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FM 21-20

WAR DEPARTMENT

BASIC FIELD MANUAL

PHYSICAL TRAINING

March 6, 1941

**FM 21-20**

**BASIC FIELD MANUAL**

**PHYSICAL TRAINING**

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# BASIC FIELD MANUAL

## PHYSICAL TRAINING

(This manual supersedes ch. 4, BFM, vol. I, March 26, 1936, and TR 115-5, Part II, September 10, 1928.)

### CHAPTER 1

#### GENERAL

■ 1. **NECESSITY FOR PHYSICAL TRAINING.**—To perform his duties satisfactorily, the soldier must possess great organic vigor, muscular and nervous strength, endurance, and agility. The average recruit does not possess the degree of physical fitness required of a trained soldier. The required degree of physical fitness can be acquired only through physical training. The performance of purely military exercises, that is, drill, marching, etc., is not alone sufficient to correct the deficiencies and incorrect postures too often acquired before becoming a soldier. Further, the complexities of modern warfare require so much technical training for the soldier that all too frequently no time is allotted for physical training; yet the soldier who possesses great technical skill but is unable to withstand the rigorous life demanded is of questionable value. Hence, physical training must be an integral part of every training program. There is no more justification for failure to allow time in the training program for physical training on the grounds that the soldier will attain satisfactory physical development through performing his daily duties, than there is for failure to allow time for training in marksmanship on the grounds that the soldier will learn to shoot by being taken to the range, issued a weapon and ammunition, and left to his own devices.

■ 2. **PURPOSE.**—*a.* The primary purpose of military physical training is the production of a state of health and general physical fitness which will permit the soldier to perform the arduous duties required of him. The ultimate goal of this training, then, is physical efficiency which is essential to military effectiveness. The attainment of physical efficiency through physical training is shown graphically below.

## PHYSICAL TRAINING

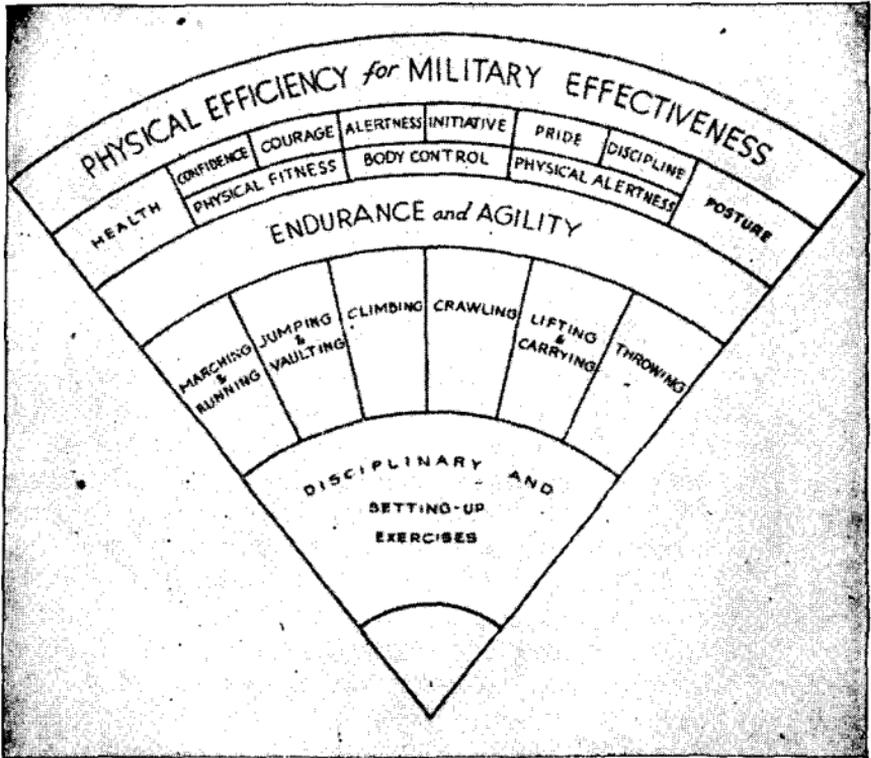


FIGURE 1.—Chart.

b. The disciplinary and setting-up exercises prepare the soldier mentally and physically for training in such basic skills as marching and running, jumping and vaulting, climbing, crawling, lifting and carrying, and throwing and kicking. Superiority in these basic skills becomes the soldier's immediate objective and gives him a definite goal for which to strive. From the effort the soldier puts forward to become proficient in these simple skills, he develops endurance and agility. The development of endurance results in health and physical fitness. The development of agility results in body control and physical alertness: The soldier is among the first to become aware of his own physical development. This knowledge of improvement results in confidence, courage, alertness, initiative, pride, discipline, and posture. The development of these many desirable qualities during the

conduct of the physical training program is a certainty and may equal, if not surpass, the purely physiological value of the training. The final result of all of this training is physical efficiency, which, as stated before, is an essential to military effectiveness. (See fig. 1.)

■ 3. RELATIONSHIP BETWEEN PHYSICAL TRAINING AND MILITARY TRAINING.—A man does not become an effective soldier simply by taking an oath and donning a uniform. The transformation from civilian to soldier is accomplished by training, and it is not complete until the man develops those qualities which characterize the trained soldier. The chart (fig. 1) shows at a glance that physical training develops many of these desired qualities while making the man physically efficient.

■ 4. PHYSICAL TRAINING PROGRAM.—*a. Scope.*—The physical training program described in this manual is composed of several different activities, each having a special purpose. The activities may be conducted either without the aid of equipment or with the aid of such as may be improvised. These activities are—

- (1) Disciplinary exercises.
- (2) Setting-up exercises.
- (3) Marching and exercises while marching.
- (4) Running, jumping, and climbing.
- (5) Personal contests.
- (6) Mass athletics and group games.
- (7) Rifle exercises.
- (8) Swimming.

*b. Description and purpose.*—(1) *Disciplinary exercises.*—These embrace the positions of attention, rests, facings, hand salute, mark time and halt, and the starting positions for setting-up exercises. These exercises must be executed with snap and precision. They are given at the very beginning of the daily morning period in physical training and are designed to give the instructor complete control over his unit as well as to alert the men for the work to follow.

(2) *Setting-up exercises.*—These exercises are for all parts of the body—arms, neck, shoulders, trunk, and legs. All are employed in each lesson in the harmonious development of

the entire body. They serve not only to develop all parts of the body, but also as a warm-up to prepare the soldier for the more strenuous exercises which follow immediately after. Properly executed, they also have an educational and disciplinary value which is equal, if not superior, to the purely physiological benefits.

(3) *Marching and exercises while marching.*—These exercises consist of marching in quick or double time, and such exercises as can be performed while marching. They are designed to develop poise, posture, coordination, control, suppleness, and endurance.

(4) *Running, jumping, climbing, and crawling.*—This phase of the physical training program consists of work on the obstacle course (see par. 32), or, if no obstacle course is available, in traversing rough and varied terrain. It is designed to develop endurance, agility, and coordination, as well as to train the soldier to overcome such obstacles as may confront him during field service.

(5) *Personal contests.*—Personal contests are the simpler forms of competitive gymnastics, where the participants are pitted against each other. Such contests never fail to produce rivalry for superiority. Their chief value lies in the development of agility and quickness of thought and action.

(6) *Mass athletics and group games.*—Mass athletics and group games are those forms of competitive or recreational sports which can be indulged in by all the men of a unit. They develop mental and physical alertness, coordination, and unit or group spirit, and give variety and interest to the physical training program.

(7) *Rifle exercises.*—Rifle exercises are in reality setting-up exercises with the rifle as equipment. Owing to the weight of the rifle, these exercises are useful for the development of the muscles of the arms, upper back, shoulders, and chest, and when taken in conjunction with trunk and leg exercises they are excellent agents for the all-around development of those who possess the strength to wield the piece to advantage.

(8) *Swimming.*—Swimming is of importance to everyone connected with the service, and all officers and enlisted men should become proficient in it. Aside from its usefulness, it

is an excellent means to all-around physical development.

(9) *Activities requiring special equipment.*—Activities requiring special equipment are not included in this manual. Activities of this type are—

(a) *Gymnastics.*—This includes exercises utilizing the horse, parallel bars, horizontal bar, rope, etc. The chief object of this instruction should be the development of the ability of the soldier to control his body while his weight is supported by or suspended from the arms and hands, thus enabling him to overcome such obstacles as may present themselves during field service. These exercises will tend to make the soldier agile and active and will teach him decision and self-reliance.

(b) *Boxing and wrestling.*—Boxing and wrestling develop endurance, agility, and strength, and are important factors in the development of confidence, courage, and self-control.

■ 5. STANDARDS AND TESTS.—a. *Standards.*—As stated in paragraph 11, the physical training program should be based upon the condition and aptitude of the men to be trained. The best method of determining this condition and aptitude of the group is by comparison with known standards.

(1) The following table of standards may be used as a guide for men in field uniform:

Event	Minimum standard	Average	Above average	Superior
100-yard dash.....	14 seconds.....	13 seconds.....	12½ seconds....	12½ seconds.
Running high jump.	3 feet 9 inches.	4 feet.....	4 feet 3 inches.	4 feet 6 inches.
Running broad jump.	12 feet.....	13 feet 6 inches.	15 feet.....	16 feet 6 inches.
Push-up from ground.	20.....	25.....	30.....	35.

(2) Other minimum standards for average men are—

(a) Baseball throw—125 feet.

(b) Basketball throw—60 feet.

(c) Bar or fence vault—4 feet.

(d) Run a quarter mile—87 seconds.

(e) Run a half mile—3 minutes 15 seconds.

(f) Walk 2 miles—23 minutes 30 seconds.

(g) Jump and reach—13 inches.

1. From a position with the feet close together and heels and toes on the ground, the man stretches both arms overhead, fingers extended. Measure this height.

2. He then jumps vertically, reaching as high as possible. Measure this height.

3. The difference between the heights in 1 and 2 above gives the "jump and reach" distance.

(h) Pull-up (chin)—6 times.

(i) Climb 20-foot rope—20 seconds.

(j) Standing hop, step and jump—18 feet.

(k) Running hop, step and jump—22 feet.

(l) Standing broad jump—6 feet.

(m) Standing backward jump—2 feet 8 inches.

(n) Running long dive—5 feet 6 inches:

**b. Tests.**—(1) The only way a comparison can be made between a standard to be reached and the ability of an individual or group is by tests. Tests have a very important place in any physical training program. They give the soldier an opportunity to compare his ability with that of others and, consequently, are of tremendous value in stimulating his interest and his effort. Tests serve the instructor as a means of measuring the progress of his men and the efficiency of his instruction. They also serve to point out to the instructor specific needs or deficiencies of individual men which require special instruction or corrective work.

(2) Tests can be conducted with little, if any, interference with the scheduled program, and require nothing more than a little planning on the part of the instructor. Their value to the program is so great that they should be held at regular intervals.

■ **6. ALLOTMENT OF TIME FOR PHYSICAL TRAINING.**—The time allotted to physical training for recruits should, when the training schedule permits, consist of 1½ hours each day. On the other hand, technical and tactical training requirements as approved in Mobilization Training Programs must be met,

and the desired  $1\frac{1}{2}$  hours of physical training daily may have to be reduced. It is the task of the commander concerned to utilize to maximum advantage, the time available for physical training. A brief description of how a daily  $1\frac{1}{2}$ -hour physical training period may be successfully employed is given in *a* and *b* below.

*a. Morning period.*—(1) The morning period should begin not earlier than 1 hour after breakfast and should last at least 30 minutes. Men should not be required to indulge in strenuous exercises before breakfast. Exercises before breakfast are not recommended; if indulged in at all, they should be confined to a few arm stretchings and relaxed trunk-bending exercises—just exertion enough to accelerate circulation mildly. To exercise strenuously before breakfast is likely to affect the digestive operation seriously, and is more apt to weaken than to strengthen the body, which is at a very low state of physical efficiency immediately after arising, when its resistance is low. It has been shown that the body does not regain its normal state of physical efficiency until well after breakfast and that it reaches its highest peak of efficiency in the middle of the afternoon.

(2) The morning period should embrace the following forms of exercise in the order named:

(a) Disciplinary exercises, 2 or 3 minutes.

(b) Setting-up exercises, 12 to 15 minutes.

(c) Marching and exercises while marching, 3 to 5 minutes.

(d) Running, jumping, climbing, etc. (work on the obstacle course), 8 to 10 minutes.

(e) If more than 30 minutes are available, add personal contests.

(f) At times it is desirable to substitute personal contests and group games for (c) and (d) above, even though only 30 minutes are available for the period.

*b. Afternoon period.*—The afternoon period should be closely supervised but should be primarily recreational. It should be devoted to conducting tests, mass athletics, and group games. Where facilities exist for swimming, gymnastics, boxing, and wrestling, such instruction should be given at this time.

■ 7. UNIFORM TO BE WORN.—*a.* The uniform worn will depend upon the season of the year and the state of the weather. At no time should a uniform be worn which does not admit of the freest possible movement of the body.

*b.* Undershirts, slacks, or loosely laced breeches without leg-gins, and regulation shoes comprise the usual uniform during the summer months; olive-drab shirts are usually prescribed during cold or inclement weather. Hats, caps, or blouses should not be worn.

■ 8. ELEMENTARY RULES FOR HEALTH.—*a.* Health is that quality of the entire body, including the mind, which renders the soldier capable of developing to the highest degree of efficiency. Good health, denoting a vigorous body, alert mind, and high morale, is evidenced by the degree in which it expresses itself in a well-disciplined, proud, confident, and capable soldier. Physical health cannot be separated from mental health. Ill health is quite as often due to conditions of the mind resulting in bodily ailment as due to purely physical causes. Therefore, in giving rules for health, it is essential that mental hygiene as well as physical hygiene be considered.

*b.* A healthy state of mind is characterized by cheerfulness, confidence, and interest. An unhealthy state of mind is characterized by indifference, discouragement, worry, and a feeling of inferiority due to lack of success or progress. Much can be done through physical training to develop in the men a healthy mental state. This may be accomplished by—

(1) Instructor being a worthy example to the men.

(2) A fair, impartial, understanding attitude on the part of the instructor.

(3) Work being interesting and varied.

(4) Work being arranged so as to result in progressive development.

*c.* The importance of proper personal habits, such as cleanliness, proper eating, rest, and elimination, should be stressed to the men during instruction in physical training.

*d.* Physical training should not be scheduled immediately after reveille or immediately before or after meals (see par. 6).

*e.* Clothing suitable for exercise should be prescribed (par. 7).

f. Men should be "warmed up" gradually before engaging in strenuous exercise.

g. Muscular action produces an unusual amount of bodily heat which should be lost gradually, otherwise the body will be chilled. Hence, after exercise, never remove clothing to cool off, but, on the contrary, wear some additional clothing. If no additional clothing is available, men should be kept mildly active allowing the body to cool gradually.

h. Drinking water, particularly cold water, during or immediately after exercise should be discouraged; the body should be allowed to recover its normal condition before quenching the thirst with draughts of cold water. If necessary to do so while exercising, cool, not cold, water may be used in small quantities, but exercise must continue, especially if the body is in a state of perspiration.

■ 9. POSTURE.—*a. Definition.*—(1) Posture may be defined as the bearing of a person. It is determined by the relative arrangement of the parts of the body, and hence may be whatever one wishes it to be, unless some structural defect prevents. Even in such cases, proper exercise and effort may materially assist in overcoming or modifying defects. Usually, however, defective posture is due to carelessness or ignorance and not to structural causes.

(2) The position of the spinal column, which runs from the head to the pelvic region, is the cause of most defects in posture. Such defects as poor head carriage, humped-up shoulders with resulting hollow chests, sway backs and protruding stomachs and buttocks can be attributed to a faulty position of the spinal column.

*b. Promoting good posture.*—(1) The gaining of good posture depends upon the efforts of the individual soldier. It depends upon his desire, pride, attitude, and alertness, his constant thinking of his own bearing; this will tend finally to change his usual bodily carriage. Exercises for correcting posture serve to build a healthy condition of the muscles with better muscle tone, but this is merely one of the prerequisites for the promotion of posture improvement.

(2) The best commands to promote and encourage good posture will be similar to the following: STAND TALL, WALK

TALL, RELAX YOUR MUSCLES AND STAND TALL, THINK OF YOUR HEAD AS PULLING YOUR BODY UPWARD. The desire must be instilled into the soldier as well as constant attention being directed to his carriage. The points for the physical instructor to consider and emphasize are—

(a) A desire in the individual for good posture.

(b) Very frequent thought on the part of the individual to maintain good posture.

(c) Sufficient strength and muscle tone.

(d) A body sense of the feeling of good posture.

(e) Pride in one's self and one's organization.

(f) A confident and optimistic attitude.

*c. Value of good posture.*—(1) In a well-poised body, the internal organs are held in a position best suited to the proper performance of their functions. By the elimination of a crowded and sagging position, abdominal pressure of the organs is removed. Circulation, digestion, elimination, glandular secretion, and all the processes vital to health are aided. Strain on the nerves and the vessels leading to the abdominal organs, which causes lack of sufficient vitality in the internal tissues, is remedied.

(2) Aside from the physiological values of correct posture, a well-poised soldier is more impressive, gains more confidence, and is more effective than he otherwise would be.

## CHAPTER 2

### CONDUCT OF THE PHYSICAL TRAINING PROGRAM

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#### SECTION I

#### GENERAL

■ 10. INSTRUCTOR.—*a. Qualifications.*—The instructor must realize the necessity of physical training and understand its purpose. He should be of better than average physique, ready and able to demonstrate personally what is required of the men, and possess those qualities of leadership which will bring out the best efforts of the men being trained. He must prepare himself thoroughly for conducting each day's work if his instruction is to get the results intended. The success or failure of a program in physical training depends upon his ability and enthusiasm more than upon any other one thing. The importance of the instructor cannot be overemphasized.

*b. Attitude.*—The attitude of the instructor to the work in physical training will determine the results attained by it. A lack of enthusiasm on the part of the instructor will be apparent to the men immediately, and the period will be just so many minutes of time wasted. The instructor must be patient and reasonable. He should commend good performance as quickly as he censures bad. He should require all men to give their best efforts, and he should, by his attitude, inspire his men to do their best. He must be able to distinguish between poor performance caused by lack of ability or aptitude on the part of the soldier and poor performance caused by

lack of effort. He should treat the first with patience and understanding and the latter with firmness; he must never employ sarcasm or ridicule.

*c. Advice to instructors.*—See chapter 6.

■ 11. **CONDITION AND APTITUDE OF THE MEN.**—The condition and aptitude of the men should always determine the nature and extent of the task expected of them. *The instructor must so organize the work as to condition the men gradually.* Too often an over-zealous instructor mistakes quantity for quality, with the result that the men undergoing training become sore and stiff, and look upon the next period of instruction with apprehension. Since the work for the recruit is not satisfactory for the trained soldier, the instructor must give deep consideration to the condition and aptitude of his men and plan his work accordingly. The benefits of this training cannot be recognized in a day, but a course progressively arranged will so condition the men and increase their aptitude that they will reach the standard required without any ill effects.

■ 12. **SIZE OF THE CLASS.**—As a rule for most efficient instruction, the class should be limited in size to the platoon. This size class permits of maximum control by the instructor and results in efficient and thorough instruction. For disciplinary purposes and for welding the command into a compact, alert, and spirited unit, occasionally whole companies, or even battalions and regiments, should be drilled as a unit.

■ 13. **ARRANGEMENT OF THE LESSON.**—*a. Balanced lessons.*—(1) The necessity for balanced lessons cannot be overemphasized. If the maximum benefit is to be derived from the physical training program, the ultimate aim or purpose must be kept in mind and the work organized so as to include as many as possible of the basic skills required of the soldier. This is especially true of the morning period. This period is the foundation of the entire program and must be arranged to include instruction which will result in the soldier developing in discipline, endurance, agility, good posture, body control, and health.

(2) There is no doubt but that setting-up exercises are of great value in developing discipline, coordination, alertness,

muscle tone, and posture; however, endurance and agility cannot be developed by setting-up exercises alone. The setting-up exercises must be supplemented by contests and such exercises as running, jumping, climbing, crawling, vaulting, and dodging. It is realized that all of the activities listed above cannot be included in one morning period of 30 minutes; however, they can and should be alternated so that the physical training instruction results in well rounded development. See paragraph 6 for a guide in arranging this period.

(3) Since the primary purpose of the afternoon period is recreational, the principal requirement for this period, is interest.

*b. Interest factor.*—Physical training instruction should be made as interesting as possible, so that it will react as an exhilarant and awaken the enthusiasm of the men. This enthusiasm will not result, however, if the mind is not employed as well as the body. This work, therefore, should be so conducted as to appeal to the mental, as well as the physical, side of the men. By appealing to their intelligence, a cheerful, intelligent, and enthusiastic responsiveness always results. An officer who does not grasp this fact will find himself unable to arouse the men to the point where they will voluntarily extend themselves to the limit of their capabilities. No stone must be left unturned in an effort to make the work interesting. The use of tests and competitions will assist greatly in securing this result.

## SECTION II

### COMMANDS

■ 14. GENERAL.—*a. Definition of commands.*—Commands are the means through which an instructor orally communicates what is required of those in his charge, and when this requirement is to go into effect.

*b. Use of commands.*—The importance of proper commands in conducting the physical training program cannot be overestimated. The proper execution of disciplinary exercises, setting-up exercises, marching, and exercises while marching is so dependent upon the proper use of commands

that the instructor must be thoroughly familiar with the proper commands and accomplished in their use. This knowledge and ability will be of great assistance in conducting all other phases of the program. Invariably the performance is the direct reflection of the command calling for it. When a command is given distinctly, concisely, with energy and snap, and with proper regard to rhythm, the performance will be found to fit the command; whereas a lifeless, slovenly, and disorganized performance will result from a careless and indifferent command.

■ 15. TYPE AND DEVELOPMENT OF VOICE FOR GIVING COMMANDS.—*a. General.*—Officers should, by constant practice, develop their vocal powers until they develop a commanding voice with the requisite amount of “carry” and quality, and with proper pitch. Every individual’s voice will carry farther if pitched in a certain key. Officers should make it their business to find out what key that is and develop it.

*b. Chest voice.*—(1) Commands should be delivered with what is commonly known as a “chest voice” in contradistinction to what is known as a “head or nasal voice.” The former is usually a low-pitched voice that will carry farther, be more distinct, and require very much less effort than the latter.

(2) In order to cultivate the chest voice, the muscles of the chest, neck, and those that control the larynx should be relaxed in order to enable the trachea or windpipe to be fully distended when the air is being forced up through it and against the vocal cords by the action of the diaphragm.

(3) The mouth should be opened fully and, with the assistance of the proper use of the tongue, teeth, and lips, the words of the command should be articulated and enunciated distinctly and precisely and with sufficient volume to fit the occasion.

*c. Exercises for voice.*—The following simple exercises are recommended to cultivate these qualities:

(1) Take a moderately deep inhalation and then, following the instruction given in *b*(3) above, utter the word “hong” moderately loud and in the proper pitch for 3 or 4 seconds; inhale again and repeat the process, uttering the word “kong.”

(2) The volume should be gradually increased and variation given to the exercise by substituting the words "sing-song" and "ding-dong." These words are recommended because they are simple, easily remembered, and because the sounds required in uttering them adapt themselves best in bringing out the intent of the instruction.

*d. Articulation and enunciation.*—All the words of a command, particularly of the preparatory or explanatory command, must be articulated distinctly. The enunciation must be clear, have the proper intonation, possess the proper inflection and power, and be convincing. The diction must be pure; the substitution of sounds, which in many instances have no relation whatever to the sounds of the words for which they are substituted, should be avoided.

■ 16. KINDS OF COMMANDS.—*a. Preparatory commands and commands of execution.*—There are two kinds of military commands, the preparatory, and the command of execution. The preparatory command describes and specifies what is required and the command of execution calls into action what has been prescribed. All preparatory commands must be given with a rising inflection, the instructor having the feeling that he is lifting the entire command with his voice and creating an eagerness on the part of the men to be off when the command of execution is practically shot at them.

*b. Commands for static exercises.*—(1) Static exercises are those in which a position is held for an appreciable length of time. If it is the purpose of the instructor to have any exercise performed in this manner, he will use words rather than numerals to indicate the successive movements. Thus: 1. ON TOES, 2. RISE, 3. KNEES, 4. BEND, 5. KNEES, 6. EXTEND, 7. HEELS, 8. DOWN, or, 1. TRUNK FORWARD, 2. BEND, 3. RECOVER.

(2) In these commands, the command of execution must indicate how the movement is to be performed.

(3) In the first of these exercises the command RISE is given sharply and snappily, indicating that a snappy performance is wanted; the command BEND is drawn out moderately, to indicate moderately slow performance; the command EXTEND is also given moderately slow, while the

command down is given with more or less snap and finality.

*c. Commands for continued exercises.*—(1) In these, the preparatory commands must explain the entire exercise while the command of execution which is almost invariably confined to the word "exercise" calls for the continuation of the exercise; the commands fitting the repetition are usually confined to numerals.

(2) When very large bodies of men are exercising simultaneously, it is advisable to follow the preparatory command with another that acts as a cautionary command. This will insure the exercise being performed simultaneously and in unison by the whole number. Thus: 1. FROM THE ARMS FORWARD POSITION SWING THE ARMS DOWNWARD AND RECOVER, THEN SIDWARD AND RECOVER IN FOUR COUNTS, 2. IN CADENCE, 3. EXERCISE.

(3) The commands used in the repetition of an exercise may be expressed in words or numerals. In either case, however, they must not only be used to indicate rhythm or the cadence of an exercise, but they must also be indicative of the manner in which each movement of an exercise is performed. Through proper use of these commands, long explanations are avoided and instructors are able to place themselves in absolute accord with the men. Thus: 1. BEND TRUNK FORWARD, 2. EXERCISE, o-n-e, TWO, o-n-e, TWO. Here the long drawn-out o-n-e indicates that the bending movement should be performed slowly, while the short, snappy two indicates a quick recovery.

*d. Commands of discontinuation.*—(1) To discontinue an exercise performed rhythmically or in cadence, the command HALT is given in place of the last numeral. In order to prepare the men for this command, all numerals spoken in the final repetition should be spoken with a rising inflection. Thus: 1. THRUST ARMS FORWARD AND SIDWARD ALTERNATELY, 2. EXERCISE, ONE, TWO, THREE, FOUR, ONE, TWO, THREE, HALT.

