. He may run away from his home and school and try to build himself up somewhere else. He may try other things.

One boy, for example, had a very famous father. Unfortunately, this father did not see to it that his boy acquired at least some competence of which the boy could be proud. The result was that when this boy found out in a basketball game that he was not the best player or in track that he was not the fastest runner, he tried other methods to overcome his feelings of inadequacy. Whenever the group sat down for some class work, he always seated himself on a table so that he would be apart from and

"higher" than the rest. He would not take part in gymnasium activities unless he could be the leader. He made up excuses. He began to cut classes.

If we look at this behavior without taking into account the motive, we may be inclined to say what this boy needs is a good "bawling out" and to be put in his place. When we look at this behavior in the light of the motive the boy is trying to satisfy and think of his various acts as methods for overcoming his feeling of inadequacy, we are inclined to say that the boy is on the wrong track, that the methods he is using are hurting him rather than helping him, and that he needs help in finding other methods for overcoming his feeling of inadequacy.

If we do not help the boy and if he should continue to be blocked in his attempt to build himself up, he is headed for trouble. That is the beginning of mental and emotional difficulties.

The goal in mental health is to help each person to develop methods for satisfying the basic demands or desires of the human personality in ways that will be helpful to him and to others. There are several basic demands or desires that every person is trying to satisfy, but the most important for the high school boy, in addition to hunger, thirst, fatigue, activity, and sex, are such demands as desire for a place in the group, power to do something worth while, approval by persons who are important, independence, and self-respect. There are many different words that may be used to describe the strivings of the human personality but these are enough to give the general idea. The desire for security has not been included, but this, while somewhat important at the adolescent level, seems more important at the younger age levels.

The important point to note is that when the person is blocked in his attempts to satisfy these demands, a mental strain is produced. When the strain first appears, the person will try ordinary methods of satisfying these demands. When he finds that they do not work, he will, unless he has very careful guidance, tend to resort to methods that are not helpful to him or to others. The boy in the example above tried such methods as always being first, or sitting so that he seemed more important than the others, and when these did not work, he tried to think up excuses.

If a person, to build up a feeling of doing something worth while, chooses methods that others do not like, the others may block him so that he becomes even more worried, more fearful, and more belligerent than he would otherwise be. In other words, his mental strain becomes increasingly severe.

*One Method of Detecting Mental Strain*

How can the physical education teacher detect such mental strains and how can he help to prevent them? There are two general approaches that he can use. On the one hand, he can observe what the boy, when playing in games and engaging in various activities in the gymnasium or on the field, does, how he does it, and how the others react to him. For example, if a boy always has to be first, picks a fight easily, brags a lot, and does not realize how the others react toward him, the teacher may begin to suspect that this boy feels rather inadequate, that he wants to avoid being made to feel powerless, but that he is not very good at selecting methods that will help him. Especially, since he does not realize how he is making the others feel toward him, the teacher may begin to suspect that the boy is rather worried about himself, that he feels his inadequacy keenly, and that he is thinking more and more about himself and less and less about the others.

Again, if a boy who is not well developed physically is very often late in getting into his gymnasium suit, presents many excuses for his absences from gymnasium periods, and is rather shy and does not take much part, the teacher may suspect that the boy may feel that he is different from, and perhaps inferior to the other boys and that he does not like the unfavorable

comparison. Or it may be that the activities in the gymnasium are not well suited to the boy's skills and that he really does not enjoy the work.

It is important to keep in mind that one behavior pattern taken by itself, such as fighting or dawdling, may not be as indicative as several patterns taken together. Human behavior is complex, there being several different causes for any given form of behavior. For example, fighting may be motivated by an attempt to build up self-esteem or to demonstrate to oneself that one has power, but it may also result from an abundance of energy and the enjoyment in using that energy. But when several kinds of behavior are observed in the same boy, the thoughtful teacher can get some fairly accurate ideas as to what demands the boy is trying to satisfy.

The teacher should watch for many different forms of behavior, such as a boy's always wanting to be first, being easily irritated, always seeking praise, flitting from one thing to another, giving up easily when difficulties are met, making many excuses, and cutting classes without good reason. Observation should be made not only of boisterous, aggressive, interfering behavior, but also of shyness, withdrawing, dawdling, and similar patterns. These are forms of behavior that are just as real and as important as the more aggressive types.

To help in interpreting the cluster of patterns that have been observed it will be useful to know what the many different causes of a given pattern may be. In such a book as Symond's *Mental Hygiene of the School Child* or Thom's *Normal Youth and Its Everyday Problems*, many cases are analyzed. By reading about cases closely related to those observed, the teacher will soon recognize what some of the common causes are. By putting together the probable causes of the several patterns that have been observed, the teacher will soon see that one or two causes run throughout the list. This gives a fairly good indication as to what desire the boy is trying to satisfy by his behavior.

*Another Method of Detecting Mental Strain*

Observing behavior is one method of detecting mental strains. Another method is to think of the basic needs of growing boys and then to examine the conditions under which the boys live at home, at school, and in the neighborhood to see whether these environments supply those needs; for example, the adolescent boy is striving to feel that he has a measure of independence, that he has the ability to make some decisions for himself. If this striving for a feeling of personal worth is blocked, he will be under a strain.