(2) When numerals are used, they should always be equal to the number of movements of which the exercise is composed except in an exercise executed in two counts. In this case the count should be as for an exercise in four counts. For example, a movement of two or four counts will be re-

peated at one, two, three, four; one of six movements will require six counts, etc.

(3) If any particular movement of an exercise is to be performed with more energy than the others, the numerals corresponding to that movement should be emphasized. In fact, in all cases, the manner in which the numerals are spoken should be indicative of the nature of the movement required.

*e. Interval between commands.*—The interval between the preparatory command and the command of execution should be long enough to insure the average man having understood the former before the latter is given.

■ 17. MASS COMMANDS.—*a. Results obtained.*—(1) Mass commands assist greatly in overcoming individual diffidence and timidity and in developing confidence, self-reliance, assertiveness, enthusiasm, and proficiency.

(2) Through this method it is possible, by constituting each individual virtually his own drill instructor, to give to large masses the benefits accruing from individual instruction. The principal advantage of this method lies in the fact that each individual is made to rely upon his own initiative and intelligence, as he must learn not only to give the commands properly but also how to perform properly the movement required by the command.

(3) As each individual is required to give the commands as if he alone were giving them to the entire unit of which he is a member, the volume and "smash" of these combined voices literally impel every man to extend himself to the limit in performing the movements with snap and precision. By giving the commands in unison with his comrades, coordination and a sense of cadence are developed from the very beginning.

(4) In the setting-up exercises, the giving of mass commands teaches the proper cadence of an exercise, when to accentuate or emphasize a count and when to drawl it, and how, by proper intonation, to convey the idea of the manner in which a movement is to be performed. In other words, the man learns the "feel" of a movement and how, if necessary, to convey this to others. It also develops the voice.

*b. Method of procedure in drills.*—(1) A thorough explanation of this method of instruction should be given to the men at the beginning, particular stress being laid upon the advantages it holds for them over other methods, in that it affords them the best possible opportunity to develop into efficient drill instructors themselves.

(2) Each movement should be explained in detail and illustrated before it is attempted by the mass, and the necessary commands for putting the required movement into operation should be rehearsed, without performing the movement, until the mass has learned to give the commands properly. When this has been accomplished, the movement should be performed at the command of the mass.

(3) The interval between the preparatory command and the command of execution will depend upon the number of men being drilled and their degree of proficiency; however, it is a serious error to make this interval too short.

(4) In no other phase of the soldier's training are the good or bad qualities of an instructor reflected so accurately as they are in the giving of mass commands. Since it is only natural that the men should endeavor to emulate their instructor, the success or failure of this instruction may be accepted as a fair criterion of an instructor's ability to handle men.

(5) To overcome timidity and self-consciousness, which are always present with beginners, and to instill confidence, self-reliance, and assertiveness, and also to teach the men how to use their voices properly when giving commands, the instructor should frequently repeat the voice exercises described in paragraph 15. These exercises should first be done in an ordinary tone of voice and then gradually increased in volume until each man is capable of performing these exercises with the full power of his voice.

*c. Mass commands for disciplinary exercises.*—The procedure in mass commands for disciplinary exercises is shown by the examples below.

NOTE.—Examples given are for the drill of a platoon. They may be applied to any unit by substituting for "platoon" the designation of the unit.

*Military movements*

- (1) *Instructor*: 1. CALL THE PLATOON TO ATTENTION, 2. COMMAND.  
*Mass*: 1. PLATOON, 2. ATTENTION.
- (2) *Instructor*: 1. FACE THE PLATOON TO THE RIGHT, 2. COMMAND.  
*Mass*: 1. RIGHT, 2. FACE.
- (3) *Instructor*: 1. GIVE THE PLATOON "AT EASE", 2. COMMAND.  
*Mass*: AT EASE.
- (4) *Instructor*: 1. HAVE THE PLATOON STAND AT PARADE REST, 2. COMMAND.  
*Mass*: 1. PARADE, 2. REST.
- (5) *Instructor*: 1. HAVE THE PLATOON SALUTE, 2. COMMAND.  
*Mass*: 1. HAND (RIFLE), 2. SALUTE.
- (6) *Instructor*: 1. HAVE THE PLATOON MARK TIME, 2. COMMAND.  
*Mass*: 1. MARK TIME, 2. MARCH.
- (7) *Instructor*: 1. HALT THE PLATOON, 2. COMMAND.  
*Mass*: 1. PLATOON, 2. HALT.

*Starting positions*

- (8) *Instructor*: 1. RAISE ARMS FORWARD (SIDEWARD) (OVERHEAD), 2. COMMAND.  
*Mass*: 1. ARMS FORWARD (SIDEWARD) (OVERHEAD), 2. RAISE.
- (9) *Instructor*: 1. RAISE ARMS TO THRUST, 2. COMMAND.  
*Mass*: 1. ARMS TO THRUST, 2. RAISE.
- (10) *Instructor*: 1. PLACE HANDS ON HIPS (SHOULDERS), 2. COMMAND.  
*Mass*: 1. HANDS ON HIPS (SHOULDERS), 2. PLACE.
- (11) *Instructor*: 1. LACE FINGERS BEHIND HEAD, 2. COMMAND.  
*Mass*: 1. FINGERS BEHIND HEAD, 2. LACE.
- (12) *Instructor*: 1. RESUME POSITION OF ATTENTION, 2. COMMAND.  
*Mass*: 1. ARMS, 2. DOWN.

(13) *Instructor*: 1. ASSUME THE VARIOUS STARTING POSITIONS IN SEQUENCE, 2. COMMAND.

*Mass*: 1. ARMS FORWARD, 2. RAISE; 3. ARMS SIDEWARD, 4. MOVE, 5. ARMS OVERHEAD, 6. RAISE, 7. FINGERS BEHIND HEAD, 8. LACE, 9. HANDS ON SHOULDERS, 10. PLACE, 11. ARMS TO THRUST, 12. MOVE, 13. HANDS ON HIPS, 14. PLACE, 15. ARMS, 16. DOWN.

**NOTE**.—In all arm movements the command of execution should be indicative of the movement required; thus, movements in the same place are performed at the command MOVE; movements to a higher plane at the command RAISE; to a lower plane at the command LOWER; and those movements where the hands come in contact with the body are performed at the command PLACE.

*d. Mass commands for setting-up exercises*.—(1) Mass commands for setting-up exercises should be limited to those necessary to assume the starting position, to begin the exercise, to indicate the cadence or rhythm, and to stop the exercise. Mass commands *must not be required in the trunk exercises* (except when the trunk movements are relaxed ones), in the *neck* or *breathing exercises*, or in any other exercises in which they will interfere with proper breathing.

(2) The instructor should describe and demonstrate the exercise to be performed before employing mass commands in executing it. The description of the exercise must be clear, brief, and simple.

(3) In all these exercises, in order to insure a prompt and uniform response, the mass will use the command IN CADENCE as a preparatory command. This rule is general.

(4) An exercise is discontinued on a signal from the instructor, who raises one or both arms just prior to the beginning of the last repetition. On this signal the mass will count, with a rising inflection, as ONE, TWO, THREE, HALT, or ONE, TWO, THREE, FOUR, FIVE, HALT, as the case may be.

(5) The following examples will suffice to familiarize instructors with the procedure to be followed in applying the mass commands to the setting-up exercises. The method of discontinuance and the return to the position of attention does not vary and is applicable in all cases. It is given only in (a) below.

(a) The mass is AT EASE while the explanation of the exercise is given.

*Instructor:* I shall demonstrate the exercise. From the position of ATTENTION; raise the arms forward at ONE (demonstrate); move them sideward, palms up at TWO (demonstrate); back to the forward position at THREE (demonstrate) and to the starting position at FOUR (demonstrate).

The cadence is one, t-w-o, three, four (demonstrating the exercise).

*Instructor:* 1. CALL THE PLATOON TO ATTENTION, 2. COMMAND.

*Mass:* 1. PLATOON, 2. ATTENTION.

*Instructor:* 1. EXECUTE THE EXERCISE, AT YOUR COMMAND, 2. COMMAND.

*Mass:* 1. IN CADENCE, 2. EXERCISE—one, t-w-o, three, four; one, t-w-o, three, four.

*Instructor:* Signals for discontinuation.

*Mass:* ONE, T-W-O, THREE, HALT (rising inflection).

(b) Another method of describing the exercise is to require the unit to perform each step separately and then demonstrate it to indicate the cadence. Thus:

*Instructor:* 1. ARMS FORWARD, 2. RAISE, 3. ARMS SIDEWARD, PALMS UP, 4. MOVE, 5. ARMS FORWARD, 6. MOVE, 7. ARMS, 8. DOWN. Take those movements as an exercise in four counts; the cadence is: one, t-w-o, three, four (demonstrating the exercise); 1. AT YOUR COMMAND, 2. COMMAND.

*Mass:* 1. IN CADENCE, 2. EXERCISE.

(c) *Instructor:* 1. HOP TO THE SIDE STRADDLE POSITION, WITH HANDS ON HIPS, 2. COMMAND.

*Mass:* 1. TO THE SIDE STRADDLE POSITION, HANDS ON HIPS, 2. HOP.

*Instructor:* Twist the trunk to the right slowly on one; recover sharply at two; to the left at three and recover at four (demonstrate), 2. READY, 3. EXERCISE, 4. O-n-e, two, t-h-r-e-e, four (repeat desired number of times), 5. HALT.

### SECTION III

#### FORMATIONS, POSITIONS, AND RESTS

■ 18. FORMATIONS.—a. *Formations for disciplinary and setting-up exercises.*—The following formation is recommended.

for the disciplinary and setting-up exercises as it is not only the simplest but the most compact. It requires less time and may be applied with equal facility and promptness to any unit. This formation is a column of threes or fours,

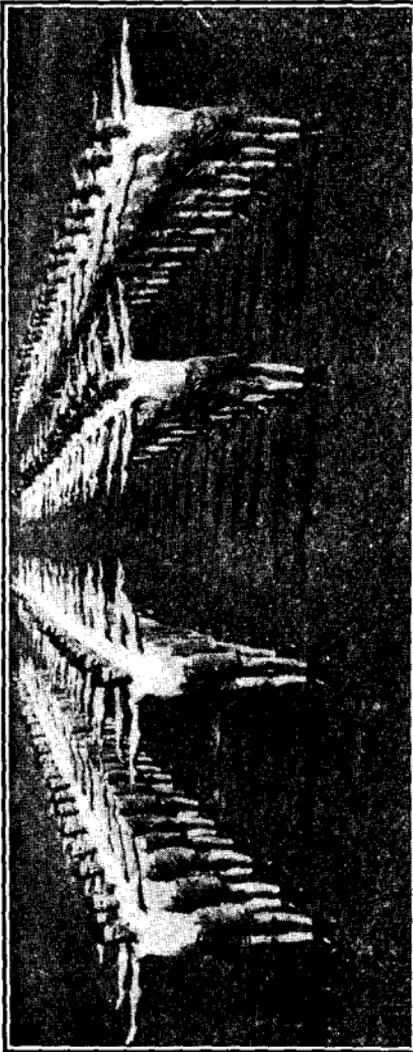


FIGURE 2.



FIGURE 3.

at close interval between squads, facing the instructor who commands:

(1) 1. EXTEND TO THE LEFT, 2. MARCH (fig. 2). At this command the men in the right flank column stand fast,

with arms extended sideward; all other men turn to the left and, taking up the double time, run forward to the original left, men in the center column of a 3-squad unit or men in the right center column of a 4-squad unit taking two paces,



men in the left column of a 3-squad unit or men in the left center column of a 4-squad unit taking four paces, men in the left column of a 4-squad unit taking six paces. All face to the front with arms extended sideward after taking the required distance. The distance between finger tips is about 12 inches.

(2) 1. **ARMS, 2. DOWN** (fig. 3). At this command the arms are lowered smartly to the side.

(3) 1. **FROM FRONT TO REAR, 2. COUNT OFF**. At this command the leading man in each column turns his head to the right rear, calls off *one* and faces the front. Other men in each column call off in turn, *two, three, four, five, etc.*, in the same manner.

(4) 1. **EVEN NUMBERS, TO THE LEFT, 2. UNCOVER** (fig. 4). At the command, **UNCOVER**, each even-numbered man stride-jumps sideward to the left, squarely in the middle of the interval. In doing this, he swings his left leg sideward and jumps from his right foot and lights on his left foot, smartly bringing the right into position against the left.

(5) To assemble the unit, the instructor commands: 1. **ASSEMBLE TO THE RIGHT, 2. MARCH**. At the command, **MARCH**, all return to their original position in column on the double.

*b. Formations for marching and exercises while marching.*—For marching and exercises in marching, the unit should be in a column formation. Men should be in column of files, twos, threes, or fours, and at such intervals as will permit each man perfect freedom.

■ 19. **POSITION OF ATTENTION.**—*a.* Nothing equals the importance of proper and correct posture; it is the very foundation upon which any successful course in physical training must be based. The position of attention is the position an unarmed, dismounted soldier assumes when in ranks or whenever the command **ATTENTION** is given (figs. 5 and 6). This position must be one of mental as well as of physical alertness, and for that reason it must be free from all mental and physical constraint. All the muscles employed must be contracted only enough to maintain the position and any tendency toward rigidity should be avoided, as the position is one that depends upon coordination and not necessarily upon muscular effort. Instructors are cautioned to describe, illustrate, and explain the position of the various parts of the body in this position, carefully calling attention to common errors. The men should be told to get the "feel" of making themselves just as tall as possible, to be proud of themselves and their unit, alert and ready for instant action. Proper

posture must be consistently insisted upon at all times, both in and out of ranks, until the men will assume it from habit.

b. The instructor commands: 1. PLATOON, 2. ATTENTION. At this command the men spring into the position described below, bringing the heels together with a click. For the purpose of precise and simultaneous performance, the

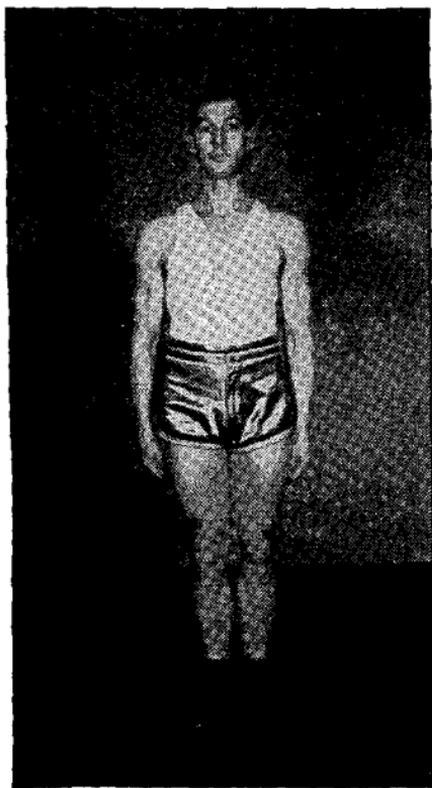


FIGURE 5.—Attention, front view.

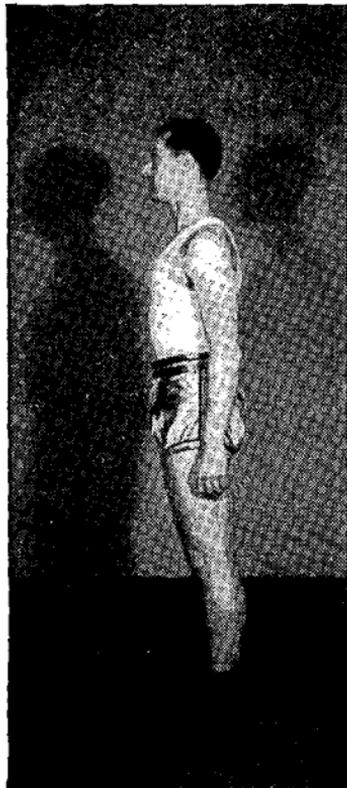


FIGURE 6.—Attention, side view.

men should be cautioned not to move until the last syllable of the command A-T-T-E-N-SHUN is spoken.

- (1) Heels on the same line and as near each other as the conformation of the man permits.
- (2) Feet turned out equally and forming an angle of  $45^{\circ}$ .
- (3) Knees straight without stiffness.
- (4) Hips level and drawn back slightly; body erect and

resting equally on hips; chest lifted and arched; shoulders square and falling equally.

(5) Arms hanging straight down, without stiffness, so that the thumbs are along the seams of the trousers; back of the hands out; fingers held naturally.

(6) Head erect and squarely to the front; chin drawn in so that the axis of the head and neck is vertical; eyes straight to the front.

(7) Weight of the body resting equally on the heels and the balls of the feet.

(8) In assuming the position of the soldier, or of attention, the heels are brought together smartly and audibly.

■ 20. RESTS.—Being at a halt, the commands are: **FALL OUT; REST; AT EASE;** and 1. **PARADE,** 2. **REST.**

a. At the command **FALL OUT**, the men leave the ranks but are required to remain in the immediate vicinity. The men resume their former places at attention at the command **FALL IN.**

b. At the command **REST**, one foot is kept in place. Silence and immobility are not required.

c. At the command **AT EASE**, the right foot is kept in place. Silence but not immobility is required.

d. At the command of execution, **REST**, of 1. **PARADE,** 2. **REST** (fig. 7), move the left foot smartly 12 inches to the left of the right foot; keep the legs straight so that the weight of the body rests equally on both feet. At the same time, clasp the hands behind the back, palms to the rear, thumb and fingers of the right hand clasping the left thumb without constraint; preserve silence and immobility.

e. Being at any of the rests except **FALL OUT**, to resume the position of attention, the commands are: 1. **PLATOON,** 2. **ATTENTION.** At the command **ATTENTION**, take the position of the soldier as prescribed in paragraph 19b.

■ 21. **STARTING POSITIONS.**—*a.* These are the positions in which the various exercises originate and terminate. In nearly all arm exercises, it is necessary to assume one of these

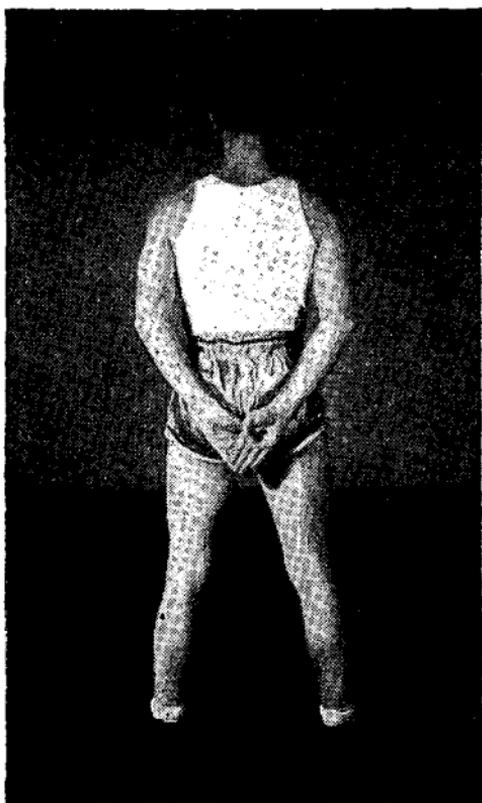


FIGURE 7.—Parade rest.

starting positions. In performing exercises with other parts of the body, starting positions are used as aids, either to add difficulty to a movement or to give a movement in which the arms are not employed a uniform, finished appearance.

(1) 1. ARMS FORWARD, 2. RAISE, 3. ARMS, 4. DOWN (fig. 8). At the command RAISE, raise the arms to the front, smartly extended to their full length till the hands are in front of and

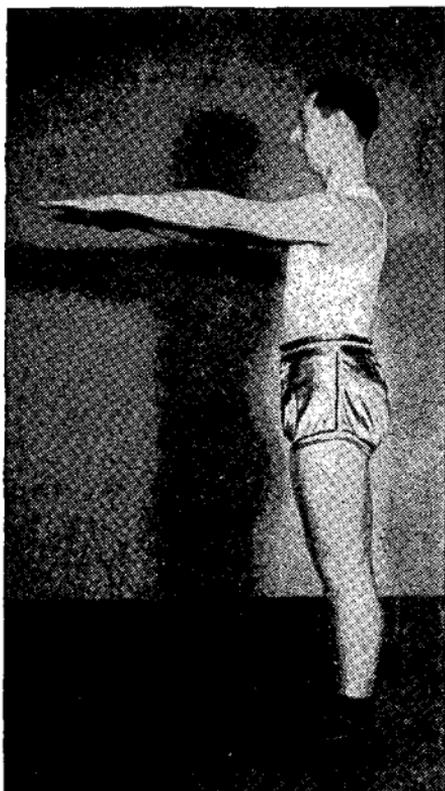


FIGURE 8.—Arms forward.

at the height of the shoulders, palms down, fingers extended and joined thumbs along the index fingers. At ARMS DOWN, resume position of attention.

(2) 1. ARMS SIDEWARD, 2. RAISE, 3. ARMS, 4. DOWN (fig. 9).  
At the command RAISE, the arms are raised laterally until



FIGURE 9.—Arms sideward.

horizontal; palms down; fingers as in (1) above. The arms are brought down smartly without allowing them to touch the body.

(3) 1. ARMS OVERHEAD, 2. RAISE, 3. ARMS, 4. DOWN (fig. 10). At the command RAISE, the arms are extended to their full length, until they are vertically overhead; backs of the hands are turned outward; fingers as in (1) above.

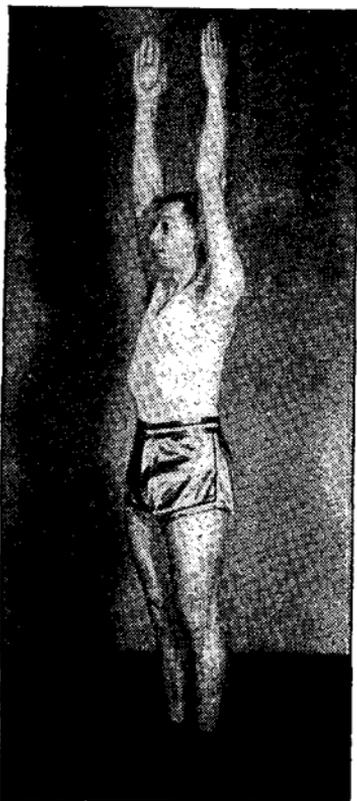


FIGURE 10.—Arms overhead.

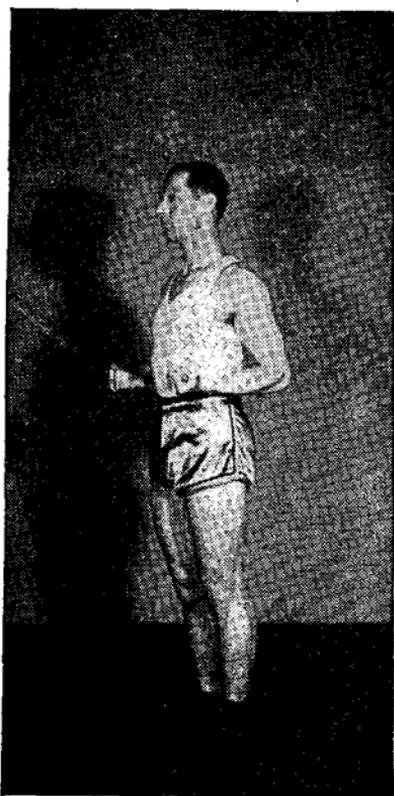


FIGURE 11.—Arms to thrust.

(4) 1. ARMS TO THRUST, 2. RAISE, 3. ARMS, 4. DOWN (fig. 11). At the command RAISE, the forearms are raised to the horizontal; elbows are forced back; upper arms are against the body; hands are tightly closed; knuckles are down.

(5) 1. HANDS ON HIPS, 2. PLACE, 3. ARMS, 4. DOWN (fig. 12). At the command PLACE, the hands are placed on the

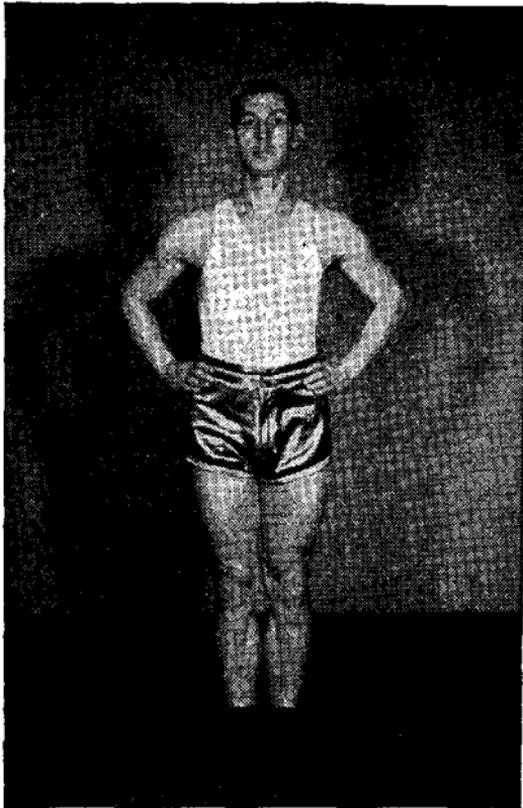


FIGURE 12.—Hands on hips.

hips; fingers are extended and joined, pointing to the front; thumbs point to the rear; the crotch formed by the thumb and forefinger rests just above the hip bone.

(6) 1. HANDS ON SHOULDERS, 2. PLACE, 3. ARMS, 4. DOWN (fig. 13). At the command PLACE, raise the elbows upward

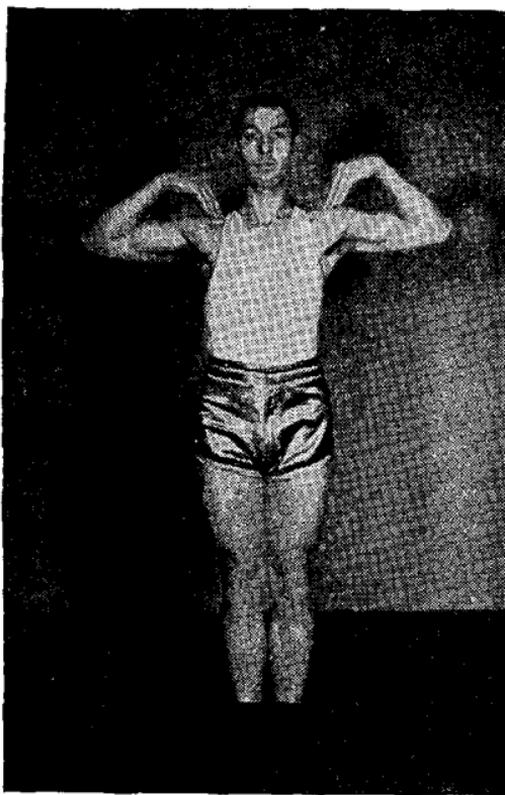


FIGURE 13.—Hands on shoulders.

and outward until the upper arms are horizontal; bend the wrists and place the tips of the fingers lightly on the shoulders.

(7) 1. FINGERS BEHIND HEAD, 2. LACE, 3. ARMS, 4. DOWN (fig. 14). At the command LACE, the arms are raised as de-

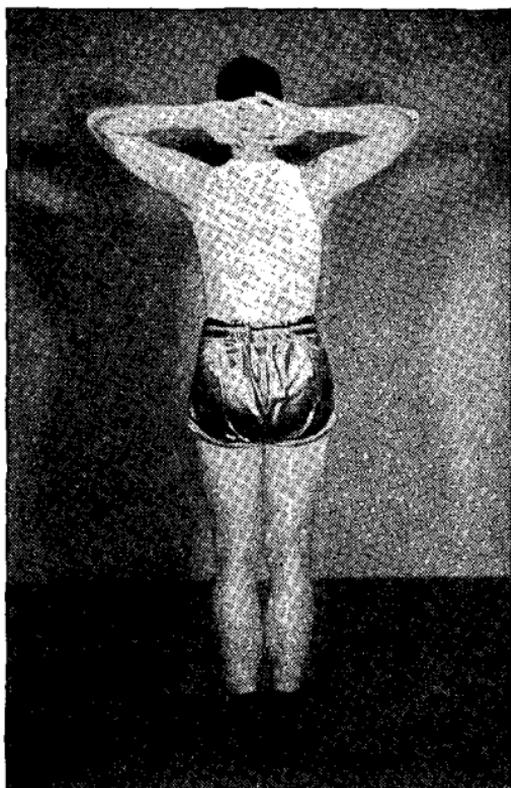


FIGURE 14.—Fingers behind head, lace.

scribed in (6) above and the fingers are laced behind the lower portion of the head; elbows are well up and pressed back.

(8) 1. TO THE SIDE STRADDLE POSITION, 2. HOP, 3. TO THE POSITION OF ATTENTION, 4. HOP (fig. 15). At the command HOP, a hop is executed and the legs separated at the same time, so that when the feet are planted they will be separated about 30 inches. The toes should strike the ground first and the

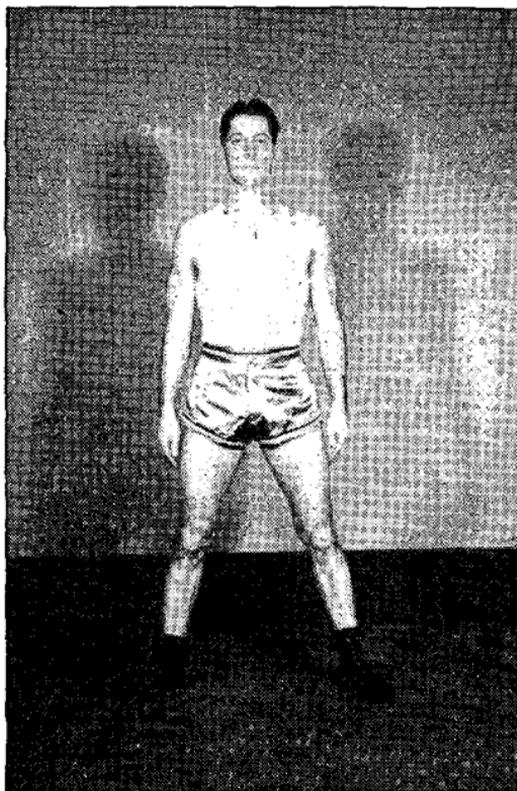


FIGURE 15.—Side straddle position.

position assumed without jar. In the final position assumed, the legs are straight and the body is in its normal erect position. Some position of the hands is usually assumed simultaneously with the assumption of the side straddle position. A typical command is: 1. TO THE SIDE STRADDLE POSITION, HANDS ON HIPS, 2. HOP.

(9) 1. TO THE SQUATTING POSITION, 2. BEND, 3. TO THE POSITION OF ATTENTION, 4. RISE. At the command BEND, bend knees fully and open legs outward so that each knee points  $45^{\circ}$  to the oblique; at the same time place both hands flat on the floor 6 inches in front of the feet, about 15 inches apart, fingers spread and to the front, arms straight (fig. 16).

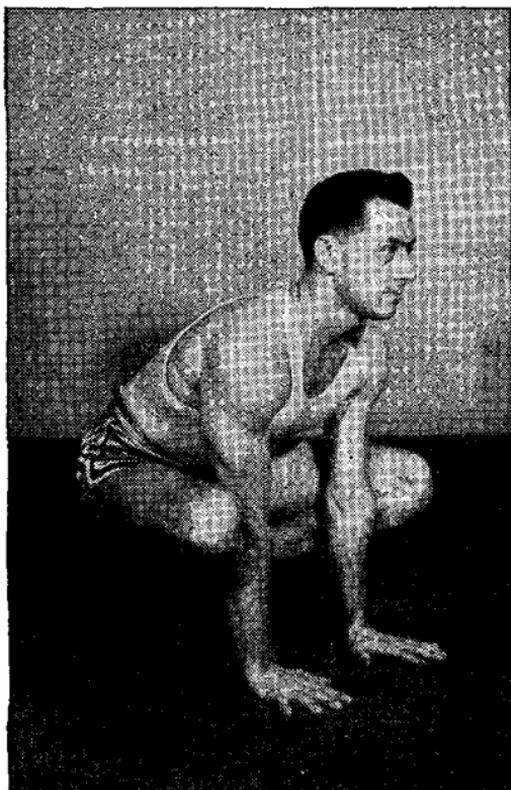


FIGURE 16.—Squatting position.

b. These positions should be practiced frequently, and instead of recovering the position of attention after each position, the instructor may change directly from one to another by giving the proper commands instead of commanding 1. ARMS, 2. DOWN. Thus, to change from the position described in (6) above to that described in (5) above, having commanded: 1. HANDS ON SHOULDERS, 2. PLACE, he commands: 1. HANDS ON HIPS, 2. PLACE.

## SECTION IV

## DISCIPLINARY EXERCISES

■ 22. **EXAMPLES OF DISCIPLINARY EXERCISES.**—Those military movements included in the school of the soldier and the starting positions for setting-up exercises are classed as disciplinary exercises because they have no particular value in physical development but are of great importance in instilling in the men that sense of discipline which is necessary for the efficient conduct of the physical training instruction. See paragraph 17 for examples of these exercises.

■ 23. **METHOD OF CONDUCTING DISCIPLINARY EXERCISES.**—*a.* If the instructor conducts the disciplinary exercises with enthusiasm and snap at the very beginning of the morning period in physical training, he can be assured of having complete control over the unit the remainder of the period. The instructor should place himself in a position from which he can see his entire unit and well away from it so that his commands will be heard by all at the same time.

*b.* Before the unit undergoing training is extended for setting-up exercises, the instructor should give one or two commands, such as 1. RIGHT, 2. FACE, or 1. HAND, 2. SALUTE, and require a quick, snappy, accurate performance. He should have the unit, using mass commands, perform one or two movements, such as MARK TIME, HALT, PARADE REST, and ATTENTION. Proper performance of these few movements will result in the men being alert mentally and physically, ready to form quickly and accurately for setting-up exercises. The instructor should give the commands for assuming the formation for setting-up exercises (see par. 18*a*) with vigor to keep his unit alert, and then, by mass commands, he should have the unit perform two or three starting positions and resume attention.

*c.* The most important consideration in the conduct of these few disciplinary exercises is proper performance by the instructor. He must understand thoroughly the commands to use, the method of using mass commands, and the proper execution of the movement called for. By his example, he must inspire his men to execute the movements with snap

and precision. He must be alert and soldierly and as quick to commend for good performance as to censure for poor performance.

## SECTION V

### SETTING-UP EXERCISES

■ 24. METHOD OF CONDUCTING SETTING-UP EXERCISES.—*a.* The instructions previously given for conducting disciplinary exercises (see par. 23) apply as well to the conduct of setting-up exercises.

*b.* The purpose of setting-up exercises, as explained in paragraph 4b(2), should always be kept in mind. Setting-up exercises form the foundation upon which the entire physical education program is built. Their importance is unquestioned. Their value, however, depends on their proper conduct and presentation, so that the purpose for which they are designed is fulfilled.

*c.* Setting-up exercises by large groups in unison and in response to military commands do have great disciplinary value. But if this aim predominates, the instructor is apt to give only those exercises which lend themselves readily to a snappy military performance, thereby neglecting the more complex and more beneficial exercises in favor of the simpler and less beneficial ones.

*d.* Setting-up exercises should be conducted so that they impart the physiological, as well as the disciplinary, benefit of which they are capable. Accuracy and precision of performance will be insisted upon whenever they are possible of attainment and should be striven for even in those exercises which, because of their complexity and difficulty of execution, do not lend themselves readily to complete accuracy and precision of performance. But this insistence upon accuracy and precision of performance should be with the aim in mind of insuring that the men get the maximum physical benefit from the exercises and should not be employed for purely disciplinary motives. The disciplinary phase of physical drill should be largely taken care of in the period allotted to disciplinary exercises (see sec. IV).

*e.* In order to inculcate rhythmical and coordinated move-

ments and flexibility of the mass, such exercises as lend themselves to rhythmical repetition may be performed. However, this should never be done at the expense of the physical value of an exercise.

*f.* As the value of an exercise depends upon the manner of its execution and not upon the exercise itself, the cadence in which it is performed must fit the exercise.

*g.* Short periods of rest or AT EASE should be given during the setting-up period whenever the instructor feels they are necessary to enable the men to regain their breath and to relieve undesirable strain or tension. These periods should be very short, never over 30 seconds, and before giving them the instructor should caution the men to breathe slowly and deeply during these periods.

*h.* Instructions in the proper commands for setting-up exercises are fully covered in section II. The instructor is again cautioned not to use mass commands when the more difficult exercises are to be executed.

*i.* In conducting setting-up exercises, the instructor should remember that the men are there primarily for physical exercise. Long, unnecessary explanations or corrections are a waste of time. Whenever possible, an explanation of an exercise should coincide with a brief demonstration of it, and corrections should be confined almost entirely to those which will help the men get more benefit from the exercise.

■ 25. SEQUENCE IN GIVING SETTING-UP EXERCISES.—*a.* The setting-up exercises in this manual (see ch. 7) have been classified into ten separate groups according to the parts of the body involved most in doing the exercises. These groups have then been arranged in a definite order or sequence. The instructor should follow this sequence in conducting setting-up exercises. It is not the only one that could be used, but it has been found to be the most satisfactory. The grouping and sequence are as follows:

- (1) Arm exercises.
- (2) Leg exercises.
- (3) Trunk exercises (turning).
- (4) Trunk exercises (bending).
- (5) Shoulder exercises.

- (6) Neck exercises.
- (7) Balancing exercises.
- (8) Coordinating exercises.
- (9) Combined exercises.
- (10) Breathing exercises.

*b.* The designation of the above groups is somewhat arbitrary and was chosen principally for convenience. It does not follow, for example, that all the exercises in each group actually belong in that group from a physiological or anatomical point of view. Most of the arm exercises, for instance, should be called shoulder girdle exercises. That would be more scientific; but all of the arm exercises involve more movement of the arms than of any other part of the body and are therefore conveniently placed in the category of arm exercises.

*c.* The exercises are further arranged within their respective groups according to their difficulty of execution, insofar as this is possible of determination. This does not mean, however, that setting-up exercise given in paragraph 74*i*(10) is necessarily more difficult than that in (9), but it does mean that, for most persons, exercise (10) is more difficult of execution than (1) and easier than (20).

*d.* In planning the daily lessons, the instructor should choose exercises from each group with due consideration of their order of difficulty. He does not need to choose the same number of exercises from each group but no group should be entirely neglected. As his men become more physically fit and more proficient in doing setting-up exercises, he will, of course, make his lessons more strenuous. He will then find himself choosing most of his exercises from group given in paragraph 74*i*, and a few from the other groups, perhaps only one from each other group. For this reason the group in paragraph 74*i* contains by far the greatest number of exercises. The exercises in this group are more interesting as well as more beneficial. By their use a much more complete and thorough "workout" may be given within the allotted time since they exercise many parts of the body at once.

■ 26. PROGRESSION OF SETTING-UP EXERCISES.—*a.* In general, a lesson in setting-up exercises may be made more strenuous

in one of three ways: By choosing exercises that are more difficult of execution; by increasing the number of repetitions of any given exercise; or by making the cadence faster or slower, whichever will make that exercise more strenuous. It is essential that all three of these methods be utilized in order to obtain the desired progression in the complete course. This progression should be a gradual one from the simple to the complex and from the nonstrenuous to the strenuous.

b. The cadence has been definitely prescribed for many of the exercises in chapter 7; for the rest the cadence is optional. Where the cadence is prescribed, it should not be altered as this would change the exercise entirely, but where the cadence is optional the instructor may use his own judgment.

c. The number of times some of the exercises should be performed is specified in chapter 7. Where specified it serves only as a guide, being the number of times the average soldier should be able to perform that exercise when first attempting it. (This has been determined by actual experience.) In all other exercises the instructor should, of course, determine for himself the proper number of times an exercise should be performed.

■ 27. TERMINOLOGY OF SETTING-UP EXERCISES.—For the sake of simplicity, technical terms have been avoided wherever possible in the description of the setting-up exercises, being replaced by simpler words more commonly used and more readily understood. In order to insure uniformity, the terminology used in this manual should always be used by the instructor and taught to the men.

## SECTION VI

### MARCHING AND EXERCISES WHILE MARCHING

■ 28. GENERAL RULES.—a. All steps and marchings executed from the halt, except right step, begin with the left foot.

b. The length of the full step in quick time is 30 inches, measured from heel to heel, and the cadence is at the rate of 120 steps per minute.

c. The length of the full step in double time is 36 inches; the cadence is at the rate of 180 steps per minute.

d. The instructor, when necessary, indicates the cadence of the step by calling one, two, three, four, the instant the proper foot is planted.

e. In marching, the head and trunk should remain immobile but without stiffness, head erect, body well stretched from the waist, chest arched, chin up, and arms swinging naturally about 6 inches to the front and about 3 inches to the rear of the body.

f. In double timing the forearms are raised to a horizontal position along the waist line, fingers closed, knuckles out, the arms swinging naturally. The step is an easy run with the weight of the body forward and the muscles relaxed.

■ 29. METHOD OF CONDUCTING.—a. Men should be marched in a column formation either on a large circle or square with the instructor in the center. If marched on a square, changes in direction should be made without command.

b. In performing exercises while marching at quick time and double time, the normal cadence is used except when the nature of the exercise necessitates a different cadence. The intervals and distances between men are variable and are determined by the nature of the exercises being performed.

c. The command that causes and discontinues the execution of an exercise should be given as the left foot strikes the ground. To discontinue an exercise being performed while marching, the command is: 1. QUICK TIME, 2. MARCH, instead of HALT.

d. In maintaining cadence the instructor may count one, two, three, four or may have the men count cadence themselves. The latter is accomplished by commanding CADENCE as the left foot strikes the ground. The next time the left foot strikes the ground, the men start their count and count one, two, three, four; one, two, three, four. They then cease counting without command.

■ 30. EXAMPLES.—The following examples are given to illustrate how these exercises are conducted. Many more exercises will be found in chapter 7.

*a.* The unit being in march or at a halt:

(1) ON TOES, 2. MARCH, 3. QUICK TIME, 4. MARCH.

(2) 1. RAISE KNEES, CHEST HIGH, 2. MARCH, 3. QUICK TIME, 4. MARCH.

*b.* The unit being at a halt: 1. TO THE SQUATTING POSITION, HANDS ON HIPS, 2. BEND, 3. IN THAT POSITION, FORWARD, 4. MARCH, 5. QUICK TIME, 6. MARCH, OR 5. PLATOON, 6. HALT, 7. RISE.

## SECTION VII

### RUNNING, JUMPING, AND CLIMBING

■ 31. GENERAL.—Running, jumping, vaulting, climbing, and crawling are basic activities required of all soldiers. They are also excellent means for developing endurance, agility, confidence, and self-reliance. Instruction and training in these basic activities are best conducted on an obstacle course.

■ 32. OBSTACLE COURSE.—The obstacle course described below is given as a model. It is easy to construct and contains obstacles similar to those encountered in field service. The diagram of the course shows the lanes for only two men. A course should be wide enough to permit a minimum of four men running at the same time; a still wider course is most desirable.

*a.* To jump the hurdle, run straight at it and, without breaking stride, kick the front foot up and forward just enough to clear the obstacle. From the rear foot, get the spring necessary to carry the body and rear leg over the hurdle. Land on the leading foot and continue in stride. Just clear the hurdle, as time is lost while the body is in the air. If carrying the rifle, throw it sharply upward and forward on taking off and bring it back to the high port on landing.

*b.* To vault the fence, run forward, place both hands on top of the fence, jump up with arms straight, tuck up the knees, throw both legs over the top to the left (right), release the grasp with left (right) hand, and drop to the ground facing the original front. If armed with a rifle, carry it in one hand, place the other hand on the top of the fence, and vault over as described.



c. To dodge around the panels, slow down so as to be able to run as close to the ends of the panels as possible without touching them. Lean in the direction of the turn and take fast, short steps when passing around the ends of the panels.

d. The 7-foot wall is surmounted as follows: Run forward and jump forward and upward at the wall, placing the left foot as high against it as possible; seize the top with both hands, pull the body up, swing the right leg followed by the left over the wall, and vault to the ground. When the rifle is carried, sling it over the shoulder; then the top is reached in the same manner as without a rifle, but it is necessary to turn so as to face the wall before dropping to the ground. This is done to permit the rifle to clear the wall.

e. Before crawling under the platform, the soldier must drop to the ground while at a run, which is done as follows: The left foot is advanced and turned in across the front of the body. The soldier throws his left arm over his head and drops forward on the left side of the left knee, left hip, and left shoulder. If carrying the rifle, the soldier drops forward on the left side of the left knee and at the same time holds the rifle forward vertically in both hands so that the butt strikes the ground a full arm's length directly in front of the left knee.

f. To broad jump the ditch, get sufficient speed to carry the body forward while it is in the air. At the take-off, spring off one foot and raise both knees and arms in order to get elevation. If sufficient speed has been attained, the momentum will carry the body over the ditch. Land on both feet without losing balance and continue forward at full speed.

■ 33. USE OF THE OBSTACLE COURSE.—a. During the early stages of the recruit's training, he should not be required to run the obstacle course against time but rather should be instructed in the proper method of overcoming each obstacle in turn and should be given an opportunity to practice overcoming each obstacle until he is proficient. When the soldier has shown that he can overcome each obstacle in the course, he should be required to run the course against time. However, the time allowed should be determined by the con-

dition and ability of the soldier. As his condition and ability improve, the time should be reduced. As the development of the man continues, he should be required to run the course carrying a rifle or other object, and, finally, he should be required to run the course wearing light equipment.

b. In beginning the soldiers' instruction, it is recommended that the instructor explain and demonstrate the method of overcoming the first obstacle, require his unit to practice three or four times, and then have the soldiers run a hundred yards. Each succeeding day, or period, during which work is scheduled on the obstacle course, the same procedure should be followed, the instruction being directed to overcoming a different obstacle and the run afterwards being gradually lengthened. Later the men should be required to overcome more than one obstacle and run a greater distance until finally they are ready to run the entire course.

## SECTION VIII

### PERSONAL CONTESTS

■ 34. METHOD OF CONDUCTING PERSONAL CONTESTS.—*a.* In conducting these contests the instructor should realize that they are personal encounters which, aside from their physical value, add interest to the instruction and bring out and develop aggressiveness, agility, quickness of perception, confidence, and morale. In order to accomplish these aims and equalize the contests, he must pair the men off in accordance with their weight, agility, or strength.

b. In contests in which superiority is dependent upon skill and agility, no restrictions need be placed upon the efforts of the contestants, but in those that are a test of strength and endurance, it is well to call a contest a draw when the men are equally matched and the contest is likely to be extended to the point of exhaustion of one or both contestants.

c. Contests that require strength and agility should be alternated with those that depend upon strength and endurance. In order to facilitate the instruction, a number of pairs should be engaged at the same time. From time to time winners should be matched to determine the champion of the unit.

■ 35. EXAMPLES.—The following examples of personal contests are given to show how this work is conducted. For more contests, see chapter 7.



FIGURE 18.

*a. Cane wrestling* (fig. 18).—Match men according to strength. The cane to be used may be an old broom handle. It is grasped with the right hand at the end, knuckles down, and with the left hand, knuckles up, inside and close to the opponent's right hand. The object is to wrest the cane from the opponent. Loss of grip with either hand loses the bout.

*b. Cock fight* (fig. 19).—Match men according to agility. Contestants hop on one leg, with the arms folded closely over

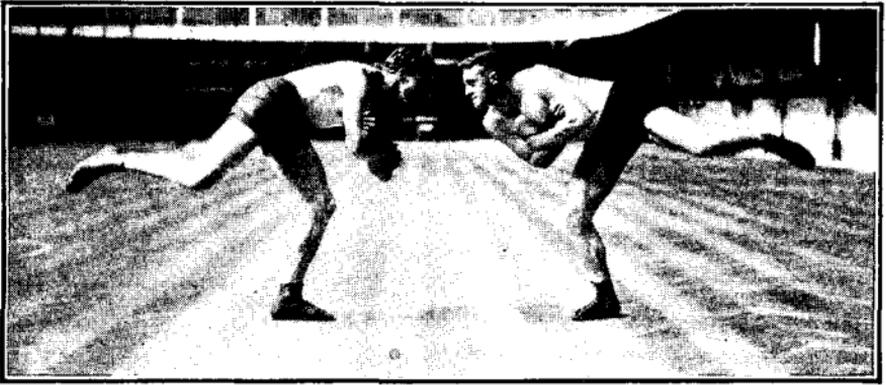


FIGURE 19.

the chest. The object is by butting with the fleshy part of the shoulder without raising the arm, or by dodging, to make



FIGURE 20.

the opponent change his feet or touch the ground with his hand or other part of the body.

*c. One-armed tug* (fig. 20).—Match men according to weight. Contestants stand facing each other, right hands

grasped, feet apart. The object is to pull the opponent forward without moving the feet. Shifting the feet loses the bout.

## SECTION IX

### MASS ATHLETICS AND GROUP GAMES

■ 36. **GENERAL.**—*a.* Mass athletics and group games as a part of the physical training program are primarily recreational. They are designed to develop interest and morale.

*b.* Contests in which a large number of participants engage simultaneously and which require the attention and interest of all those participating should always be given the preference over those in which only a few are engaged at the same time and those which do not require the alertness of mind mentioned above.

*c.* The spirit of rivalry between the groups must be incited and kept alive if the full value of these games and contests is to be obtained.

*d.* The simpler games and relay races may be conducted in the morning physical training period for their interest value. Some of these games are described in chapter 7.

*e.* The afternoon physical training period should be utilized for recreational purposes and therefore should be devoted to group games, mass athletics, and major athletic sports.

■ 37. **MAJOR ATHLETIC SPORTS.**—*a.* The major athletic sports, such as football, baseball, basketball, soccer, lacrosse, track and field meets, etc., are not treated in this manual. This work covers mass athletics only insofar as they apply to group games. Examples of these group games are given in chapter 7.

*b.* If it is deemed advisable, and equipment and facilities are available, the afternoon physical training period may be used occasionally for these so-called major athletic games. Although all men do not participate, experience has shown that no activity, except actual participation in battle, does

so much to build up esprit de corps and to instill in an organization a feeling of unit pride and loyalty as well organized and conducted athletic competition.

■ 38. METHOD OF CONDUCTING GAMES.—*a. Relay games.*—Relay games adapt themselves very readily to our present military organization and are considered excellent group games. Outside of a lower limit of eight, which enables us to have two teams of four each, the number that may take part is limited only by the space and equipment available and the skill of the instructor. Relay games are classified in this manual as either running relays or jumping and throwing relays.

(1) *Running relays.*—Running relays are those games in which the individual contestant travels alone or carries some other individual. These relays may be conducted in three distinct ways: the lane method, the shuttle method, and the circle method.

(a) *Lane method.*—In this method teams of the same number of men are arranged in parallel columns behind a common starting line. These columns should be about 10 feet apart. A turning point should be established for each team directly to its front, the distance from the starting line to the turning point varying with each race. The race is conducted by having each runner travel from the starting line to and around the turning point and back to the starting line, where each touches off the next one of his teammates. This continues until all have run. (Fig. 21 shows this formation.)

(b) *Shuttle method.*—The shuttle method is in many respects like the lane method. In the shuttle method two starting lines are used. These should be parallel and the desired distance apart. The halves in separate columns face each other directly in back of each line. Name the halves on one side "A's" and the halves on the other side "B's." The race is run by having the first player of the "A" half run to the opposite line, where he touches off the first player of the "B" half. This player runs to the opposite line, where he touches off the second player of the "A" half. This continues until all have run. (See fig. 22.)