He will have some opportunity to make decisions for himself if there is a family council in his home, a student council in his school, and if his parents and teachers make full use of his ability to think and judge and see to it that he has many opportunities to decide for himself. He may have enough money, through an allowance and/or part-time job, with which to buy all his own clothes, his school supplies, and similar items. But if he does not have such opportunities —instead, if he has parents, teachers, and companions who are autocratic and dominate him, the chances are great that he will be blocked in his desire to demonstrate his ability to make independent decisions. He will then resort to all types of other methods to achieve his goal.

Accordingly, in relations with the boy's associates, his teachers, and his home, such questions as these may be asked:

1. Are the relationships in his home autocratic or democratic? Do his parents or his older brothers or sisters dominate him or does he have an opportunity to help make decisions?
2. Are the relationships in his school autocratic or democratic?
3. Does he have opportunities at home to do things and to possess things

that he thinks are worth while? Are his property rights respected by the other family members?

4. Does his work at school challenge him or does it seem unimportant, unreal, or far removed from his interest and needs?

5. Does he have several skills or abilities that help him to take a significant part in games and other kinds of activities with his associates?

6. Does he cultivate hobbies or other types of leisure time activities that help him feel that he is gaining in significant control over his environment? Is he proud to talk about the things he does on his own, or does he either keep silent or do a lot of bragging about them?

7. Do his parents at home and his teachers at school take enough interest in him so that he feels they really know him and that they really care for him?

8. Does he understand about his home conditions so that he does not feel either ashamed of them or overly superior about them?

9. As he grows older, is he learning how to get along with girls as well as with boys? Does he have a chance to cultivate such skills as the ability to dance and the ability to carry on an interesting conversation?

10. Do his parents and teachers help him to look at the effects of his activities and decisions some distance in the future so that he learns to take increasingly more consequences into account?

When these questions are examined, it can be seen that they relate to the opportunities the boy has for developing a feeling of status, personal worth, independence, and control over his environment. If such opportunities are not available, the boy will be blocked in meeting his fundamental personality demands, and mental strains will result.

*Putting the Two Methods Together*

In actual practice, the teacher, when detecting mental strains, can use both methods described above. He can observe the boy's behavior and see what kind of patterns appear. By knowing some of the causes of this behavior the teacher can get some good ideas as to what mental strains are present. In addition, the teacher can gradually become acquainted with the boy's home, school, and neighborhood, and in the light of the questions above see which conditions for good personality growth are present and which are absent. Also, results of various tests, such as intelligence and aptitude tests, may be available in the principal's office. There may also be other teachers who have visited the home. By putting the results of the two methods together, he can get a fairly good picture of the mental healthfulness of the boy. By making his findings available to all the other teachers in the school, he may aid them, too, in getting a better picture of the boy.

*Promoting Mental Health*

The teacher is not satisfied, however, merely with detecting the mental strains that may be present. He wants to do something about the condition. Suppose that a boy always wants to be first and will not play unless he can win. What can be done?

If the teacher has observed the behavior as described above, he will have a fairly good idea as to what desire the boy is trying to satisfy. When he knows what desire the boy is trying to satisfy, he will have made a good beginning at knowing how he can help him. For example, suppose that the teacher has observed the bragging, fighting type of behavior, and that from the home, school, and neighborhood conditions realizes that the boy does not see the importance of his work in school. The boy does not see the use of algebra, social studies, or other subjects, and he does not do well in them. He is not stimulated or challenged by them. He wants to spend all his time in the gymnasium. The way to help this boy is to work together with the

other teachers to help him see what mathematics and social science can mean to him. This is not easy to do on short notice, and all the methods are not yet known. But by using their ingenuity, they can usually think out several specific techniques. Perhaps the boy wants to become an airplane pilot, airplane designer, or a farmer. Giving him some real problems from these fields and showing him how the problems cannot be solved without a basic knowledge may be one way. Watching persons at work may be another.

Sometimes the bragging, fighting kind of behavior is brought about by the fact that the boy does not have a sufficient number of skills to play an important part in games with others. He may not be a good batter, he may not have learned a good method of swimming and he may be clumsy in his running. There may have been no one in elementary school or at home who has taken the time to help him. He may lack so many ordinary skills that when he plays with others he is always at a disadvantage.

Similarly he may not have enough background of experience, so that his conversation with others, his school work, especially such subjects as theme writing and social science, may be more difficult for him than they need to be.

The way to guide such boys is to provide some opportunities for them to learn an assortment of ordinary skills and to provide opportunities to them for acquiring a broader background of experience.

Not only is it helpful if the work at school, at home, and in the part-time job develops in the boy a feeling of being able to do something significant and worthwhile, but the free-time activities or avocations should also contribute to the basic personality demands. It will usually help a boy if he has a hobby or two in which he is making strides forward each week or each month. The physical education teacher, the teacher of crafts, of science, of literature—all have a part to play in helping boys of different interests.

There are many ways in which the teacher can promote mental health. It will be helpful if two things are remembered: First, the best way to figure out how to change a boy's behavior is to find out what the fundamental causes of the behavior are. This gives the clue for changing it. Secondly, the very fact that a teacher is sincerely trying to understand each individual boy, to see situations and problems from the boy's point of view, helps the boy to feel that he has a place, that someone cares, that the world is not against him, and that he is significant as a person. Such a feeling is basic to mental health and is one of the fundamental strengths of the democratic relationship between teacher and student.

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