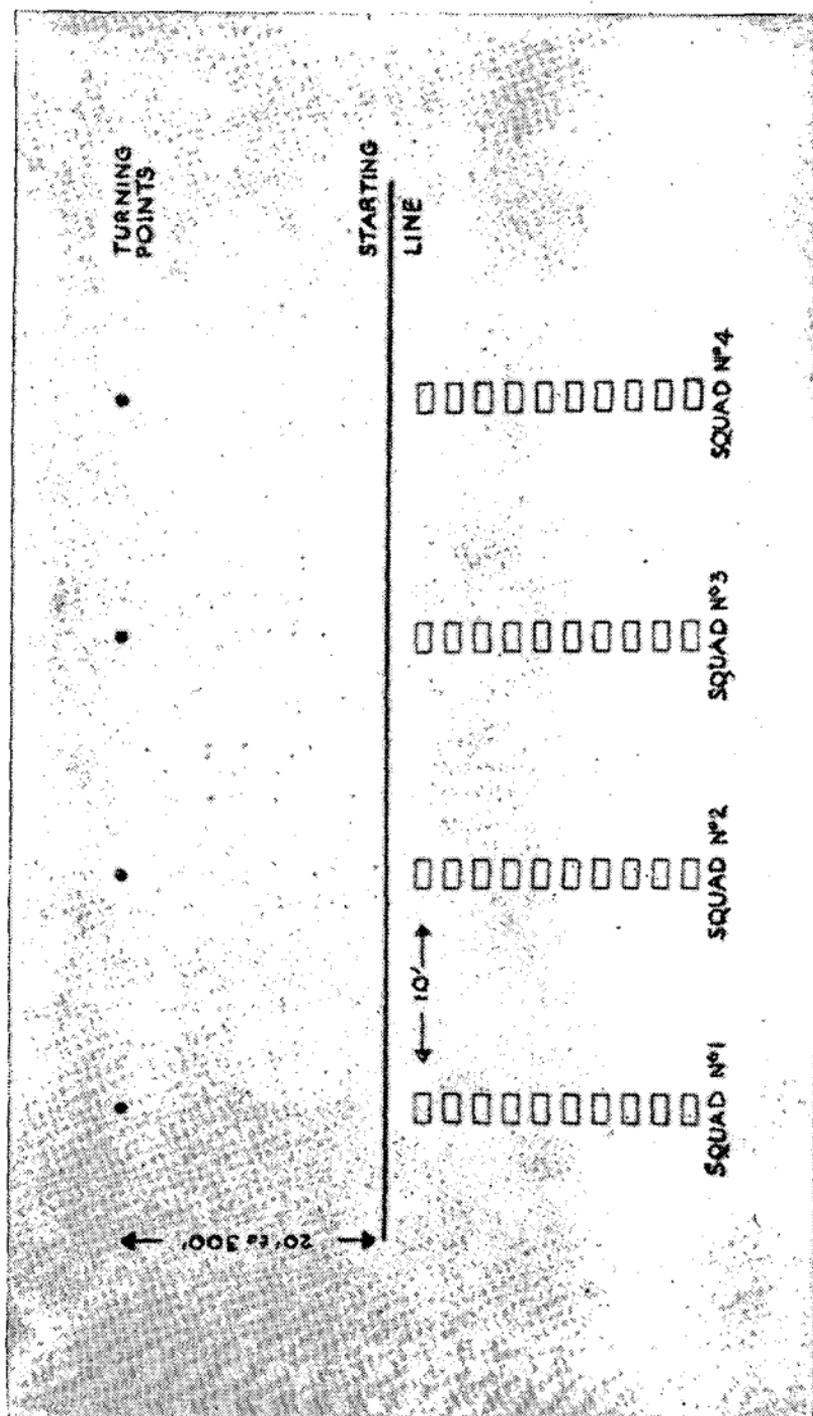


FIGURE 21.—Chart showing lane method.

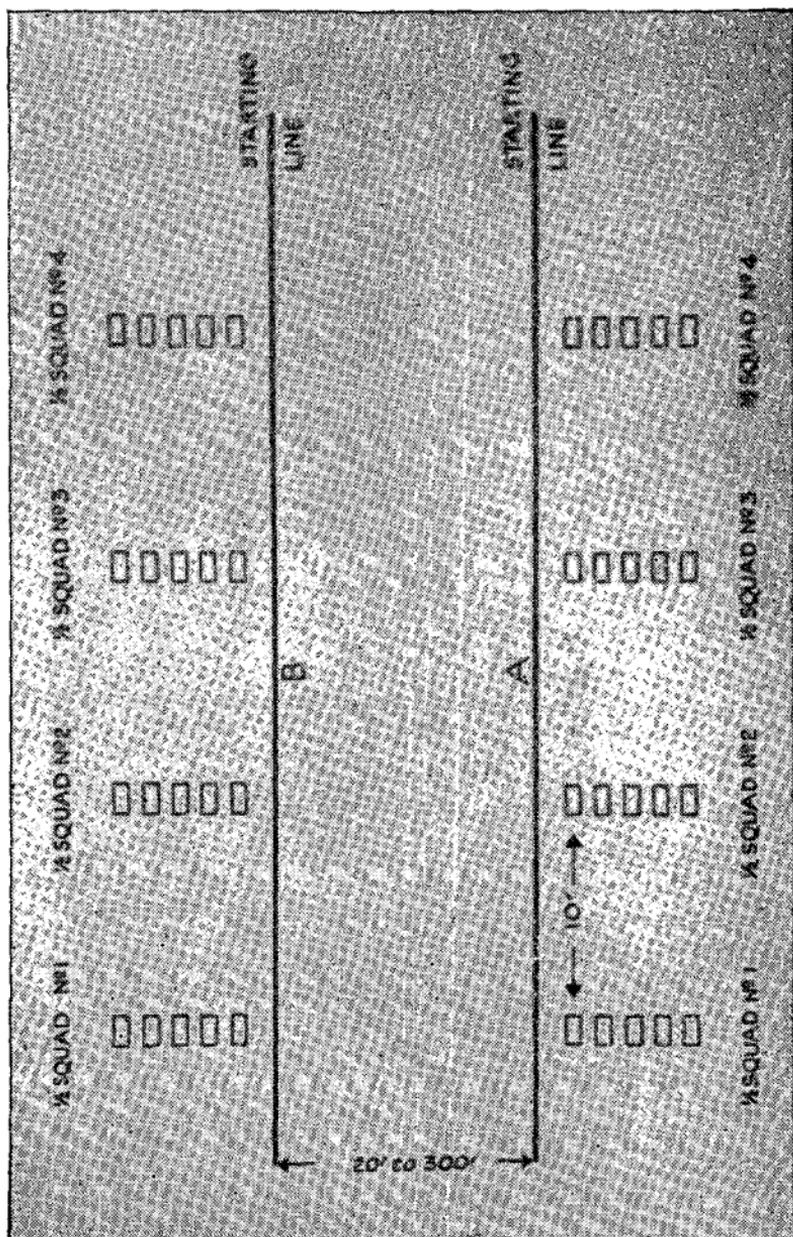


Figure 22.—Chart showing shuttle method.

(c) *Circle method.*—The circle method is conducted around a track. This track may be readily devised by placing four objects so they form a rectangle of the desired size. The track is considered to be outside of the objects. This type of relay may be conducted in two ways: First, by having all the teams use a common starting line; and second, by having each team use a separate starting line, these being evenly distributed about the track. The second method adds the element of the chase (each team is anxious to overtake the team in front) and is thus much preferred. To run the race the first player of each group travels about the track and at his starting line touches off the next player of his team who runs about and touches off the next. This continues until all have run. (See fig. 23.)

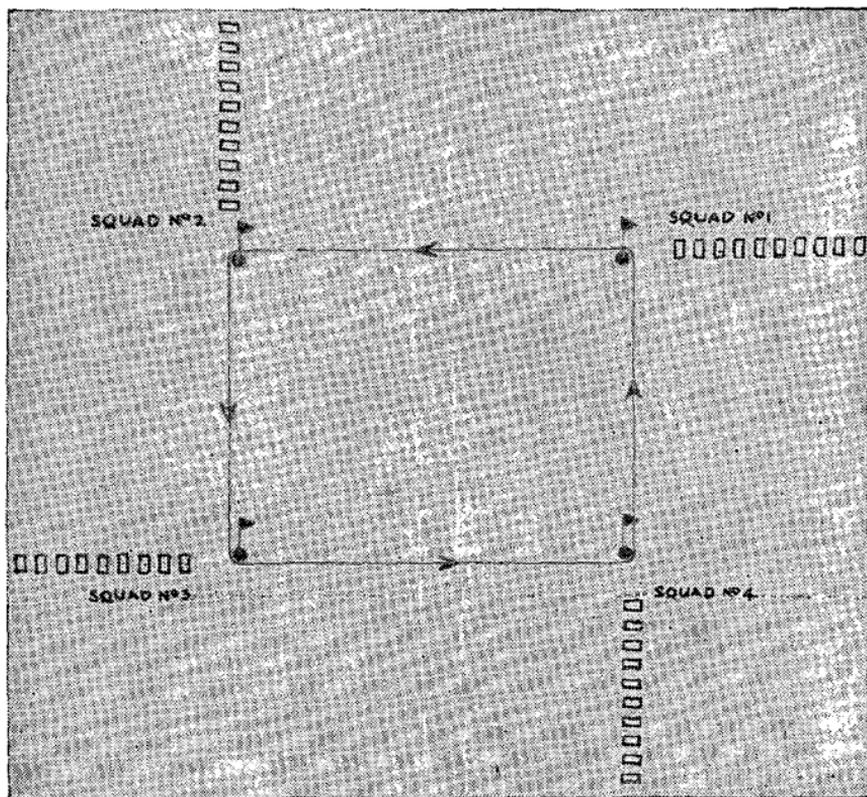


FIGURE 23.—Chart showing circle method.

(d) *Suggestions.*

1. The last player in a relay race should be conspicuously identified by tying a handkerchief around his head or arm, taking off his shirt, putting on his hat or taking it off, or some other method.
2. Another practice which is helpful in determining the progress of the race and eventually the winners, consists in having each player sit on the ground or assume a squatting position upon finishing.
3. Most relay races are best run with a baton. If a baton is not used, it is difficult to prevent stealing at the transfer. Handkerchiefs, short sticks, stones or other objects may be used as batons.
4. In conducting relay races it is very helpful to appoint a noncommissioned officer or some leader for each team. Make each leader responsible for the conduct of his team. In addition to his duty, he should coach and stimulate his team in any way he desires. Good team leaders are a great asset.

(2) *Jumping and throwing relays.*—Jumping and throwing contests may be conducted in relay fashion similar to running relays. In these jumping and throwing contests the competing teams should be paired and competition conducted in elimination tournament fashion. These contests may be run off in two distinct ways: the shuttle method and the cumulative method.

(a) In the shuttle method a base line is established. The two competing teams lined up on opposite sides of and facing the line. The leading man of team "A" is toeing the base line. The leading man of team "B" is some distance in front of the base line, the amount of this distance depending on the event. No. 1 of team "A" makes his jump (or throw) from the base line. No. 1 of team "B" executes a return jump (or throw), using as his starting line the rear (one nearest base line) heel mark of the first jumper or the spot where the first throw landed. No. 2 of team "A" then jumps back (or throws) from the mark made by No. 1 of team "B." Teams alternate jumping (or throwing) in this way until every man has par-

ticipated. If the last man of team "B" jumps (or throws) beyond the original base line, team "B" wins; if his jump (or throw) falls short, team "A" wins. Any competitor who over-

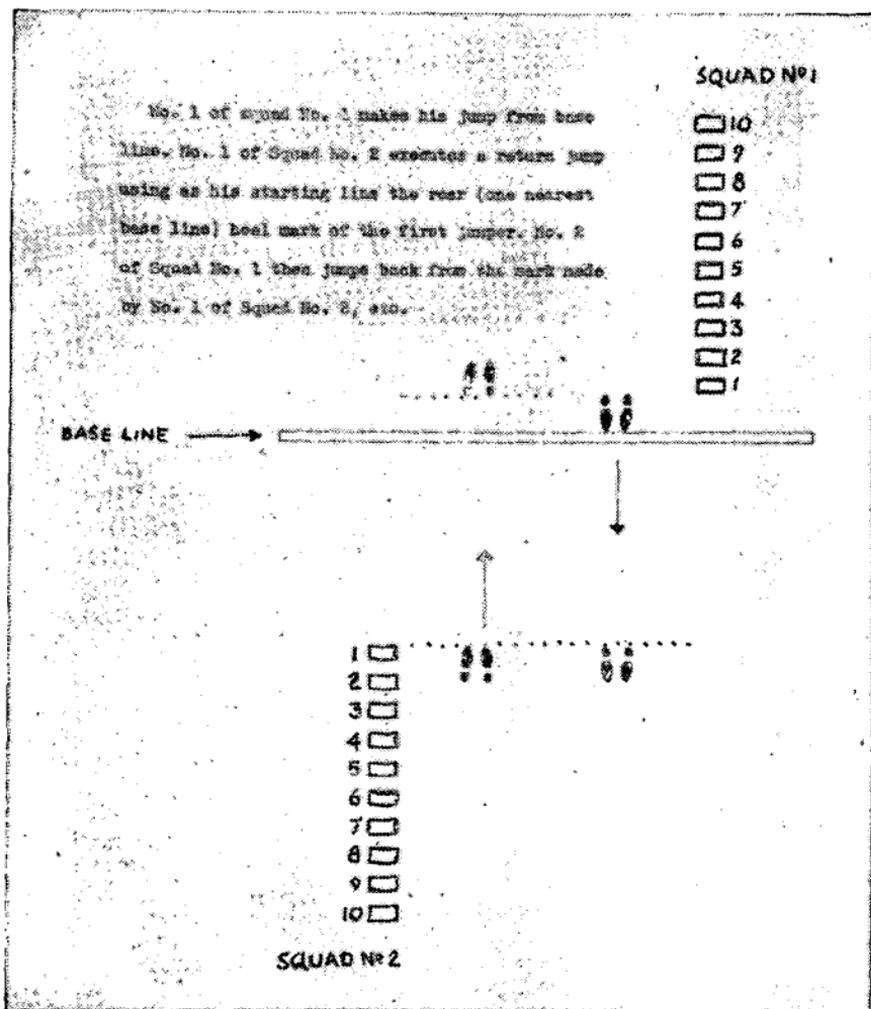


FIGURE 24.—Chart, jumping and throwing relays.

steps his base line in jumping or throwing is penalized twice the distance he overstepped the line, that is, his mark is brought back that distance. (See fig. 24.)

(b) Where there are ample facilities, jumping and throwing contests can be conducted in the ordinary cumulative relay fashion. The competing teams form in parallel columns. No. 1 of each team jumps or throws, No. 2 jumps or throws from No. 1's mark, and so on. The team jumping or throwing farthest from the base line wins.

*b. Circle games.*—Circle games are those games in which the participants are arranged in a circular formation. (See par. 80.)

*c. Miscellaneous games.*—There are a great number of group games which do not fall under the groupings of relay games or circle games. This manual, therefore, classifies them as miscellaneous games. (See par. 81.)

## CHAPTER 3

### MODEL SCHEDULES

■ 39. **GENERAL.**—*a.* The schedules contained in this chapter are given to assist instructors in arranging their daily program. However, these schedules serve only as a guide. The daily work should follow the same general sequence as shown in the model. A model schedule is given for the training of recruits, followed by a model schedule suitable for trained soldiers. All exercises and games or contests were taken from chapter 7. It is expected that with these models for examples and the many exercises and games listed in chapter 7, instructors will be able to make up daily lessons suitable for any group.

*b.* Other training requirements of the Mobilization Training Program may not permit daily scheduled physical training periods or may greatly curtail the time allotted in the model schedules. However, with the models as guides, the preparation of a well-rounded and beneficial schedule of physical training suitable for shorter periods and for any group is a matter of judicious selection only.

■ 40. **MODEL SCHEDULE FOR RECRUITS.**—*a. Morning period* (30 minutes).—(1) *Disciplinary exercises* (3 min.).—See section IV, chapter 2.

- (a) The position of PARADE REST.
- (b) The position of ATTENTION.
- (c) Execute LEFT FACE.
- (d) Execute RIGHT FACE.
- (e) Execute the HAND SALUTE.

**NOTE.**—These movements may be given either before or after the unit extends for setting-up exercises. In this schedule they are given before the extension is made.

- (f) Extend the unit for setting-up exercises.
- (g) Assume three different starting positions (see par. 21).
- (2) *Setting-up exercises* (12 to 15 min.).—See section V, chapter 2.
  - (a) Arm exercise, paragraph 74a(3).
  - (b) Leg exercise, paragraph 74b(2).
  - (c) Trunk exercise (turning), paragraph 74c(1) and (3).
  - (d) Trunk exercises (bending), paragraph 74d(2) and (4).

- (e) Shoulder exercise, paragraph 74e(4).
- (f) Neck exercises, paragraph 74f(1) and (3).
- (g) Balancing exercise, paragraph 74g(2).
- (h) Coordinating exercise, paragraph 74h(3).
- (i) Combined exercises, paragraph 74i(1) and (6).
- (j) Breathing exercise, paragraph 74j(2).

(3) *Marching and exercises while marching* (3 to 5 min.)—See section VI, chapter 2. The following exercises will be given as the unit marches to the obstacle course. If the disciplinary and setting-up exercises are given in the immediate vicinity of the obstacle course, these exercises will be given as the unit marches in a large square about the instructor.

- (a) March on toes in quick time.
  - (b) March, raising knees chest high, in quick time.
  - (c) Assume the squatting position with hands on hips and march in quick time.
  - (d) March in double time.
- (4) *Exercises in running, jumping, vaulting* (8 to 10 minutes).—See section VII, chapter 2.

(a) If the unit has not received instruction in overcoming the various obstacles, it will be taken to one of the obstacles not previously practiced. The instructor explains and demonstrates how to get beyond the obstacle and has the men practice three or four times, as many men practicing at the same time as the width of the course will permit. Then the instructor commands FOLLOW ME and leads his unit on a run, the length of which depends upon the condition and training of the men.

(b) If the unit has already received instruction in overcoming all the obstacles, the instructor will have each man run the entire course. The number running at one time is dependent upon the width of the course. When all have finished he commands FOLLOW ME and leads his unit on a run.

(5) *Personal contests and group games*.—As stated in paragraph 6, the time devoted to marching and exercises while marching, and work on the obstacle course should be devoted to personal contests or group games on alternate days. A model schedule for this type work is—

(a) *Personal contests* (about 5 min.).—Divide the unit into groups for a contest in Indian wrestling (par. 76a). Run an elimination contest within each group to select a champion. Then run off an elimination tournament with these men to determine the unit champion.

(b) *Group games* (about 10 min.).—Divide the unit into groups of an equal number of men (about 12 to a group) or use squad organizations in forming relay teams. Conduct one running relay race (par. 78) and one jumping relay race (par. 79).

b. *Afternoon period* (1 hr.).—(1) *Informal calisthenics or loosening-up exercise* (5 min.).—In order to “warm up”, each soldier individually takes a few exercises, such as swinging the arms, bending the trunk, kicking legs high in the air, walking in squatting position and double-timing in place.

(2) *Personal contests* (15 min.).—Pair off all men and run off the following three personal contests in the order given: rooster fight, back-to-back tug, and Roman wrestling, matching winners against winners and losers against losers. (See par. 76 j, d, and i.)

(3) *Group games* (40 min.).—For the first 10 minutes, run off a relay using the circle method (par. 78c). For the remaining 30 minutes, play mass volley ball (par. 81b(6)).

(4) *Tests*.—Usually one afternoon a week should be devoted to administering tests in order to indicate to the instructor the progress of his unit and to the individual soldier the improvement in his condition or ability.

■ 41. MODEL SCHEDULE FOR THE TRAINED SOLDIER.—a. *General*.—The physical training course for the trained soldier differs from that for the recruit in that its aim is more for the purpose of keeping the already trained men fit and prepared for any emergency rather than for instruction. The time required for physical training for the trained soldier can be considerably less than that required for the recruit. In the model schedule given below, the daily morning period is 15 minutes and the afternoon period 30 minutes. At least two afternoon periods per week should be scheduled.

b. *Morning period* (15 min.).—(1) This period is devoted to setting-up exercises alternating with running, jumping

and climbing (work on the obstacle course), personal contests and group games. The setting-up exercises should be scheduled every other day. Work on the obstacle course should be alternated with personal contests and group games and scheduled on the day setting-up exercises are not held. For example, schedule setting-up exercises Monday, Wednesday and Friday; work on the obstacle course Tuesday; group games on Thursday.

(2) A model schedule for one period of setting-up exercises is shown below.

(a) Arm exercise, paragraph 74a(8).

(b) Leg exercise, paragraph 74b(9).

(c) Trunk exercise (turning), paragraph 74c(5).

(d) Neck exercise, paragraph 74f(5).

(e) Balancing exercise, paragraph 74g(5).

(f) Coordinating exercise, paragraph 74h(5).

(g) Combined exercises, paragraph 74i(8), (11), (18), (26), (28), and (30).

(h) Breathing exercise, paragraph 74j(5).

(3) The following example is given to illustrate the work scheduled for the period to be spent on the obstacle course:

(a) Have all men perform "warming up" exercises at will for the first 5 minutes.

(b) Have all men run the obstacle course against time. They may be required to carry rifles or some other piece of equipment, or may run the course wearing light packs.

(c) After all men have completed the obstacle course, have them take a short run.

(4) The following example is given to illustrate the work scheduled for the period to be spent in personal contests and group games.

(a) For the first 5 minutes conduct contests in back-to-back tug and back-to-back push (see par. 76).

(b) For the last 10 minutes conduct a relay in footfall kicking using the shuttle method (par. 78b). Have all men take a short run.

*c. Afternoon period (30 min.).*—(1) Informal calisthenics or "loosening-up" exercises at will for the first 5 minutes.

(2) Have all men participate in mass soccer for remaining 25 minutes (see par. 81).

## CHAPTER 4

### RIFLE EXERCISES

■ 42. GENERAL.—*a.* The object of these exercises, which may also be performed with wands or bar bells, is the development of the muscles of the arms, shoulders, and upper back, and, by accustoming the men to the weight of the rifle, to develop that "handiness" so essential to its successful use.

*b.* When these exercises are combined with movements of the other parts of the body, they serve as a splendid, though rather strenuous, method for the all-around development of the men. As the weight of the piece is considerable, instructors are cautioned to be reasonable in their demands. Far better results are obtained when these exercises are performed at commands than when they are grouped and performed for spectacular purposes.

■ 43. STARTING POSITION.—*a.* All the exercises start from the starting position, which is the low extended arm horizontal position of the rifle in front of the body; the right hand grasps the small of the stock and the left hand the barrel; the knuckles are turned to the front and the distance between the hands is slightly greater than the width of the shoulders (fig. 25).

b. This position is assumed at the command 1. STARTING, 2. POSITION. At the command POSITION, the piece is brought to the port and lowered snappily to the front horizontal.



FIGURE 25.

c. To recover the position of order, command: 1. ORDER, 2. ARMS. The piece is first brought to the port and then to the order.

■ 44. ARM EXERCISES.—*a.* Assume the starting position (fig. 25); all exercises are in two counts. The movement begins at the command EXERCISE, and is discontinued at HALT.

- (1) Raise piece to front, extended arm horizontal.
- (2) Raise piece to high overhead, extended arm horizontal.

- (3) Raise piece to side horizontal, right or left (fig. 26).  
(4) Raise piece to front perpendicular, right or left hand up (fig. 27).



FIGURE 26.

- (5) Raise piece to front bent arm horizontal, waist high.  
(6) Raise piece to front bent arm horizontal, shoulder high (fig. 28).

(7) Raise piece to rear bent arm horizontal, on shoulders (fig. 29).

(8) Raise piece to front bent arm horizontal, shoulder high, arms crossed, left over right or vice versa.



FIGURE 27.

(9) Raise piece to low side perpendicular, right or left, left or right hand up (fig. 30).

(10) Raise piece to high side perpendicular, right or left (fig. 31).

b. From front bent arm horizontal, shoulder high:

(1) Thrust piece forward, upward, downward, or sideward, right or left.

(2) Thrust piece upward from rear, bent arm horizontal.



FIGURE 28.

c. From high extended arm horizontal: circle piece from right to left, or from left to right. Describe complete circle parallel with the front of the body.

■ 45. ARM COMBINATION.—The following exercises consist of four movements, the third carrying the piece back to the

first position, and the fourth to the starting position; in other words, the piece is carried back in reverse order at three and four.



FIGURE 29.

*a.* Raise piece to high extended arm horizontal; flex to the bent arm horizontal in front of shoulders and return in reverse order.

*b.* Same as above, except that the piece is brought to the shoulders in rear of head.

c. Raise piece as in *a* above, lower to right horizontal, and return in reverse order.

*d.* Same, left.

*e.* Raise piece to front bent arm horizontal, shoulder high; thrust piece upward, and return in reverse order.



FIGURE 30.

*f.* Same, thrusting piece forward or sideward right or left.

*g.* Raise piece to front extended arm perpendicular, right hand up; reverse, bringing left hand up; reverse again and lower.

*h.* Raise piece to low side perpendicular, left hand up; change to high side perpendicular, right hand up; return in reverse order.

*i.* Same on the left.

*j.* Raise piece to front extended arm horizontal; cross and bend arms to front bent arm horizontal right over left; return in reverse order.

*k.* Raise piece to front bent arm horizontal, arms crossed, right over left; change by crossing left over right; reverse and down.



FIGURE 31.

■ 46. ARM, LEG, AND TRUNK COMBINATIONS.—*a.* From the starting position, each exercise in two counts:

(1) Raise piece to front extended arm horizontal and bend knees quarter, half, or full.

(2) Raise piece to high extend arm horizontal and raise on toes.

(3) Raise piece as in (2) above and bend trunk forward.

(4) Raise piece to rear bent arm horizontal on shoulders and bend trunk forward.

(5) Raise piece to front perpendicular, left hand up, and bend trunk sideward right (fig. 32).

(6) Same to the left, right hand up.

(7) Raise piece to high side perpendicular and bend trunk sideward left.



FIGURE 32.

(8) Same, piece on the left, bending trunk to the right.

b. From front bent arm horizontal, shoulder high—

(1) Thrust piece forward or upward and bend knees, quarter, half, or full.

(2) Raise piece forward and upward and bend trunk forward.

(3) Thrust piece sideward right and bend trunk sideward left.

(4) Same reversed.

- (5) Thrust piece forward and twist body to the left or right.
- (6) Thrust piece upward and bend trunk backward.
- (7) Thrust piece upward and hop to side straddle.
- (8) Thrust piece forward or upward and lunge forward right or left.



FIGURE 33.

- (9) Thrust piece upward or forward and lunge obliquely forward right or left.
- (10) Thrust piece sideward left and lunge sideward right or left.
- (11) Thrust piece upward and lunge backward.
- (12) Thrust piece downward; lunge forward and bend body forward (fig. 33).

(13) Thrust piece upward; lunge backward and bend trunk backward (fig. 34).



FIGURE 34.

(14) Thrust piece side right and lunge and bend trunk sideward left (fig. 35).



FIGURE 35.

■ 47. RIFLE DRILL COMBINATION.—This combination is composed of three groups, each group containing four exercises, and together they form a combination which can be adapted to music. Each exercise is composed of four movements and should be executed four times, twice to the right and twice to the left, alternately. The third position always corresponds to the first, and the fourth to the starting position. When performed to music it is advisable to employ "two-four" time,



FIGURE 36.

allowing two beats to every movement, or four measures to an exercise, the action occurring on the *first beat* and a pause in position during the *second beat*. If this is done and the tempo is made to suit the movements, it will be possible to execute the exercises with precision and vigor, and slurring a movement for the sake of keeping time will be eliminated. Every group should be preceded by an introduction of four

measures. All exercises begin and end with the first or starting position (fig. 25).

*a. First group.—(1) First exercise.—*Counts 1-2. Raise piece to bent arm front horizontal, shoulder high, and stride forward right (fig. 36).



FIGURE 37.

3-4. Face to the left on both heels and extend piece upward (fig. 37).

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

(2) *Second exercise.*—Counts 1-2. Raise piece to extended high horizontal, and stride sideward right (fig. 38).



FIGURE 38.

3-4. Bend right knee and lower piece to left horizontal (fig. 39).



FIGURE 39.

5-6. Resume first position.  
7-8. Resume starting position.  
Repeat left, right, left.

(3) *Third exercise.*—Counts 1-2. Raise piece to high side perpendicular on the left, left hand up, and strike backward right (fig. 40).

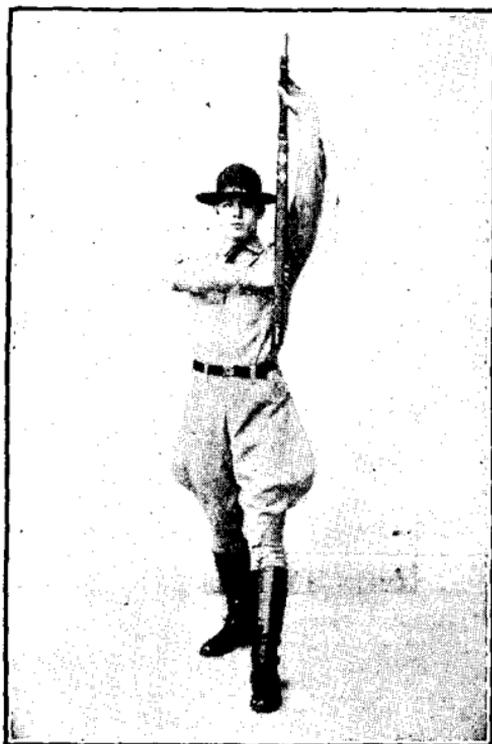


FIGURE 40.

3-4. Face about on heels and swing piece down and up to high side perpendicular on the right (fig. 41).



FIGURE 41.

5-6. Resume first position.  
7-8. Resume starting position.  
Repeat left, right, left.

(4) *Fourth exercise.*—Counts 1-2. Raise piece to extended high horizontal, and stride obliquely forward right (fig. 42).



FIGURE 42.

3-4. Face about on heels and lower piece to horizontal on shoulders (fig. 43).



FIGURE 43.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

*b. Second group.—(1) First exercise.—Counts 1-2. Lower piece to front extended horizontal and bend trunk forward (fig. 44).*



FIGURE 44.

3-4. Lunge obliquely forward right and raise piece to right oblique, left hand at shoulder (fig. 45).



FIGURE 45.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

(2) *Second exercise.*—Counts 1-2. Raise piece to a high perpendicular on the left, left hand up, and bend trunk side-ward right (fig. 46).



FIGURE 46.

3-4. Lunge sideward right and swing piece down and up to right, high perpendicular, right hand up (fig. 47).



FIGURE 47.

5-6. Resume first position.

7-8. Resume starting position.

Repeat, left, right, left.

(3) *Third exercise.*—Counts 1-2. Raise piece to high extended arm horizontal and bend trunk backward (fig. 48).



FIGURE 48.

3-4. Lunge forward right, and swing piece to side horizontal, left hand to the rear (fig. 49).



FIGURE 49.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

(4) *Fourth exercise.*—Counts 1-2. Raise piece to right high perpendicular and side step position left (fig. 50).



FIGURE 50.

3-4. Lunge sideward left and swing piece to left high perpendicular (fig. 51).



FIGURE 51.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

c. *Third group.*—(1) *First exercise.*—Counts 1-2. Raise piece to front bent horizontal, arms crossed, left over right; lunge sideward right and bend trunk sideward right (fig. 52).



FIGURE 52.

3-4. Extend right knee and bend trunk to the left, bending left knee and recrossing arms, right over left (fig. 53).



FIGURE 53.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

(2) *Second exercise.*—Counts 1-2. Raise piece to bent arm horizontal; face right and lunge forward right and bend trunk forward (fig. 54).



FIGURE 54.

3-4. Raise trunk, turn to the left on both heels and extend piece overhead (fig. 55).

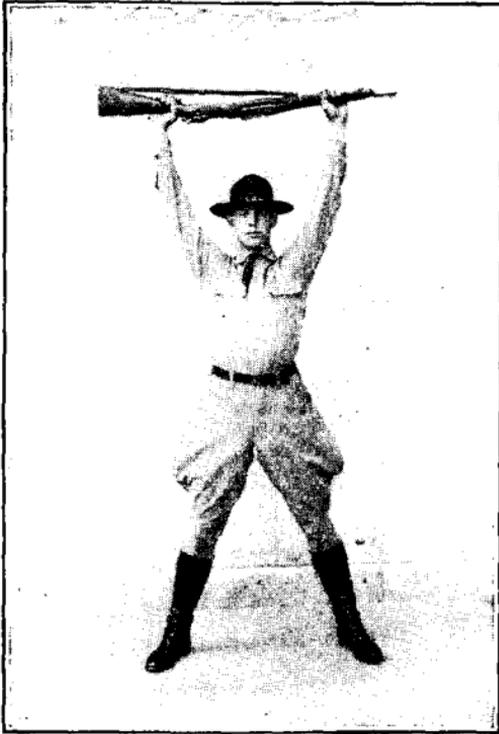


FIGURE 55.

5-6. Resume first position.

7-8. Resume starting position.

Repeat left, right, left.

(3) *Third exercise.*—Counts 1-2. Raise piece to high horizontal; lunge forward right (fig. 56).



FIGURE 56.

3-4. Bend trunk forward and lower piece to low front horizontal (fig. 57).



FIGURE 57.

5-6. Resume first position.  
7-8. Resume starting position.  
Repeat left, right, left.

(4) *Fourth exercise.*—Counts 1-2. Raise piece to high extended horizontal and hop to side straddle position (fig. 58).



FIGURE 58.

3-4. Bend trunk forward and swing piece to extended low horizontal, left hand between legs, right hand forward (fig. 59).



FIGURE 59.

5-6. Resume first position.  
7-8. Resume starting position.  
Repeat left, right, left.

## CHAPTER 5

### SWIMMING, LIFESAVING AND WATER SAFETY

	Paragraphs
SECTION I. Swimming.....	48-60
II. Lifesaving and water safety.....	61-66

#### SECTION I

#### SWIMMING

■ 48. **SWIMMING AS A MILITARY ACCOMPLISHMENT.**—*a.* In the past, many soldiers have lost their lives through their inability to handle themselves successfully in the water. This has been due to ignorance of the simplest methods of swimming and water safety. Furthermore, lack of experience and confidence in the water, on the part of many soldiers, has frequently seriously handicapped or caused the complete failure of attempted maneuvers. Present-day warfare, with its submarine attacks on troop ships, its battles over flooded areas, and across streams and canals, has given a new emphasis to the importance of swimming in the training of a soldier.

*b.* All soldiers should receive instruction and training in swimming, both without and with equipment, to give them the confidence which comes from actual experience in the water. Soldiers who have been properly instructed should be able to ford streams, participate in landing operations, and take care of themselves in the water in emergencies.

*c.* The buoyancy of the full pack will furnish considerable support to a man in the water for a short time, making swimming a short distance relatively easy. The light pack has little, if any, buoyancy and is a hindrance instead of an aid. Therefore, as soon as a soldier has acquired an elementary knowledge of swimming, he should be given practice in swimming with a gradually increasing amount of equipment until he is able to negotiate a reasonable distance in the water

without becoming exhausted or without damaging his equipment.

*d.* Although it would be desirable for every soldier to be an expert swimmer, this state is hardly to be expected. A most valuable beginning can be made, however, by selecting those swimming activities which have most military value and striving for a reasonable degree of proficiency in them. Such activities should include—

(1) A good working knowledge of the most useful fundamental strokes.

(2) The ability to swim short distances with arms or legs only.

(3) The ability to swim a short distance when fully dressed and when carrying equipment.

(4) A fair knowledge of the fundamentals of personal safety and self-defense in the water.

(5) A fair knowledge of the methods of rescuing those in peril of drowning and of reviving those who have nearly drowned.

(6) At least some elementary experience in competitive swimming activities for their recreational value.

*e.* Instruction in diving is unnecessary since diving has no military value. Normally, a soldier will never be forced to take to the water by diving.

■ 49. SWIMMING STROKES.—Of all the accepted fundamental strokes, only four have real military value. These are the side stroke, the back stroke, the breast stroke, and the trudgeon stroke.

*a.* The side stroke is the most valuable stroke for lifesaving since it is the one that is used in the cross chest carry of a victim. This carry is by far the most secure, most useful, and easiest to effect.

*b.* In the back stroke the body is maintained in the easiest floating position. It is therefore the best stroke for a tired swimmer. It is also a good stroke for swimming with full equipment since the buoyancy of the pack in its normal position on the back helps to support the body.

*c.* The breast stroke is the oldest of the fundamental strokes. It is useful in reconnaissance or when unexpectedly upset in

deep water, since its position in the water is the one most naturally assumed when attempting to get one's bearings. It is also very useful in the "tired swimmer's" carry in lifesaving.

d. The trudgeon stroke is a very powerful and serviceable stroke. It was used for racing prior to the invention of the faster crawl stroke. It is still to be reckoned as a fast and efficient stroke, far less difficult to master than the crawl stroke, and far less tiring to the average swimmer.

■ 50. METHODS OF TEACHING THE FUNDAMENTAL STROKES.—a. Each of the strokes discussed above lends itself readily to mass methods of instruction, which are necessary if large numbers are to be taught in a short period of time. Each stroke can, and should be, taught first by drill on land and then by drill in the water.

b. Land drills are of immense value because it is manifestly easier for the pupil to grasp the mechanics of a stroke when he is on dry land and not struggling for air. Once the land drill is mastered the instruction can be transferred easily to the water.

c. In the description of the land and water drills which follows, the cadence system is used, that is, counts are used and the action of the arms, hands, legs and feet for each count is described. The land drill is further broken down by analysis of one arm and one leg at a time. Every effort is made to explain the proper mechanics of each stroke with the proper timing for each action. Numerous photographs are included to illustrate further and classify these mechanics.

■ 51. FACILITIES.—a. A word should be said about facilities for swimming instruction. A natural shelving beach with gradually deepening water is desirable. The water in the shallow area, where the beginner's instruction will take place, should be about  $3\frac{1}{2}$  to 4 feet deep. If the water is too deep, a crib may be built supported on piers or by floats.

b. The water itself should be warm,  $78^{\circ}$  being ideal. It should be clean and sanitary.

c. Rubber air-inflated tubes, kick boards, and other aids are useful but not necessary. Lifesaving equipment, such as ring buoys, a long pole, etc., should be on hand.

■ 52. BREATHING.—*a.* Proper breathing while swimming is probably the most difficult part of the swimming instruction for the beginner to master. He cannot take a breath at any time he pleases, because his mouth or nose is under water or at least covered by splashing water during a great part of the time he is swimming.

*b.* Furthermore, it is difficult to inhale while swimming, even when the mouth and nose are above water, due to the increased pressure on the swimmer's chest caused by his submersion in the water.

*c.* Exhaling under water, which is essential, is also very difficult to master because of the perfectly natural reluctance of the body to exhale into and against the pressure of water. Man was not intended to breathe easily in the water. Only practice will overcome this natural condition.

*d.* Three elements are necessary for the mastery of correct breathing in the water.

(1) To time the inhalation so that it occurs at that point when the mouth and nose are above water. This period when the mouth and nose are clear is often very short—not over one-fifth of a second in some strokes.

(2) To breathe in quickly and fully, through the mouth only, in a gasping manner in order to completely fill the lungs in the brief period that the nose and mouth are above water.

(3) To exhale under the water through the mouth and nose. It is especially important that this exhalation commence immediately after the inhalation in order that all the air will be expelled by the time that point in the stroke is reached when another inhalation occurs. *The breath must be exhaled by a steady, forceful, and continuous pressure, sustained by the contraction of the abdominal muscles, thus causing the diaphragm to press upward, forcing the air out of the lungs.* Likewise it is important that the air be expelled through the nose as well as the mouth in order that a steady outward pressure exists in the nasal cavity, thus preventing water from entering the nose and sinuses.

■ 53. INSTRUCTING THE BEGINNER.—*a.* A nonswimmer is generally fearful of the water because he is unable to breathe while attempting to swim and also because he is not con-

vinced that his body is naturally buoyant. He therefore tries to climb high out of the water with the result that he tightens all his muscles, exhausts himself quickly, and creates general discomfort for himself. He must therefore be convinced of two things: first, that he can breathe while in the water, and second, that he can stay on the surface if he will relax and lie on the surface and keep moving.

b. The following exercises are logical steps in the instruction of beginners. For best results, each instructor should have a group no larger than a platoon, but a much larger group per instructor may be handled if necessary, provided the facilities permit. In the description of each exercise, it is assumed that the depth of the water is about  $3\frac{1}{2}$  feet.

(1) Divide the group into pairs and have them stand in the water facing each other about 6 feet apart. At the command **READY**, each man inhales deeply and quickly through the mouth only and then partially exhales. At the command **GO**, each man lowers his head, eyes open, below the surface of the water and walks towards his partner, clasping the right hand of his partner. Then each raises his head above the water and assumes the standing position. This exercise should be repeated until all men do it easily.

(2) Have the group stand in a line facing the instructor, each man placing his hands on his hips, thighs, or knees so that his chin is just above the surface. Then have each man inhale quickly and deeply through the mouth only, lower his face into the water at once, so that his eyes are just under the surface, then forcibly exhale all of the air in his lungs through his mouth and nose, and then raise the head and inhale. Repeat. Repeat again twice with but one inhalation for the two dips. Also repeat while gradually increasing the number of dips, making each exhalation under water.

(3) Have the group stand in a line with about 3 feet between men. Each man then extends both arms in front of him upon the surface of the water. He then inhales quickly and fully through the mouth, lowers his face into the water, holds his breath, and then shoves off from the bottom, allowing his body to stretch out fully upon the water. He maintains this position for a few seconds only and recovers to the standing position before his forward momentum is lost.

To recover to the standing position, he doubles his knees under his body and at the same time sweeps his arm downward. This brings the body to the upright position. He then extends his legs and stands up. This exercise should be repeated until each man can do it easily.

(4) This exercise is identical to the exercise in (3) above except that each man exhales fully under water, through his mouth and nose, when gliding forward, recovering as soon as all his air is expelled. This should be repeated until each man can do it easily.

(5) Have the group stand in a line with about 3 feet between each man. Each man then inhales deeply, holds his breath and shoves off from the bottom while lying 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 stand up. In performing this "floating" exercise, the arms should be relaxed along the sides, palms of hands down and the entire arm on the surface of the water. This exercise should be repeated until each man can lie back on the water and float comfortably for a few seconds. (Even those rare individuals who cannot float motionless are able to lie flat in this position for a few seconds due to the body momentum along the surface.)

54. INSTRUCTIONS IN THE FUNDAMENTAL STROKES.—*a.* For instructions in the various fundamental strokes, to obtain the best results, each instructor should have a group no larger than a platoon.

*b.* The instruction that follows is given as though the instructor were instructing a single pupil. Obviously, each man in his group performs the exercises at the same time as every other man. The instructions are given in outline form for simplicity and clarity.

■ 55. SIDE STROKES.—*a. Land drill.*—(1) *Starting position* (fig. 60).—Stand erect with the right arm overhead, palm of hand facing right, left arm at side of body, palm against the thigh.

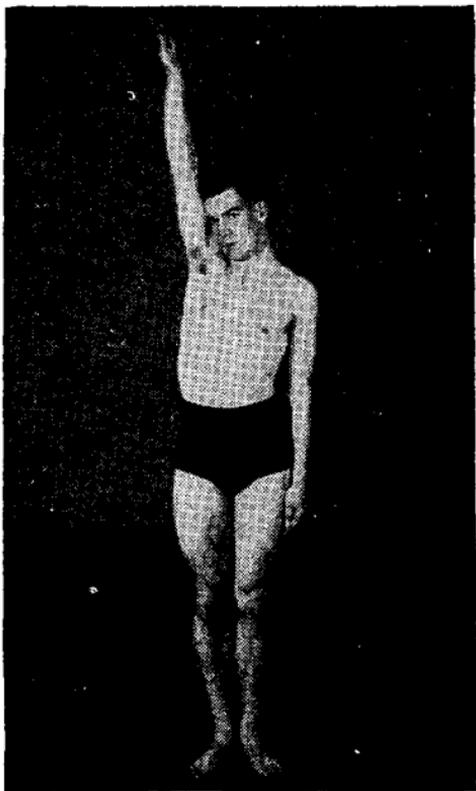


FIGURE 60.—Starting position, side stroke.

(2) *Arms* (fig. 61).—(a) At ONE, the right arm sweeps downward laterally without bending, until the hand is about 8 inches from the thigh; then the right elbow is bent and held close to the side, while the palm of the hand is brought up close to and across the chest to a point directly in front of the right shoulder. Just after the right arm starts downward, the left arm is bent at the elbow and the palm of the

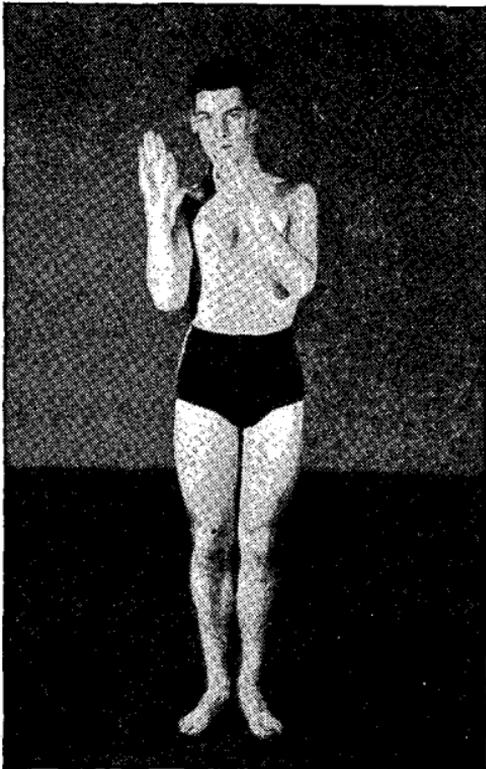


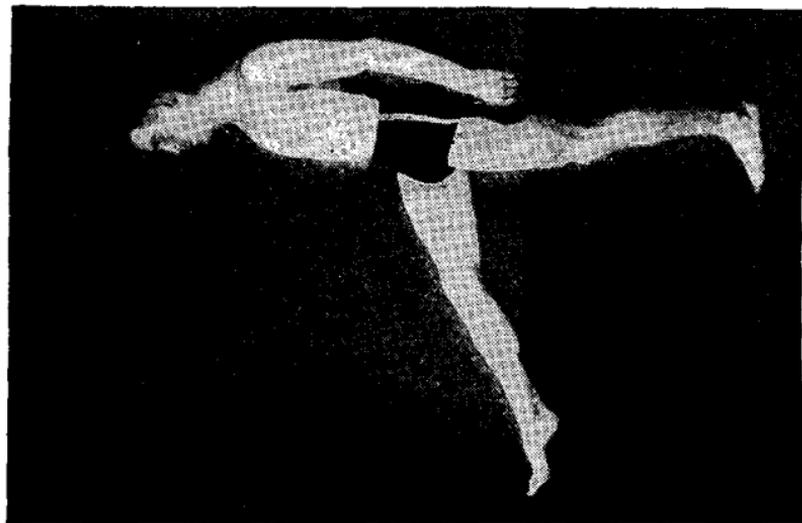
FIGURE 61.—Arms, side stroke.

hand is swept upward across the chest to a point almost touching the right hand when that hand reaches the point in front of the right shoulder. Both hands reach this position at the same time.

(b) At two, the right hand is pointed upward and the right arm extended to the starting position while the left arm is straightened and swept downward in front of the chest

to the starting position. In the downward movement of the left arm the palm faces downward with the thumb toward the body.

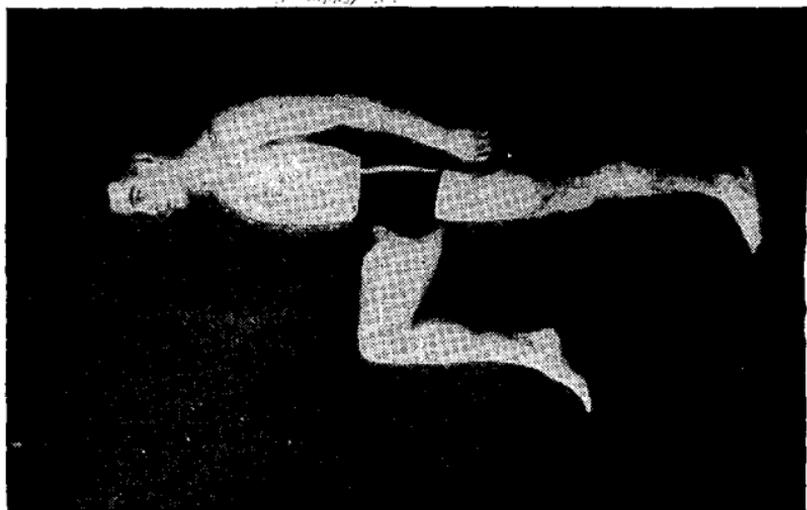
(3) *Legs*.—Since only one leg can be used at a time in the drill, the explanation is given separately for each.



② Second step.

FIGURE 62.—Right leg, side stroke forward,

① First step.



(a) *Right leg*.—At ONE, the right leg is raised exactly as if to step forward, knee raised to the height of the hip, lower

leg hanging perpendicular (fig. 62 ①). At two, the right knee is first straightened fully with foot reaching well forward (fig. 62 ②) and then the entire leg is swept downward to the starting position (all this in one motion).

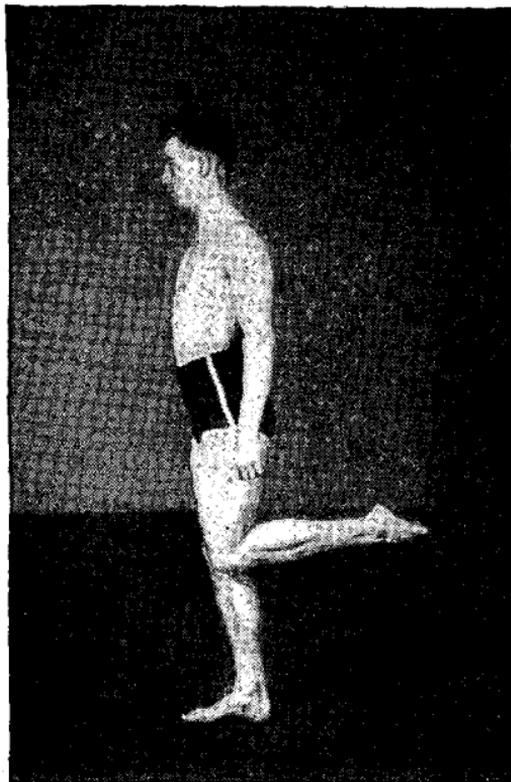


FIGURE 63.—Left leg, side stroke.

(b) *Left leg.*—At ONE, the left knee is bent about 90° so that the heel is raised to the rear (fig. 63). The thigh does not move. At two, the left leg is swept down to the starting position. The thigh does not move.

(4) *Arms and legs.*—Practice with the arms only at first until the timing is acquired and then practice using both

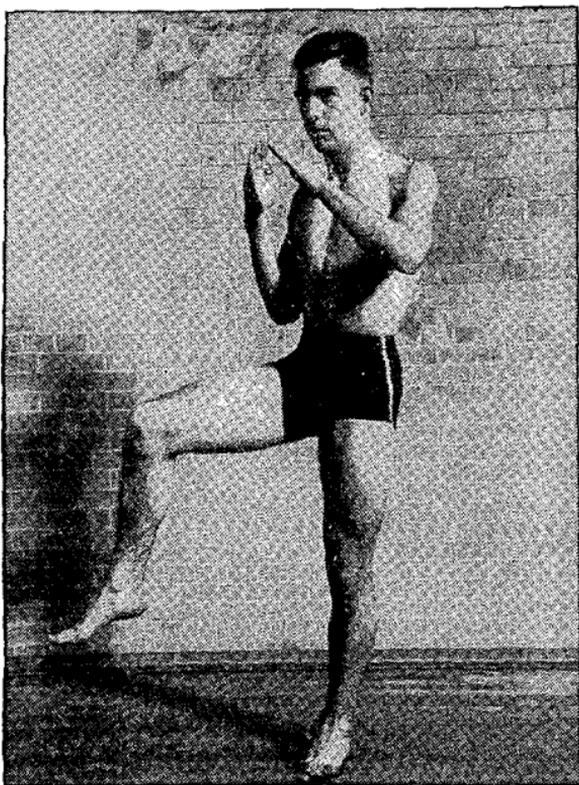


FIGURE 64.—Side stroke, both arms and right leg.

arms and the right leg; then both arms and the left leg. (See fig. 64 for the position of both arms and the right leg at the completion of ONE.)

*b. Water drill.*—(1) *Arms.*—In shallow water, bend knees until the shoulders are at the water level. Turn sideward and practice the arm stroke as in the land drill while walking along the bottom. Give attention to turning the palms

to "grip" the water on their downward motion and into a "knife blade" so as to cut the water on their recovery.

(2) *Legs*.—Using a support (kick board, a partner, or the edge of pool or float), practice the leg action as in the land drill except working both legs together. Do not allow the legs to sweep past each other on their recovery to the extended position. This leg action is commonly called the "scissors kick."

(3) *Arms and legs*.—(a) Swim the side stroke with a support (a partner or an inflated tube) until the timing is mastered. The head is held in a natural position with the right ear submerged and the chin turned slightly upward. Inhale through the mouth during the leg drive and exhale through the mouth and nose throughout the rest of the stroke. It is easy to breath in the side stroke, since the mouth is not necessarily under the water at any time unless in rough water.

(b) Swim as in (a) above except without the support. Try to take advantage of the "glide" by holding the extended position a brief moment.

NOTE.—The side stroke can be swum on either side; to swim it on the left side, simply reverse all of the actions described above.

c. *Over-arm side stroke*.—The only change from the regular side stroke is to bring the top (left) arm forward out of the water instead of bringing it across and close to the chest.

■ 56. **TRUDGEON STROKE**.—This stroke develops from the over-arm side stroke; that is, after the kick, turn to prone position, face down; bring right arm straight through water to side of right thigh, at the same time bringing left arm over water to extended position. During these operations the legs are idle, holding the same position as at finish of the kick. The right arm then comes forward over water, the left arm at the same time sweeping back through the water. The kick is executed as the right hand hits the water while the body is rolled on the right side and breath is taken quickly. Exhalation is made through the water, for the mouth goes under water when the swimmer rolls back to prone position for the right arm pull. This is nothing more than the over-hand side stroke, with the other arm also brought forward over water. Only one kick is given in each 2-arm cycle, as in the side

stroke. The kick is also executed at the same time as in the side stroke; that is, as the right arm extends. This stroke may also be reversed to roll on the left side, kicking as the left arm extends.

■ 57. ELEMENTARY BACK STROKE.—*a. Land drill.*—(1) *Starting position.*—Stand erect with arms at sides, head drawn downward so that the chin nearly rests on the chest.

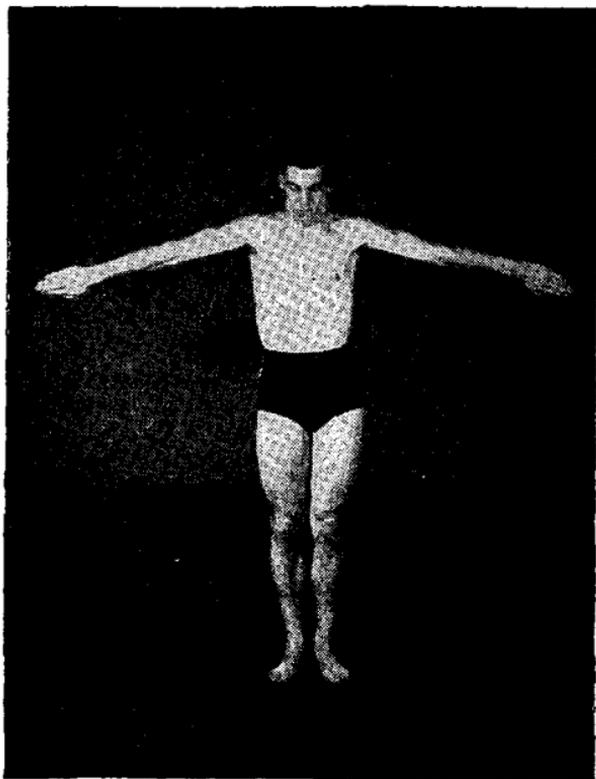
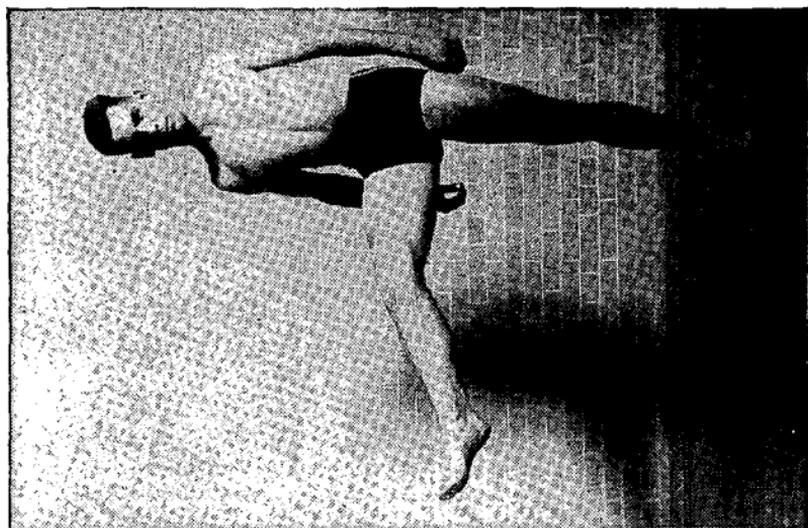


FIGURE 65.—Arms, back stroke.

(2) *Arms* (fig. 65).—(a) At ONE, turn the palms outward with thumbs to the rear and raise the arms nearly shoulder high, elbows straight throughout; turn palms downward as the arms reach the shoulder high position.

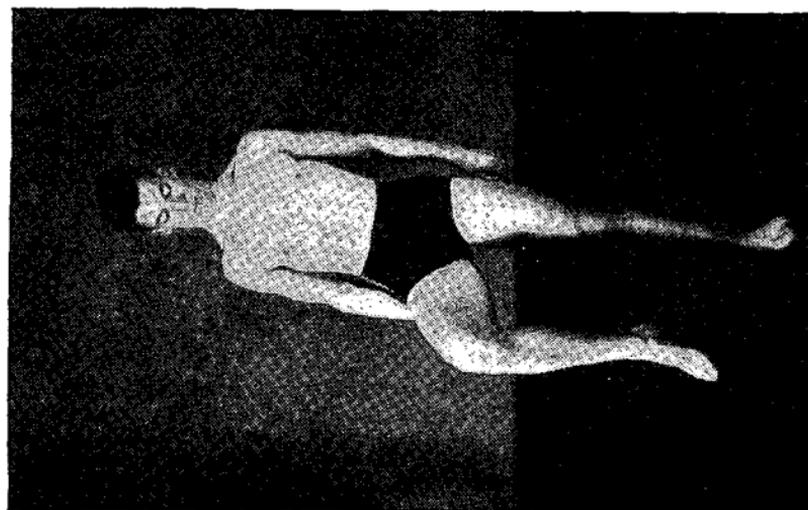
(b) At two, sweep the arm downward to the starting position, elbows straight throughout.

(3) *Legs* (fig. 66).—(a) At one, raise the right leg (starting the movement when the arms are about half way upward toward the shoulder high position) by bending the knee and



② Right leg, back stroke, at two.

FIGURE 66.



① Legs, back stroke.

raising it slightly forward and to the right side, lower leg vertical (fig. 66①).

(b) At two, reach out with the foot, extending the leg (fig. 66②) and sweep the leg back to the starting position.

(c) Repeat the same movements with the left leg, alternating with the right leg.

**NOTE.**—The entire leg movement should be one continuous movement. The back should be kept straight throughout, not bending as the legs are drawn up.

(4) *Arms and legs.*—Practice at first with the arms only, then with the arms and the right leg and then with the arms and the left leg.

*b. Water drill.*—(1) *Arms.*—(a) Stand in shallow water; stoop until the water is shoulder high; extend arms forward with the hands a few inches under the surface, keeping the body erect. Turn the palms outward (thumbs downward) and sweep arms backward through the water to a line about even with the shoulders; then rotate the hands so that the palms face forward; and then sweep the arms forward to the starting position.

(b) Lean backwards, holding the head tucked downward toward the chest, and push off from the bottom. Swim with the arm action described above for one or two strokes (holding the breath) and then stand up.

(2) *Legs.*—Using a support, lie back and push off as in (1) (b) above and practice the leg action as in the land drill *except that both legs work together*. This kick is commonly called the “inverted frog kick.”

(3) *Arms and legs.*—(a) Using a support, swim by combining the legs and arms. The breath is inhaled through the mouth immediately after the leg drive and exhaled through the nose and mouth during the rest of the stroke.

(b) Swim as in (a) above without support. Take advantage of the “glide” by holding the extended position a brief moment.

**NOTE.**—In the back stroke, the propelling action is a combined action of the arms and legs together. Do not tilt the head backwards since this allows water to run into the nose. Hold the back straight throughout. The turning of the palms outward on moving the arms to the side horizontal gives support by pressing downward on the water without hindering the progress of the body materially.

■ 58. BREAST STROKE.—*a. Description.*—The breast stroke consists roughly of, first, a short pull of the arms, the legs remaining extended motionless; second, a doubling up as the arms are folded in and the legs bent in preparation for a kick; and third, a full extension of the entire body and arms, as the leg drive is made.

*b. Propulsion.*—About two-thirds of the propelling power in this stroke comes from the leg drive, commonly called the "frog kick." The arms are used more for support, the pull being less than half of a full sweep. Should the arm pull be extended past the shoulder line, the head is driven under water and breathing becomes extremely difficult.

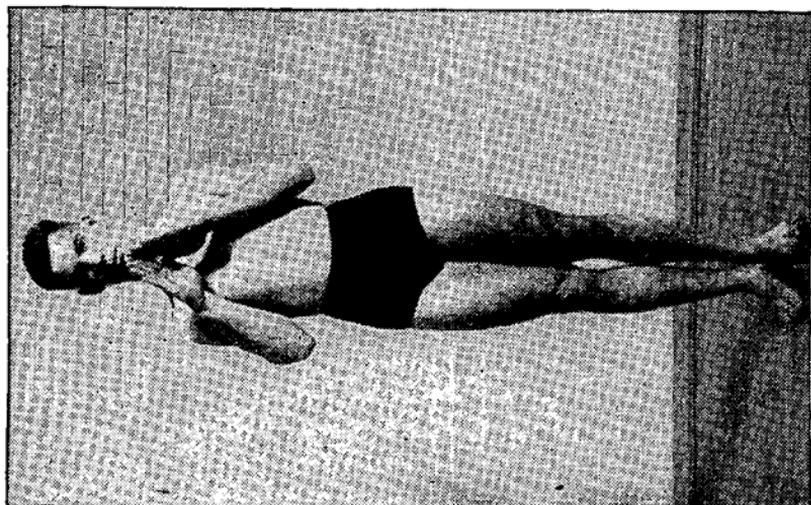
*c. Breathing.*—The breath is taken quickly through the mouth as the arms start to pull, the head being tilted backward at the same time. The exhalation begins immediately after the breath is taken and the air is forced out as described in the breathing exercises. During exhalation the head may be dropped to a natural position, but beginners will generally breathe more easily if the chin is held forward during the entire stroke.

*d. Land drill.*—(1) *Starting position* (fig. 67).—Stand erect with arms extended in front at shoulder height, palms downward, thumbs touching.

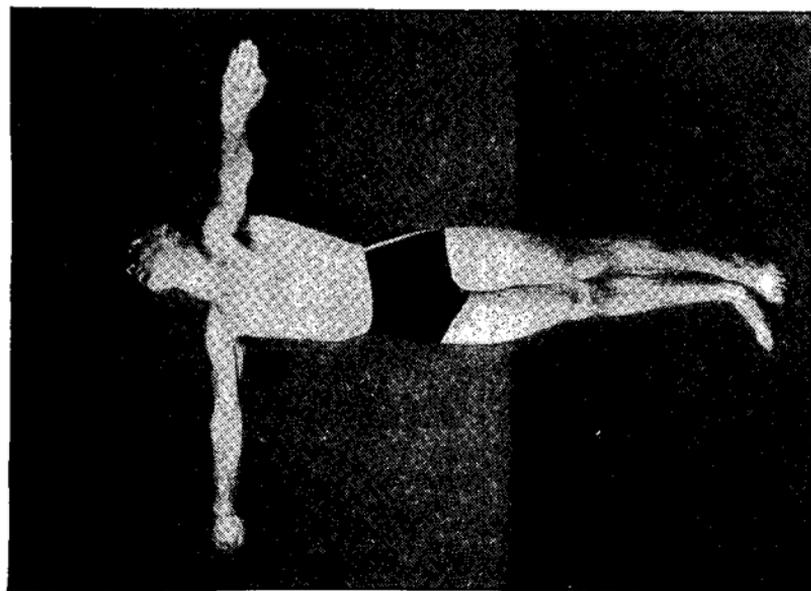


FIGURE 67.—Starting position, breast stroke.

(2) *Arms* (fig. 68).—(a) At ONE, turn the palms outward and sweep the arms backward to a position slightly short of



② Breast stroke, arms at two.

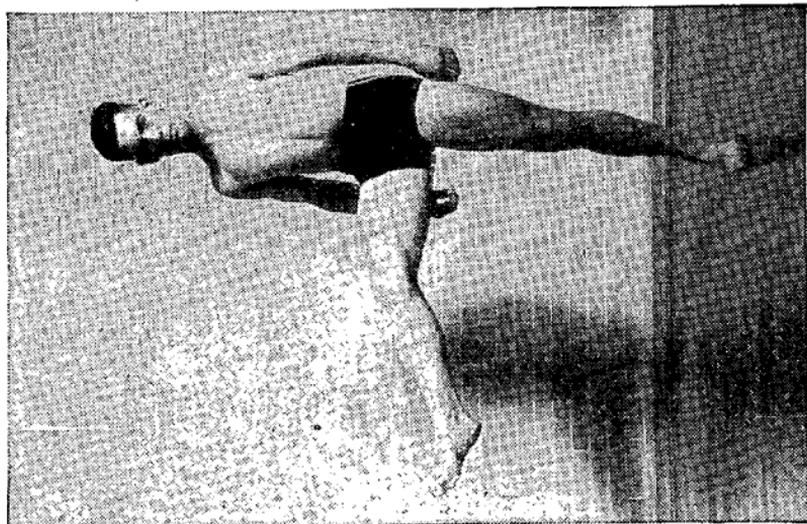


① Arms, breast stroke.

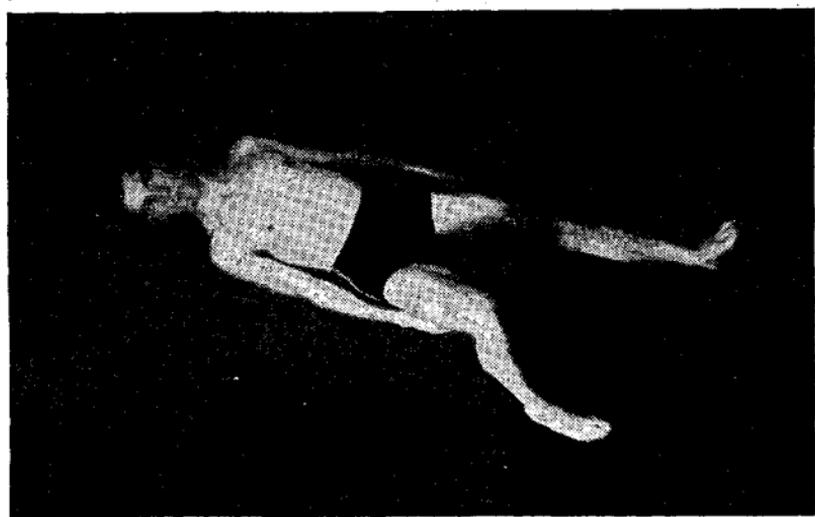
FIGURE 68.

the side horizontal, at the same time tilting the head backward (fig. 68①). Breath is inhaled here.

(b) At two, roll the palms downward, press the palms and forearms downward and inward, and bring the elbows close to the sides with hands in front of the chest (fig. 68①). These motions are continuous.



② Breast stroke, right leg extended on three.  
FIGURE 69.



① Legs, breast strokes.

(c) At THREE, extend the arms to the starting position.

(3) Legs.—(a) At ONE, the legs remain in the starting position.

(b) At **two**, raise the right knee slightly to the right oblique, at the same time raising the heel to the rear (fig. 69①).

(c) At **THREE**, reach out sideways with the foot, straightening the leg, and sweep the right leg back to the starting position (fig. 69②).

(d) Repeat the same movements, alternating with the left leg.

**NOTE.**—The arm and leg movements are done in a continuous manner with no pausing at the various counts.

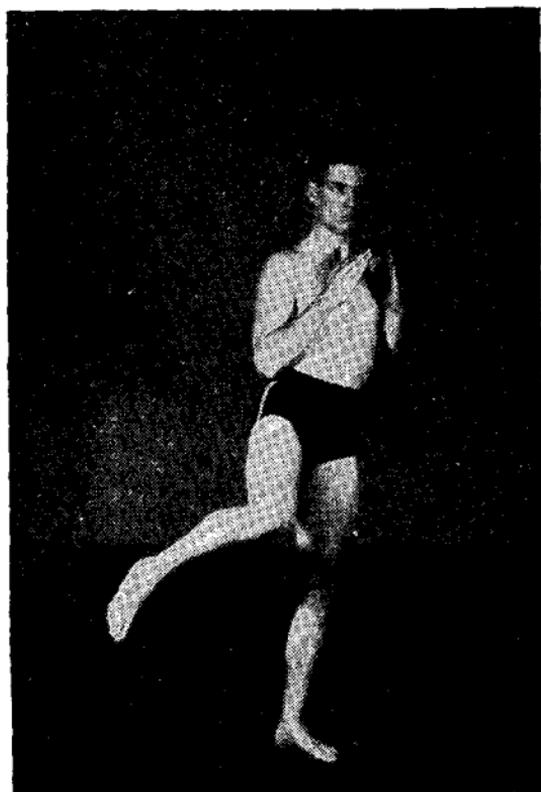


FIGURE 70.

(4) *Arms and legs.*—Combine the arm movements with the leg movements using first the right leg and then the left. (See fig. 70 for the position of arms and right leg at two.)

(5) *Breathing.*—Inhale on the count of **ONE**, as the head tilts back. Exhale during the remainder of the stroke.

*e. Water drill.*—(1) *Arms.*—(a) Stand in shallow water, bending the knees until shoulders are at water level. Extend the arms forward, hands about 3 inches under the surface.

(b) Practice the arm movements as in the land drill with particular emphasis on keeping a “grip” on the water. Try different speeds of movements to get the “feel” of this.

(c) Repeat the arm movements while walking along the bottom.

(2) *Legs.*—Practice the movements of both legs together in the same manner as described in land drill for each leg singly. Do not draw the knees up under the stomach, but outward, raising the heels high. Sweep the legs together in one continuous motion.

(3) *Arms and legs.*—(a) Using a support (a partner, rubber tube, etc.), practice the entire stroke.

(b) Without support, swim with the legs only, keeping the arms extended forward.

(c) Without support, swim the entire stroke.

(4) *Breathing.*—Inhale as the arms sweep to the side horizontal and the head is raised. The head is then lowered and the breath exhaled during the remainder of the stroke. Beginners may keep the head out of the water during the entire stroke if this helps them to master the stroke more readily.

■ 59. CRAWL STROKE.—*a. General.*—The majority of persons who think they swim the crawl stroke actually do not; instead they swim a trudgeon, or a cross between a trudgeon and crawl. For speed swimming no stroke equals the crawl, but for general effectiveness, especially from a military viewpoint, the trudgeon is superior. Condensed instruction in the crawl stroke is included in this manual for those soldiers proficient enough in swimming to master it.

*b. Land drill.*—(1) *Starting position.*—Stand with the right foot slightly to the right oblique, the upper body bent forward about 90°, the chin forward, the eyes to the front, the left arm fully extended forward, palm down, the right arm fully extended to the rear, palm up.

(2) *Arms.*—(a) At ONE, bring the right arm forward with a loose “flip” motion, a bent elbow leading and the hand dragging. As the elbow reaches a position slightly forward of the shoulder, straighten the arm and extend it fully forward; at

the same time turn the head quickly to the left and inhale in a gasping manner through the mouth only; then immediately turn the head back to the original position. (Exhalation starts at once and continues throughout the rest of the stroke.)

(b) At the same instant that the right arm starts forward, sweep the left arm backward, palm downward and elbow straight or nearly straight, until it reaches the fullest extension to the rear (the palm will then be upward).

(c) At two, reverse the arm motions, with no change in the position of the head, so that the arms return to the starting positions, thus completing a one-stroke cycle. In this reversal, the left arm performs the mechanics described above for the right arm and vice versa.

(d) Since land drill should approximate actual water conditions, and since the "drag" on the pulling arm in the water is considerable, the arm that is brought forward should reach the forward extension somewhat before the pulling arm reaches the rear extension. The forward arm is held momentarily in this extended position, thus creating the "glide" which is so essential for good speed when in the water. In other words, the arms do not simply interchange positions in a "wind mill" action, but rather the "recovery" is much more rapid than the "pull."

(3) *Legs.*—(a) Lie prone on the ground; place the hands under the thighs, palms up, chin forward, legs straight, and feet normal.

(b) Move the legs up and down alternately, keeping them close together and keeping the knees loose so that they bend and straighten *in a swinging movement originating in the thighs and not in the knees.* The ankles are kept loose and each foot is rotated inward on the up-swing. The vertical spread of legs measured at the ankles should be from 10 to 14 inches. The rapidity of movement should be about six beats to 1½ seconds. (Sprinting speed would be six beats to 1 second).

NOTE.—Most beginners have a mental picture of a crawl kick of exaggerated speed and in trying to execute this, they kick only from the knees. They should be cautioned not to do this, but instead to drive from the thighs, being sure that the knees move up and down while kicking.

(4) *Arms and legs.*—It is difficult to combine the arm and leg action of the crawl stroke in land drill. Whenever this is attempted, the results are so unsatisfactory that no attempt is made here to describe any method.

*c. Water drill.*—(1) *First step.*—Stand in water about waist deep. Bend forward and walk through the water while practicing the arm stroke as described for land drill, holding the face just above the water. Repeat this same exercise, holding the head so that the face is just under the surface except during inhalation. Inhale and exhale as described for land drill.

(2) *Second step.*—Push off into a prone floating position, arms extended forward, the chin forward, back slightly arched, and practice the leg kick as described for land drill. The breath must be held in this exercise so do not exceed 20 seconds at one time. Repeat until able to move forward easily. Then repeat this exercise, adding the arm stroke and breathing after a few leg kicks. At first make only two or three arm stroke cycles, then stop and start over. Continue until able to swim the complete stroke in good form, that is, with the body flat on the water, with no roll from side to side (only the head turns on inhalation), and with the legs beating rhythmically. Generally, the leg kick will readily fall into a definite rhythm which is usually three beats to each arm stroke, or six beats to the complete arm stroke cycle.

■ 60. NOTES FOR INSTRUCTORS.—*a.* The purpose of this manual will not allow a complete or thorough discussion of all the various strokes or of the methods of instructing beginners. For more detailed instruction of beginners or instruction in strokes not included in this manual, any one of the many excellent texts available on swimming should be consulted.

*b.* The instructor must guard against the men becoming over-exposed or cold. The air and water should be warm. At first, the time spent in the water should be about 15 minutes: This time may be lengthened gradually to from 30 to 45 minutes. Uncontrollable shivering and blue lips are signs of over-exposure. Even in warm water, it is necessary to have the men jump up and down or indulge in other warming-up

exercises occasionally. Water will cool the body off many times faster than air at the same temperature.

c. Never allow the men to enter the water when overheated or for an hour or more after eating.

d. Caution the men to dry thoroughly and put on warm clothing when leaving the water.

e. Teach the men to "keep their heads," in case of a cramp. If seized by a cramp in the leg, one should kick more vigorously; if it still persists, float and "rub out the cramp" with the hands. In case of a cramp in the arm, float and rub it out with the other arm.

## SECTION II

### LIFESAVING AND WATER SAFETY

■ 61. GENERAL.—*a.* In addition to knowing how to swim, every soldier should have a fair working knowledge of lifesaving and water safety. This section contains the fundamentals of these subjects. A thorough knowledge of the instructions contained in this section, coupled with the ability to execute the approaches, carries, releases and resuscitation, as described, will permit the soldier to meet any emergency with confidence.

*b.* The lifesaving motto, "1. Throw, 2. Row, 3. Go," should be the first thing taught a soldier. This motto means that a man should enter the water for a rescue only after he has exhausted all other possibility. It should be repeated over and over again until it is firmly fixed in the soldier's mind. Frequently the would-be rescuer goes to the aid of a victim at once when other aids, such as ring buoys, heaving lines, poles, boats, etc., are readily available. All too often this error results in the drowning of both victim and rescuer.

*c.* Although instruction in lifesaving and water safety should be given to all soldiers, only fairly strong swimmers can be expected to master the carries, release methods, and other phases of the water work. Even fairly strong swimmers will frequently require special instruction in certain fundamentals, the mastery of which is prerequisite to lifesaving work. These fundamentals include the following:

- (1) A strong scissors kick and a strong frog kick.

- (2) The ability to breathe easily even in rough water.
- (3) The ability to surface dive to a depth of at least 8 feet.
- (4) The ability to swim under water with eyes open for 40 or 50 feet.
- (5) The ability to tread water.

■ 62. INSTRUCTIONS IN PREREQUISITE FUNDAMENTALS.—*a.* For instruction in the scissors kick, see paragraph 55.

*b.* For instruction in the frog kick, see paragraph 58.

*c.* For instruction in the proper method of breathing, see paragraph 53.

*d.* The surface dive is best made while swimming with the breast stroke. It is made as follows:

(1) As the arms reach the side horizontal position, sweep them forcibly downward and forward in a scooping action; at the same time lift the buttocks high out of the water and force the head down. These actions place the body in a jackknife position with the head down in the water.

(2) Immediately, extend the legs upward forcibly; at the same time, extend the arms downward, held together in front of the head. The face should always be directed down and forward. This drive should send the diver down to a depth of 8 feet or more before he has to pull with his arms or swim downward.

*e.* Swimming under water is best accomplished by using a modified breast stroke. The palms of hands are turned outward more than usual at the beginning of the stroke. During the remainder of the stroke the palms are not pressed downward. The body is kept under the water by pulling the arms so as to keep the body down, while at the same time moving forward.

*f.* Treading water is easily accomplished by the use of the scissors kick or the frog kick while the body is in a vertical position. The arms should not be used because they will be needed for other purposes when rescuing a victim.

■ 63. APPROACHES.—*a. Rear approach.*—The safest approach to a drowning person is from the rear. Swim to a point directly behind and close to him; quickly reverse your position in the water by drawing the knees up under the body and extending the legs forward beneath the victim. Lean

backward and seize the chin of the victim by shooting your hand forward quickly over his shoulder and close to his neck (figs. 71 and 72). The chin is cupped firmly in the palm of the hand, care being taken that no pressure is applied to



FIGURE 71.—Rear approach (surface view).

the throat. Use the shoulder of the victim for leverage by resting your forearm upon it; draw his head up and hold it securely against your upper arm and shoulder, at the same time raising his body up toward the horizontal by applying an upward pressure against his back with the elbow

of your contact arm. At the same time, stroke vigorously with a scissors kick and your free arm. When the victim's body is moving along smoothly, shift him into a carry (par.



FIGURE 72.—Rear approach (underwater view).

64) without losing contact with him in making the shift. (This method of approaching and getting under way is known as the "chin pull.")

*b. Front surface approach.*—When it is impossible to approach from the rear, the rescuer may make a surface

approach from the front. Swim toward the victim, facing him; reverse your position as previously described; reach in with your right hand and grasp his right wrist, or with your

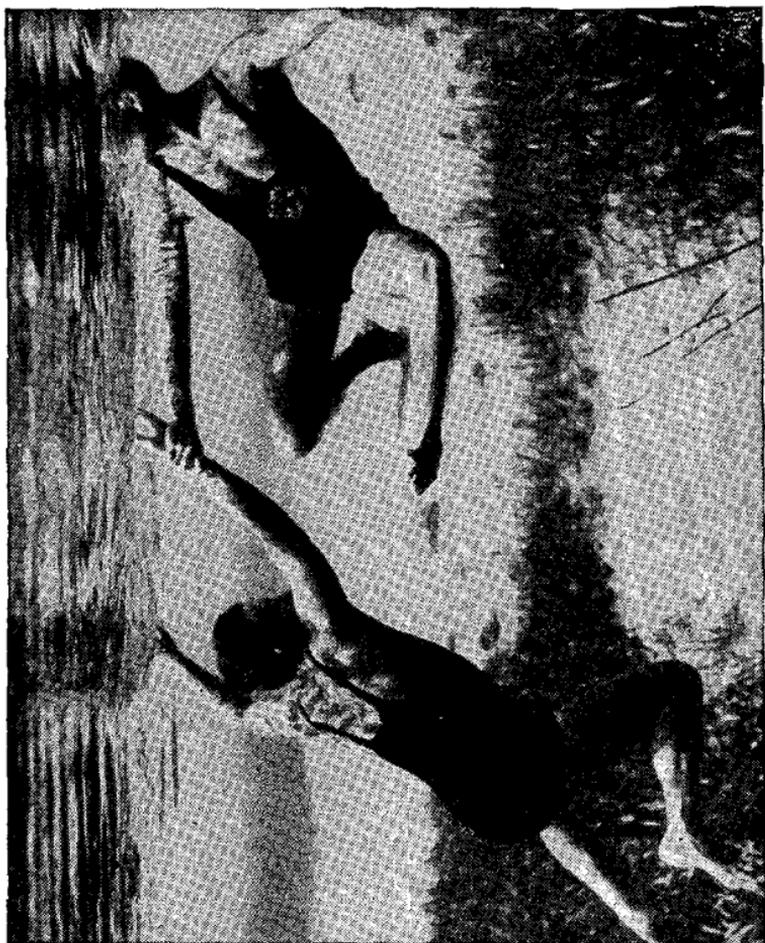


FIGURE 73.—Front approach.

left hand grasp his left wrist (fig. 73). Pull the victim toward you and at the same time swim forcibly away. This will quickly spin him around until his back is toward you; then proceed as explained above for a rear approach.

■ 64. CARRIES.—An effective carry must permit the victim's face to be carried above the surface at all times; it must keep the victim at or near the horizontal position constantly; it must enable the rescuer to control the victim; it must allow



FIGURE 74.—Cross-chest carry.

the rescuer the greatest freedom of swimming movements consistent with his position of close bodily contact; and it must, above all, permit the rescuer to assume a safe position in relation to the victim. The carries described below meet these requirements. Carries are preceded by a proper

approach, reversal of position, and getting the victim under way as described above under approaches.

*a. Cross-chest carry.*—(1) From the "chin pull," reach over the victim's shoulder and across his chest with your free arm and grasp his side just below the armpit (figs. 74



FIGURE 75.—Cross-chest carry seen from below.

and 75). Hold him so that your hip is directly under the small of his back, and the junction of his shoulder and head is tight under your armpit. Swim on your side using the scissors kick (preferably the inverted scissors) and the side arm pull. The side arm pull is executed by pulling the arm

outward in a shallow sweep rather than deep in the water. The strokes should be short and rapid. In the "inverted scissors" the under leg reaches forward and the top leg backward. This kick prevents striking the victim's body with the top leg.



FIGURE 76.—Hair carry.

(2) The cross-chest carry should be mastered by all members of a lifesaving class because it is by far the most secure.

*b. Hair carry* (fig. 76).—From the "chin pull", place your free hand on the crown of the victim's head, fingers toward

his forehead and grasp a handful of hair. Depress the wrist, straighten the arm, turn on your side and tow the victim, using the side arm pull and scissors kick.

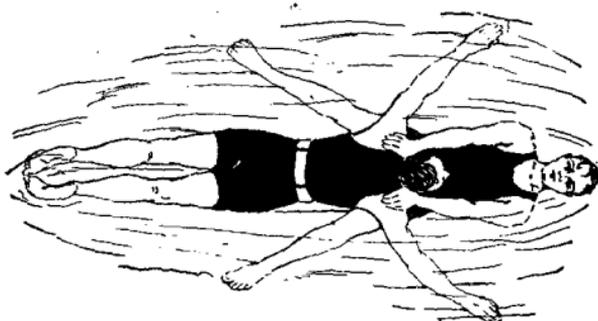


FIGURE 77.

*c. Tired swimmer's carry.*—(1) In this carry simply swim to the victim and tell him to lie on his back and place his hands on your shoulders, with his arms straight and his legs spread well apart (fig. 77). Swim the breast stroke, using the frog or scissors kick, pushing the victim ahead of you. Watch his face for signs of discomfort or panic.

(2) This carry is intended only for assisting a person who has become exhausted. It should never be attempted on a struggling person.

■ 65. RELEASE METHODS.—*a. General.*—If the drowning person is struggling violently so that it is impossible to subdue him or to grasp him with safety, it is well simply to wait for him to exhaust himself before attempting to make contact with him. Never strike the victim under any circumstance. Breaking holds by inflicting pain is impracticable. It may work in practice, but a desperate man fighting for his life will not be affected by such methods. Practice the proper approaches so that you will be able to use them in emergencies and thus avoid being caught in the hold of a drowning person. The following release methods are effective, and it is advisable to be familiar with them, but the use of the proper approaches will lessen the danger of being placed in such a position that the release methods become necessary. Each of the release methods is followed by the proper turn

and the "chin pull" to get the victim under way. In all releases, first take a quick "bite" of air and then submerge both yourself and the victim, effecting the release under water. This is done because a drowning person will release



FIGURE 78.—Front head hold, press-away.

a hold more readily when submerged, his constant desire being to climb to the surface to obtain air.

*b. Front head hold.*—In this hold you are grasped tightly around the neck from the front (fig. 78). To release the

hold, tuck in your chin, take a quick "bite" of air, and submerge yourself and victim. Place your hands against his hips and push steadily and forcibly, straightening the arms; at the same time pull your head down (fig. 79). You can



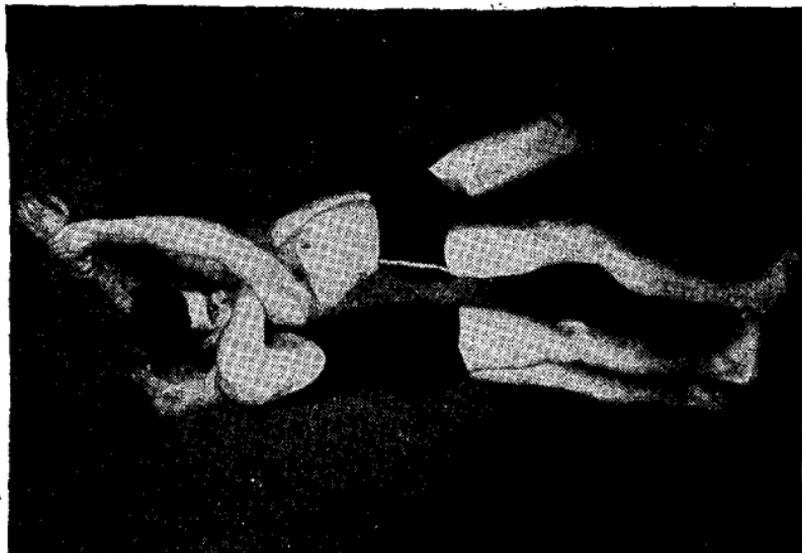
FIGURE 79.—Front head hold, the release.

readily free yourself from the strongest victim in a few seconds. Keep contact with the victim, and as soon as you

are free turn his body with your hands (fig. 80) so that his back is toward you; rise to the surface, effect the "chin pull" and follow this with the cross-chest carry. Do not lose contact with the victim at any time.



FIGURE 80.—Front head hold, the turn after release.



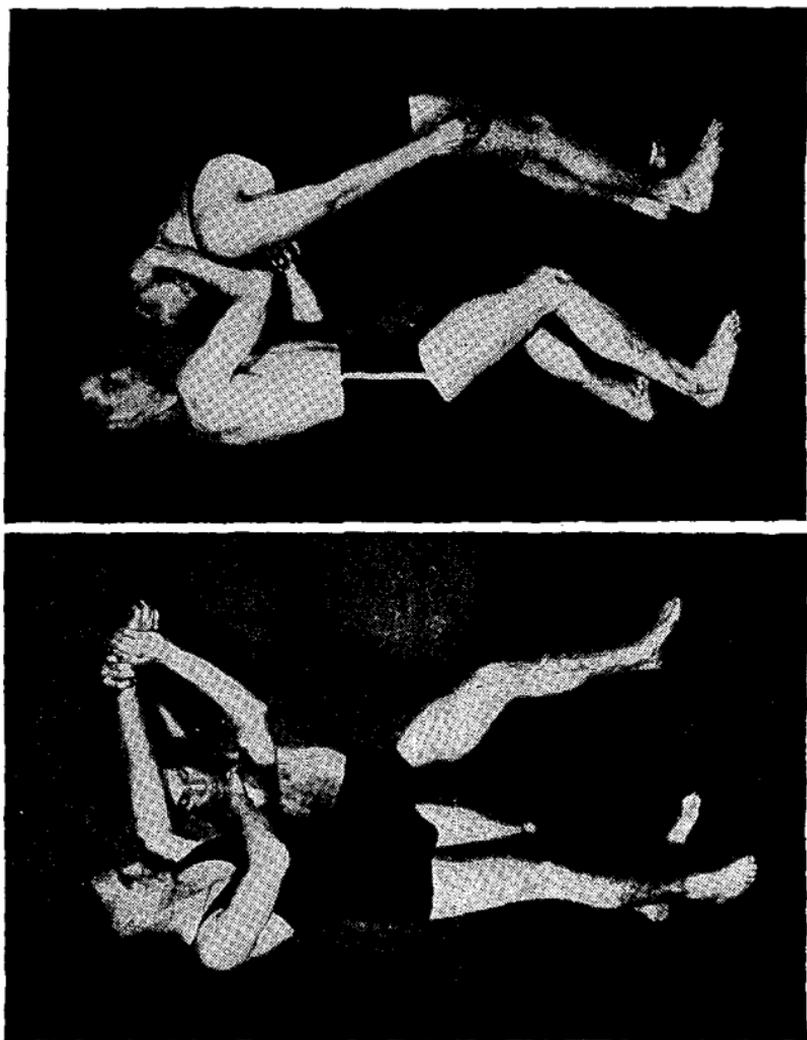
② Release, second step.



① Release, first step.  
FIGURE 81.—Rear head hold.

*c. Rear head hold.*—In this hold you are grasped tightly around the neck from the rear (fig. 81①). To release the hold, tuck in your chin, take a quick "bite" of air and submerge both yourself and the victim. Grasp either one of the victim's arms at the wrist with both of your hands. Pull his arm forcibly outward and lift it upward (fig. 81②). As you

lift his arm upward, twist it outward and duck under it by backing into it. In this way you will pull out of the hold of the other arm (fig. 81③). Without losing contact with the victim's arm, go into the "chin pull" (fig. 81④) and then convert this to the cross-chest carry.



③ Release, third step.  
 ④ The chin pull.  
 FIGURE 81.—Rear head hold.

**NOTE.**—If the victim is so powerful that you cannot duck under his arm when it is raised because of his other arm being around your neck, then release your grasp with the left hand if you are holding his left arm and the right hand if holding his right arm;

place the released hand on the elbow of his upward arm and push up on the victim's elbow and, at the same time, pull down on his wrist. Retain your grasp on the victim's arm; pull it down and twist it toward his back, backing out under the arm. This will turn his back toward you. Then proceed as described above. However, the former method is far simpler and should always work.



FIGURE 82.—Double-drowning release (in position).

*d. Double-drowning release.*—In this condition two people are clinging together, each with a front head hold. To release them, swim to a point directly behind one of them and place your hands on that one's chin. Raise one of your feet over their locked arms, placing your heel against the shoulder or chest of the farther victim (fig. 82). Straighten your leg,

pushing the farther victim down and away, and pull the near one up, thus separating the two (figs. 83 and 84). (When pushing the farther victim down, avoid a kicking action with



FIGURE 83.—Double-drowning release (leverage applied).

your leg.) Keep in contact with the subject you are now holding; go into a "chin pull" followed by a cross-chest carry. Having rescued the first victim, go after the other one in any manner previously described.



FIGURE 84.—Double-drowning release (victims separated).

■ 66. DROWNING AND RESUSCITATION.—*a. General.*—Being under water for over 5 minutes is usually fatal, but an effort to revive the apparently drowned should always be made. *It is very important that artificial respiration be started at the earliest possible moment after the patient has been removed from the water.*

*b. Procedure.*—(1) Lay the patient face down, force his mouth open, pull the tongue forward, and remove false teeth, juice, vomitus, or debris from his mouth and throat.

(2) Raise him by the hips in order to drain the water from his lungs.

(3) Lay him on his belly, preferably at a spot where his head will be lower than his feet. One of his arms should be extended over his head, the other bent at the elbow so that

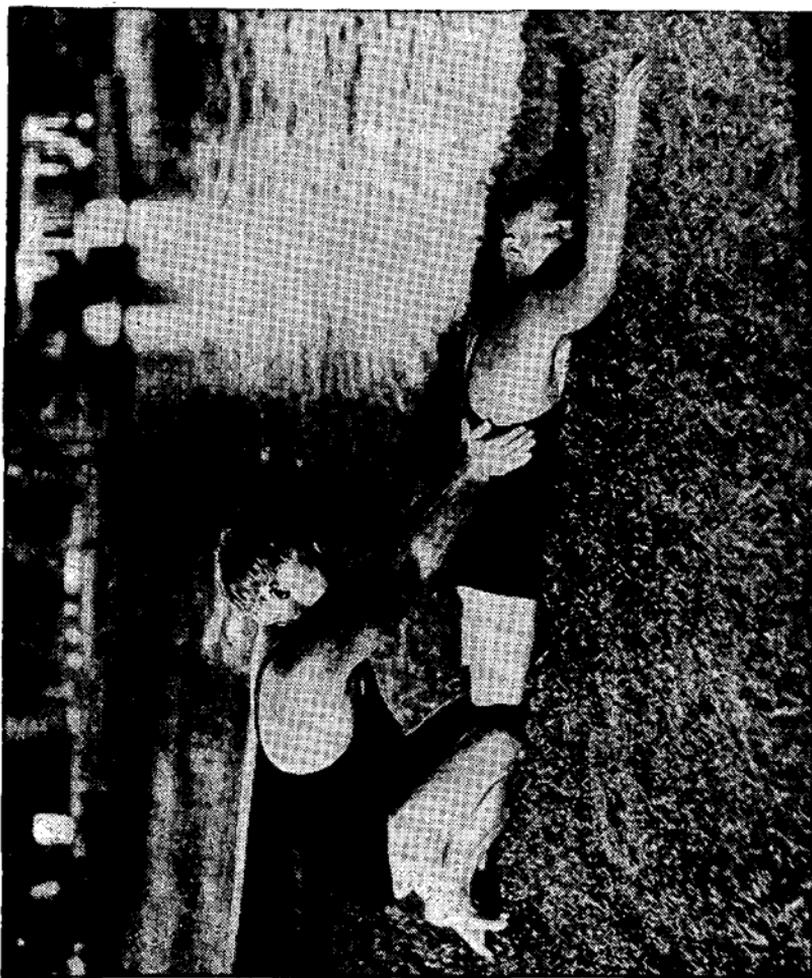


FIGURE 85.—Artificial respiration, first position, ready to apply pressure.

his face can be turned on the side and rest on the hands.

(4) Kneel astride the patient's thighs, with your knees placed at such a distance from his hips as will allow you to assume the position shown in figure 85. Place the palms of your hands on the small of his back with your fingers on his

lower ribs, your little fingers just touching his lowest rib, with your thumbs and fingers in natural position and the tips of your fingers out of sight just around the sides of his chest wall. The heels of the hands should be placed as far from the backbone as possible without slipping off.

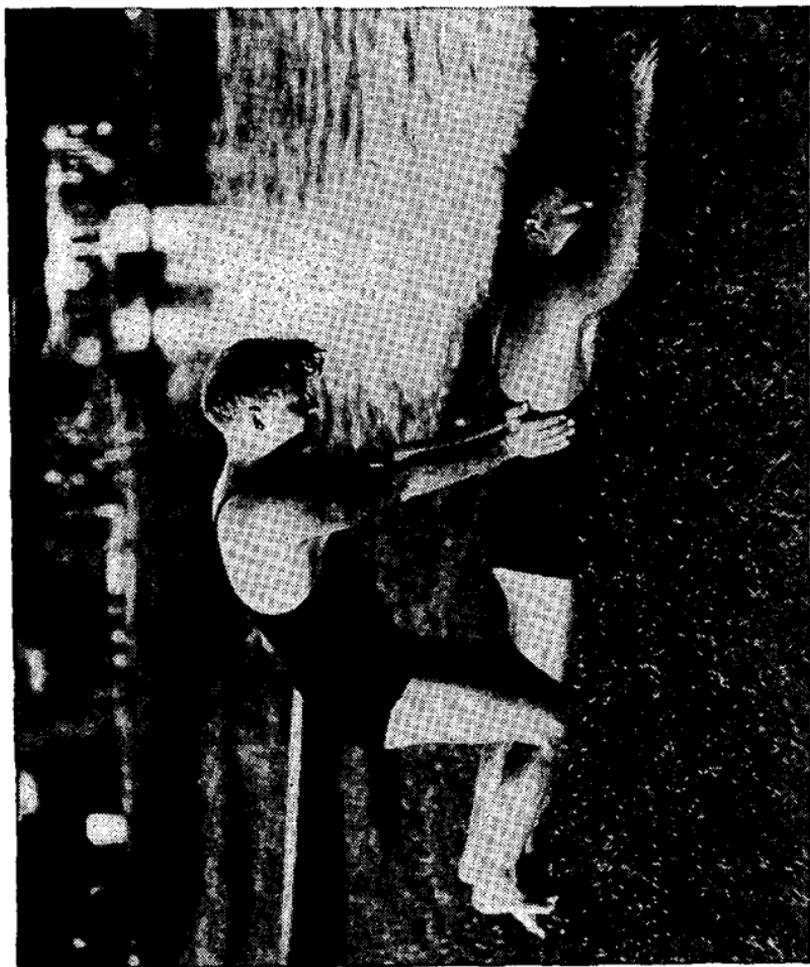


FIGURE 86.—Artificial respiration, second position, pressure applied.

(5) With your arms held straight, swing forward slowly so that the weight of your body is gradually brought to bear upon the patient (fig. 86). Do not bend your elbows. This operation should take about 2 seconds.

(6) Now immediately swing backward so as to remove all pressure completely and suddenly (fig. 87).

(7) After about 2 seconds, repeat the operation. The cycle of compression and release should take about 4 or 5 seconds

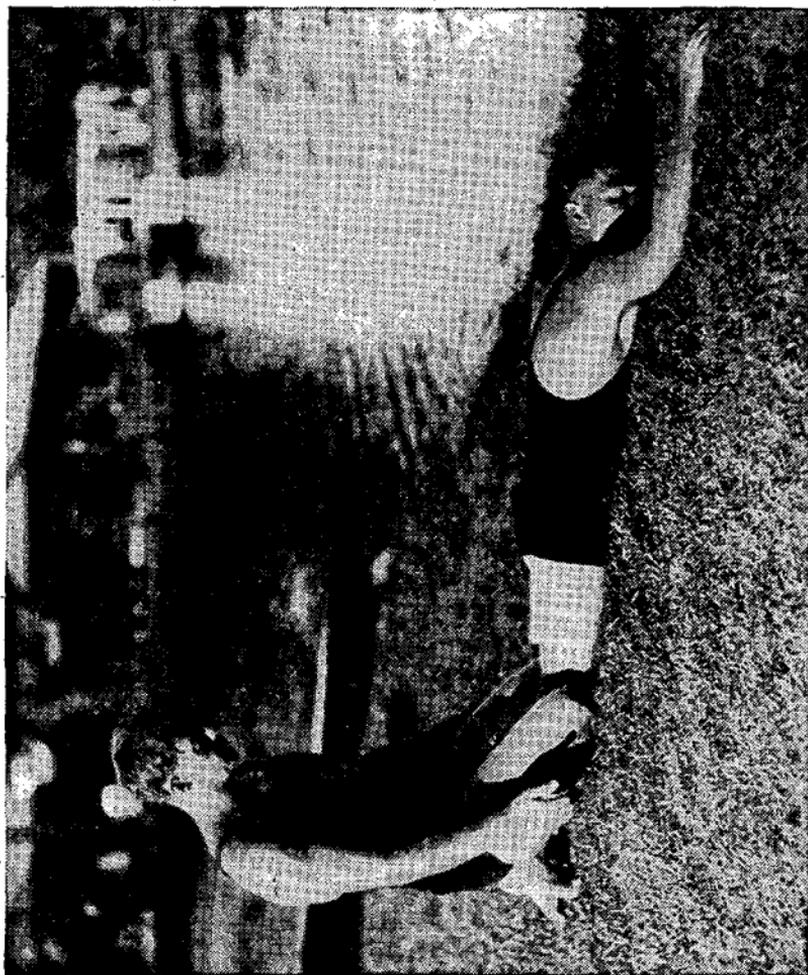


FIGURE 87.—Artificial respiration, third position, pressure released.

and should be repeated at the rate of 12 to 15 times per minute.

(8) Continue the operation without interruption until natural breathing is restored, or until the subject is unquestionably dead. Remember, many patients have died because

artificial respiration has been stopped too soon. Always continue the operation for 2 hours or longer.

(9) Aside from the resuscitation, the most valuable aid that can be rendered is keeping the patient warm. After artificial respiration has been started, have an assistant loosen the clothing and wrap the patient in any clothing that is available. Use hot bricks, pads, heaters, or similar means, but be sure the person is not burned by your treatment.

(10) When the patient revives, he should be kept lying down and not allowed to stand or sit up; this will prevent undue strain on the heart. Stimulants such as hot tea or coffee, or aromatic spirits of ammonia, may be given as soon as the patient is perfectly conscious.

(11) At times a patient, after temporary recovery of respiration, stops breathing again; artificial respiration should be resumed *at once*.

(12) Due to the length of time this operation may be kept up, one, two, or more operators may be necessary. A change of operators can be made without loss of rhythm of respiration. If this point is remembered, no confusion will result when the change occurs and the respiratory count will be kept even. The great danger is stopping artificial respiration too soon. In many cases, breathing has been established after 3 or 4 hours of artificial respiration, and there are many instances where normal breathing has been reestablished after 8 hours. The ordinary and general tests for death should not be accepted; a medical officer should make several careful examinations at various intervals before the procedure is allowed to be stopped.

## CHAPTER 6

### ADVICE TO INSTRUCTORS

■ 67. **PURPOSE.**—The purpose of this chapter is to set forth suggestions and helpful hints which may assist the physical training instructor in the execution of his duties.

■ 68. **CORRECTIVE EXERCISES.**—*a.* To insure success, instructors must endeavor to enlist the cooperation of the men they are treating, for without it little will be accomplished in aggravated cases.

*b.* Minor physical defects can be readily overcome by the ordinary physical drills if such drills are harmonious; that is, if all corresponding parts of the body are employed equally. This is based upon the theory that if an equal amount of exertion is required of all parts of the body, the weaker ones will increase in strength much more rapidly than the stronger ones, thus constantly diminishing the difference between the two until the difference ceases to be marked or material. This is particularly true in the training of younger persons. When defects are of long standing, due to faulty posture, occupation, or the result of previous illness, special instruction may be necessary, but this must not interfere with the man's participation in the regular physical drills unless it is found that he is unable to participate in them. Such cases should be treated separately by concentrating on those exercises which will overcome the weakness or defect noted. The setting-up exercises in this manual are arranged in groups according to the parts of the body involved; therefore the instructor should have no difficulty in selecting exercises which will correct any particular weakness or defect.

■ 69. **HINTS TO INSTRUCTORS.**—*a. General.*—(1) Avoid all loud shouting and noisy, impatient, discouraging, and bullying methods. A quiet, encouraging manner, free from hesitation and indecision, is productive of the best results.

(2) All men are not alike, but have different characters, temperaments and capabilities; handle them accordingly.

(3) Men should never be kept too long in one position, especially a constrained one. An exercise should never be performed so many times that it becomes wearisome, and the strength and endurance of the men should never be pushed to extreme limits. Great care must be exercised in this respect and no exercise should ever be performed a greater number of times than can be accomplished without loss of style and position, or the otherwise good effects of the exercise will be destroyed.

(4) The instructor should perform all exercises himself, while preparing his daily lesson, in order to determine how many times he can reasonably expect his men to repeat the exercises.

(5) Keeping in view the important principles of gradual and easy progression, the instructor must note that there should not only be progression in the amount and strength of the actual muscular work, but that there should also be progression in accuracy and precision of execution, and in activity and quickness of movement. Do not expect a finished performance during the first time an exercise is executed.

(6) If required, the instructor should have a list of the work to be performed on a card for reference. The card should not, however, be consulted more than is necessary, and then only when the men are at ease, *never* when they are at *attention* or performing an exercise.

*b. Explanation and illustration of exercises.*—(1) In giving explanations, a conversational tone should be adopted, and not a monotonous intonation, as if repeating a lesson.

(2) In demonstrating and executing exercises which are performed successively to the right and left, *the instructor should move in the direction opposite that required of the class.* For example, the instructor, facing the class, bends his trunk to the right when the class is required to bend to the left. Likewise the instructor moves his right arm or right leg in exercises where the class moves the left arms or legs and vice versa.

(3) Avoid long explanations. As a rule, it should be necessary to give a full explanation only of a *new* exercise, or of the *new portion* of an exercise, and the explanation should

then be given, and the exercise illustrated immediately before it is performed. The men should be given AT EASE during such explanation and demonstration.

(4) The most essential features of an exercise should be explained first, and later on, the details may be added. Reference to too many details at one time is more likely to confuse the men than to assist them.

*c. Correcting faults.*—(1) All minor corrections should be made at the time by mentioning the correction shortly to the whole class, for example, "heads up," "knees straight," "stretch arms fully," etc. following this occasionally, if necessary, by mentioning the name of the man who is particularly at fault.

(2) If a man requires special correction involving considerable attention, he should be taken separately so as not to waste the time of the others.

*d. Conducting group games.*—The following suggestions are given to aid the instructor in conducting group games:

(1) He should never attempt to conduct a game with which he is not entirely familiar.

(2) He should be sure that any equipment needed is on hand and available for immediate use.

(3) In starting a new game, be clear; talk little; demonstrate.

(4) Insist on fair play—enforce the rules.

(5) Develop the spirit of competition.

(6) Put "pep" into the games; make them snappy; keep them going.

(7) No man should be allowed to drop out without permission.

(8) To get the best results, there must be discipline and good order.

(9) Do not let a game drag out. Stop it while the men still want more.

(10) With a reasonable injection of enthusiasm, any game can be conducted successfully.

(11) Do not hesitate to use new games or variations of old ones.

■ 70. METHOD FOR CONDUCTING TESTS.—Conducting tests of physical ability for small groups requires very little equipment of planning; however, when tests are to be conducted on a large scale, considerable thought and planning are essential in order to administer the tests effectively. Experience has shown the method described below to be an efficient one.

*a. Dash, 100-yard.*—(1) Aline all contestants in columns of files 6 feet apart on any level field. Put not more than 20 men in each column. As many columns may be used as the ground and number of judges permit.

(2) Run all the first men in each column of files in the first heat, the second men in the columns in the second heat, continuing rapidly until all contestants have run.

(3) Have a judge for each lane or column who acts as scorer.

(4) Use but one stop watch. The start of the race is signaled by a revolver shot. The completion of  $12\frac{1}{5}$  seconds is marked by a second revolver shot. Each judge determines the position of the contestant in his lane when the shot signaling the completion of  $12\frac{1}{5}$  seconds is fired. According to the number of lanes and columns, the judge for each column takes position where he can best determine the location of the men in his lane at the second revolver shot. Lines should be drawn across the track as shown in the table below. This table also shows the time or rating of each man according to his position in his lane at the completion of  $12\frac{1}{5}$  seconds.

Distance (yards)		Time (seconds)	Score
100	Men on or beyond this line at end of $12\frac{1}{5}$ seconds.	$12\frac{1}{5}$	Superior.
97	do	$12\frac{3}{5}$	Above average.
94	do	13	Average.
91	do	$13\frac{2}{5}$	Qualified.
88	do	$13\frac{4}{5}$	Do.
85	do	$14\frac{1}{5}$	Unqualified.
82	do	$14\frac{3}{5}$	Do.

*b. Running high jump.*—(1) Keep the same assignment of judges and groups as for the 100-yard dash.

(2) Arrange each column in one lane with six high jump standards set as follows:

Jump	Height		Score
	<i>Feet Inches</i>		
1st.....	3 3	} Men who cannot jump 3 feet 9 inches are classed as unqualified.	} Unqualified.
2d.....	3 6		
3d.....	3 9	Men who jump this height.....	Qualified.
4th.....	4 0	do.....	Average.
5th.....	4 3	do.....	Above average.
6th.....	4 6	do.....	Superior.

(3) Standards should be set far enough apart to allow contestants the required run before the "take-off." Have each column run through its respective lane, trying each height. The best jump made counts.

*c. Running broad jump.*—(1) Keep the same assignment of judges and groups as in previous events.

(2) Arrange for each column to jump rapidly in its own lane. Mark on the sides the four distances from the "take-off" which determine the classification of the individual; that is, 12, 13½, 15, and 16½ feet. This method obviates all necessity of measuring each individual jump. Three trials are allowed each contestant with the best jump only counting. Usual rules with reference to running broad jump govern as regards fouls.

*d. Run, 440- or 880-yard.*—Runs of this length may be conducted on either a circular track or a measured course. Large groups of men may be started at one time. One watch only is necessary. As soon as the first man crosses the finish line the timer should start calling off the time, by seconds, loud enough so that the contestants can hear their time.

■ 71. GENERAL SUGGESTIONS.—*a.* Have a chief scorer for the contests, with a chief scorer for each event, and one assistant for each event for each 60 men.

*b.* Have score sheets for each event made out for each column of files (group), with space for recording each man's record. Number each column.

*c.* Have assistant scorers collect immediately from the column of files scorers all sheets for an event, turning them in to the chief scorer.

*d.* Number conspicuously each column of files score sheet, keeping the same number for each event.

*e.* This method, or adaptations of it, may be used in conducting tests in almost all kinds of events.

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## CHAPTER 7

### CATALOG OF EXERCISES, PERSONAL CONTESTS, AND GROUP GAMES

■ 72. PURPOSE AND USE OF CHAPTER.—*a.* The purpose of this chapter is to serve as a “reservoir” or “library” in which is included ample material to serve the needs of the instructor in his planning of a physical training program.

*b.* The material in this chapter is presented in a concise, abbreviated form. Few commands, instructions, or similar matter will be found since those items have already been fully covered in the preceding chapters of this manual.

*c.* The various exercises and contests are described as accurately as possible, consistent with brevity, and, wherever necessary, photographs or sketches have been supplied. The instructor should study both the descriptions and plates carefully to insure that he understands fully each exercise or contest.

■ 73. DISCIPLINARY EXERCISES.—No disciplinary exercises are listed here since a sufficient number of them have already been presented in section II, chapter 2.

■ 74. SETTING-UP EXERCISES.—*a. Arm exercises.*—(1) Starting position: ARMS FORWARD. Swing arms downward on ONE; recover to the starting position on TWO. Cadence, optional.

(2) Starting position: ATTENTION. Stretch arms forward, palms down, on ONE; sideward on TWO; forward on THREE; recover to attention on FOUR. Drawl the first three counts and make the fourth count snappy. Cadence, slow.

(3) Starting position: HANDS ON SHOULDERS. Extend arms forward, palms down on ONE; swing arms sideward, palms up, on TWO; forward, palms down on THREE; recover the starting position on FOUR. Cadence, optional.

(4) Starting position: ARMS SIDEWARD. Rotate arms forward on ONE; backward on TWO. The position of the arms does not change; they merely twist, they do not circle. Em-

phasize keeping the arms well stretched throughout. Cadence, slow.

(5) Starting position: RIGHT ARM OVERHEAD. Swing right arm forward and downward and left arm forward and overhead on ONE; reverse on TWO. Cadence, optional.

(6) Starting position: HANDS ON SHOULDERS. Extend arms forward on ONE; recover on TWO; extend arms sideward, palm up, on THREE; recover on FOUR. Cadence, fast.



FIGURE 88.

(7) Starting position: ARMS OVERHEAD. Circle arms inward for four counts (fig. 88), then outward for four counts. The count should come as the arms cross at the bottom, but at each fourth count the arms continue to the overhead position and stop there. Cadence, moderately fast.

(8) Starting position: **HANDS ON SHOULDERS, FISTS CLENCHED.** Strike arms forward on ONE; recover on TWO; strike arms sideward on THREE; recover on FOUR; strike arms upward on FIVE; recover on SIX; strike arms downward on SEVEN; recover on EIGHT. The striking action should be done forcibly. Cadence, fast.

(9) Starting position: **ARMS FORWARD, FISTS CLENCHED.** Rotate fists outward for four counts; then inward for four counts. The rotation should be entirely at the wrists, stopping at the fourth count to reverse rotation. Cadence, moderate. (This exercise can also be done from starting position of arms sideward or overhead, or it can be performed by moving from one position to the other while maintaining the rotation of the fists.)

(10) Starting position: **ARMS FORWARD, FISTS CLENCHED.** Open and close the fists forcibly. Cadence, fast. (This exercise can also be done from the starting position of arms sideward or overhead; and can also be done by moving the arms from one starting position to the others while maintaining the opening and closing of the fists.)

*b. Leg exercises.*—(1) Starting position: **HANDS ON HIPS.** Rise on toes to fullest extent on ONE; lower on TWO. Cadence, optional.

(2) Starting position: **HANDS ON HIPS.** Lower to the deep knee bend position on ONE (fig. 89); recover on TWO. Cadence, slow. As the knees are bent, they are separated 45° and the body weight is supported on the toes.

(3) Starting position: **HANDS ON HIPS (OR ATTENTION).** Rise on toes of right foot on ONE; recover on TWO; rise on toes of left foot on THREE; recover on FOUR. As the body rises on either foot, the opposite foot rises slightly off the ground. Both knees are held stiff and heels close together. Cadence, optional.

(4) Starting position: **HANDS ON HIPS.** Rise on toes on ONE; fully bend knees on TWO (as in exercise (2) above); recover the first position on THREE; recover the starting position on FOUR. Cadence, optional.

(5) Starting position: **HANDS ON HIPS (OR ATTENTION).** Extend right leg fully to the rear, knee stiff on ONE; recover on

**TWO**; extend left leg fully to the rear on **THREE**; recover on **FOUR**. Body is held erect throughout. Cadence, slow.

(6) Starting position: **HANDS ON HIPS** (OR **ATTENTION OF ARMS TO THRUST**). Bend knees half way on **ONE**, keeping heels on floor; recover on **TWO**. Cadence, fast.

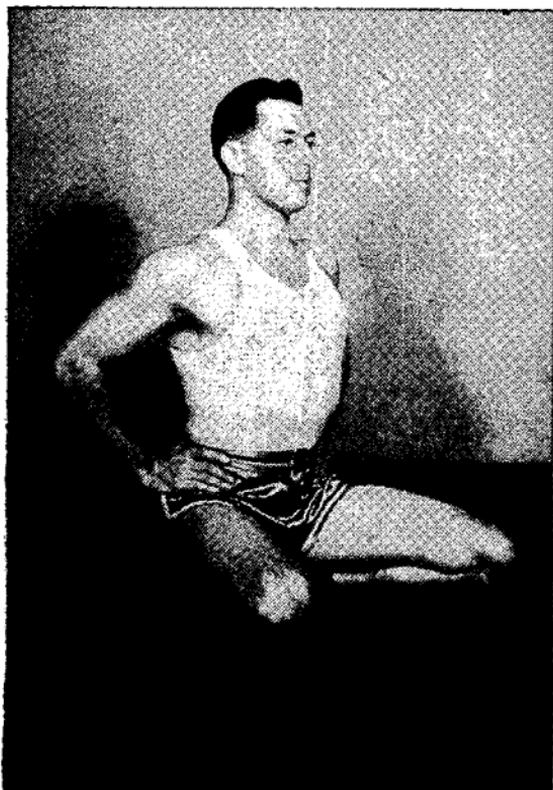


FIGURE 89.

(7) Starting position: **FINGERS ON REAR OF HEAD**, **TOES POINTING INWARD** (PIGEON TOES). Rise up fully on toes on **ONE**; lower on **TWO**. Cadence, optional.

(8) Starting position: **HANDS ON HIPS**. Hop alternately on right and left foot. Count four. While hopping, the unemployed leg is extended well forward, knee straight and toes depressed. The hop should be done four times on one foot, then four on the other. Cadence, moderately fast.

(9) Starting position: ARMS FORWARD (OR HANDS ON HIPS). Fully bend knees on ONE, keeping heels on floor, knees close together (fig. 90); recover on two. Cadence, slow. This exercise resembles the Filipino squat.

(10) Starting position: HANDS ON HIPS. Run "in place" on toes, raising knees up as high as possible and springing up

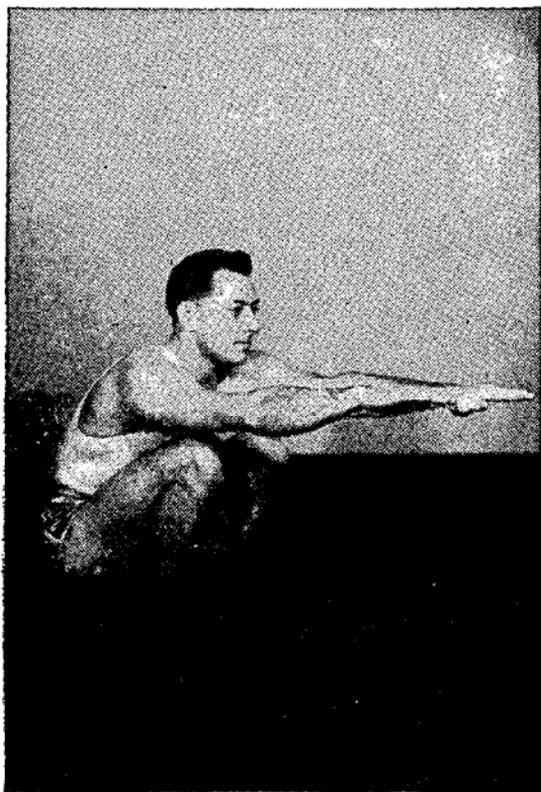


FIGURE 90.

from the floor on each count as high as possible. Count four. Cadence, moderate.

*c. Trunk exercises (turning).*—(1) Starting position: HANDS ON SHOULDERS. Turn trunk right on ONE; recover on two; turn left on THREE; recover on FOUR. The twist should be from the hips up, the lower body remaining motionless. Drawl the first and third counts, making the second and fourth snappy. Cadence, slow.

(2) Starting position: **ARMS SIDeward**. Turn trunk to the right on **ONE**; recover on **TWO**; turn trunk left on **THREE**; recover on **FOUR**. The arms remain in the plane of the shoulders throughout and the head and eyes are kept to the front. The trunk should twist from the hips up, the lower body remaining motionless. Cadence, slow.

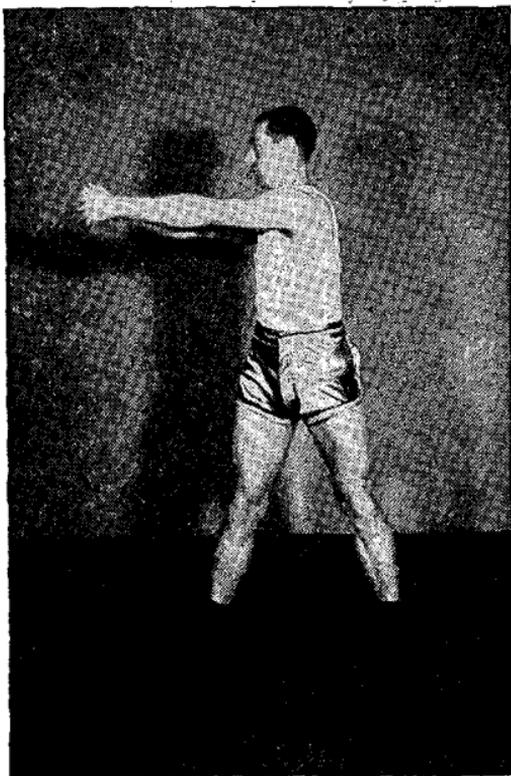


FIGURE 91.

(3) Starting position: **SIDE STRADDLE, ARMS FORWARD, FINGERS LACED**. Twist entire body as far as possible to the right on **ONE** (fig. 91); twist as far as possible to the left on **TWO**. The feet do not move. Count four, recovering to the front on the last count of the last sequence. Cadence, slow.

(4) Starting position: **ARMS OVERHEAD, FINGERS LACED**. Twist trunk to the right on **ONE**; recover on **TWO**. Twist left on **THREE**; recover on **FOUR**. The arms are kept stretched as high

as possible throughout. The twist should be from the hips up only. Drawl the first and third counts, making the second and fourth snappy. Cadence, slow.

(5) Starting position: **SIDE STRADDLE, ARMS SIDEWARD**. Twist entire body as far as possible to the right on ONE; twist as far as possible to the left on TWO. The feet do not move.

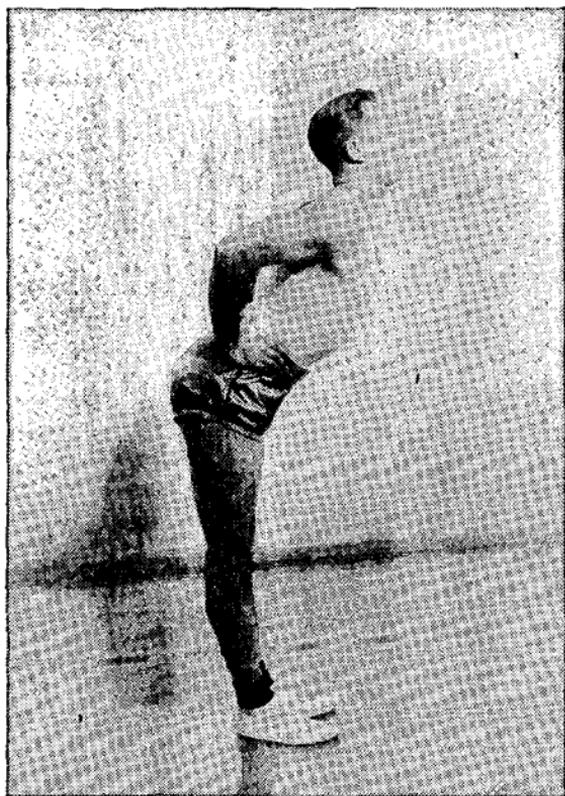


FIGURE 92.

Count four, recovering to the front on the last count of the last sequence. The arms are kept in the plane of the shoulders throughout. Cadence, fast.

*d. Trunk exercises (bending)* — (1) Starting position: **HANDS ON HIPS**. Bend trunk  $45^\circ$  forward, back arched, on ONE (fig. 92); recover on two. Cadence, slow.

(2) Starting position: **HANDS ON HIPS**. Bend trunk backward as far as possible on **ONE** (fig. 93); recover on **TWO**. The legs are kept straight throughout. Cadence, slow.

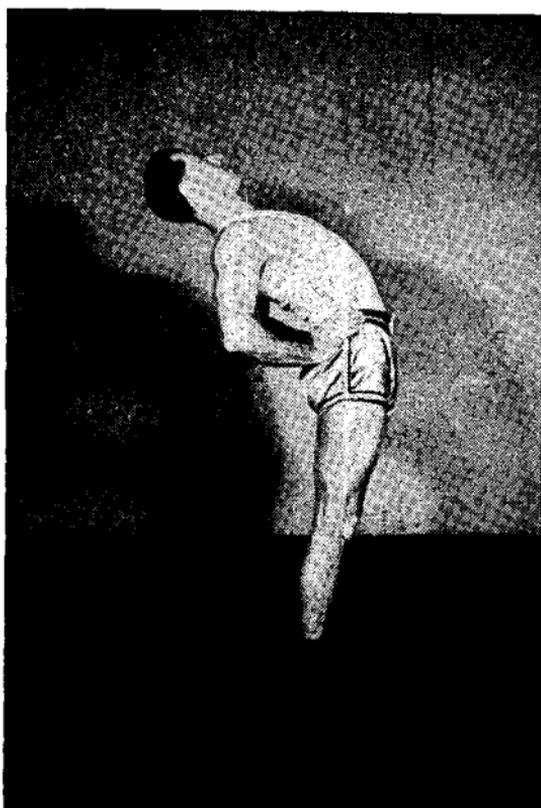


FIGURE 93.

(3) Starting position: **HANDS ON HIPS**. Bend trunk sideward right as far as possible on **ONE**; recover on **TWO**: Bend left on **THREE**; recover on **FOUR**. The legs are kept straight throughout. Cadence, slow.

(4) Starting position: ARMS FORWARD. Bend trunk 90° forward on ONE, moving the arms to the side horizontal (fig. 94); recover on two. Cadence, slow.

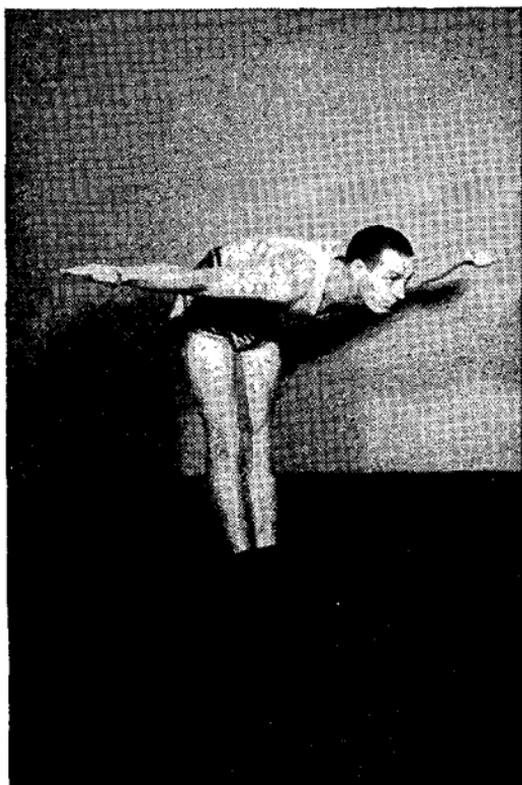


FIGURE 94.

(5) Starting position: **HANDS ON HIPS (OF ATTENTION)**. Bend trunk forward as far as possible on **ONE**, extending arms downward so that the hands come as close to the ground as possible (fig. 95); recover on two. The legs are kept straight throughout. Cadence, optional.

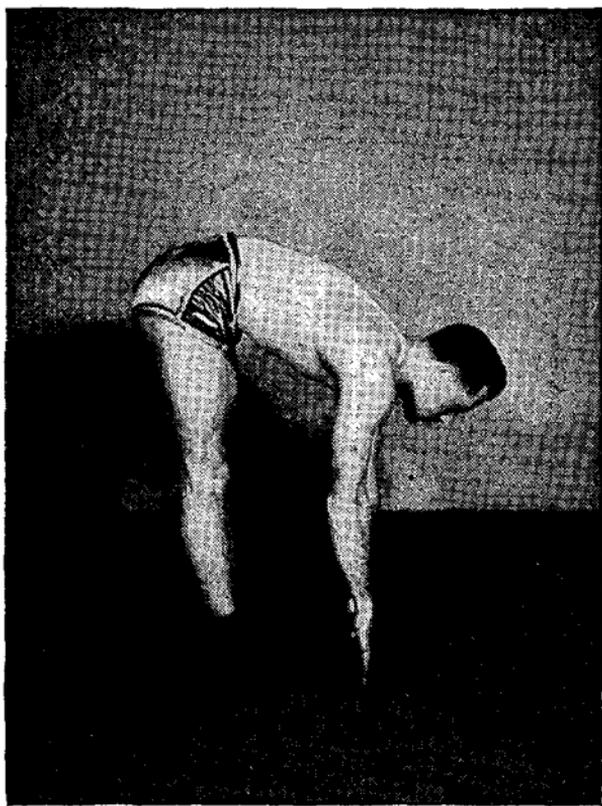


FIGURE 95.

(6) Starting position: SIDE STRADDLE, ARMS OVERHEAD. Bend trunk backward as far as possible on ONE (fig. 96); recover on two. Legs are straight throughout. Cadence, slow.

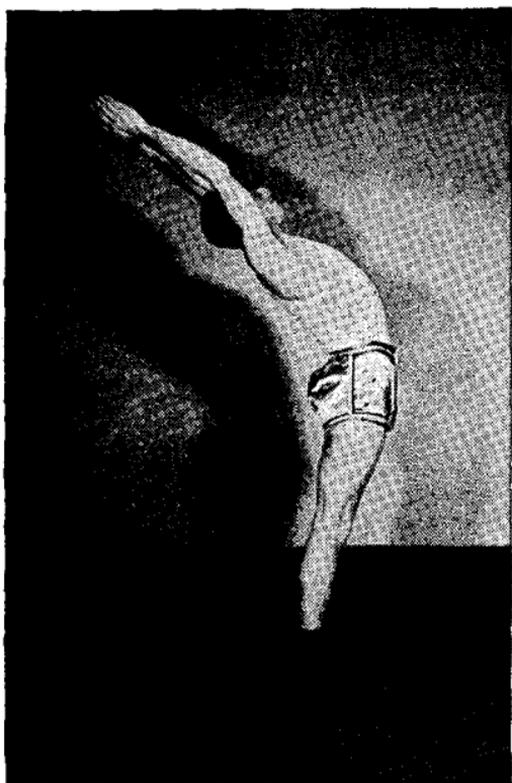


FIGURE 96.

(7) Starting position: SIDE STRADDLE, HANDS ON HIPS. Bend trunk to the right and raise left arm overhead on ONE (fig. 97); recover on two. Bend left and raise right arm overhead on THREE; recover on FOUR. Cadence, slow.



FIGURE 97.

(8) Starting position: **SIDE STRADDLE, ARMS OVERHEAD, FINGERS LACED.** Bend trunk as far as possible to the right on ONE (fig. 98); bend left on TWO. Count four, recovering on the last count of the last sequence. Cadence, slow.

(9) Starting position: **HANDS ON HIPS.** Bend trunk 90° for-

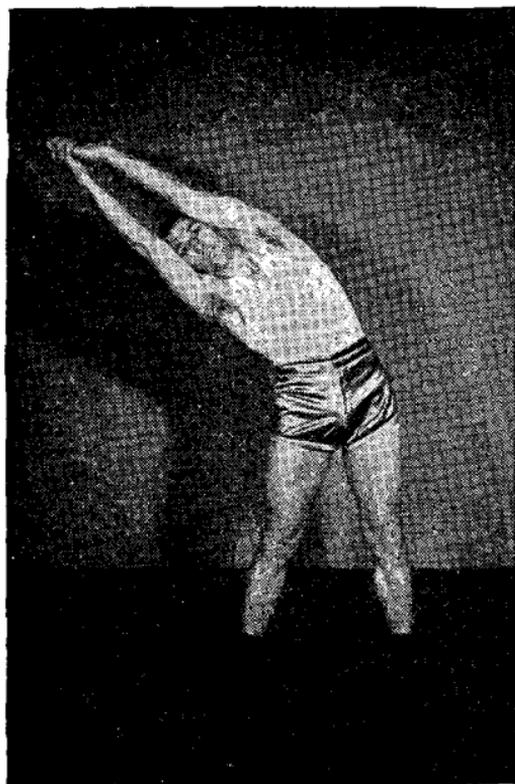


FIGURE 98.

ward on ONE; bend trunk as far backward as possible on TWO, legs straight. Count four, recovering on the last count of the last sequence. Cadence, fast.

(10) Starting position: **HANDS ON HIPS.** Bend trunk to right as far as possible on ONE; bend to the left on TWO. Count four, recovering to the starting position on the last count of the last sequence. Cadence, fast.

*e. Shoulder exercises.*—(1) Starting position: ARMS TO THRUST. Raise shoulders as high as possible on ONE; lower on two. Cadence, optional.

(2) Starting position: ARMS TO THRUST. Move shoulders as far forward as possible on ONE; move shoulders as far to the rear as possible on two. Count four, recovering to the starting position on the last count of the last sequence. Cadence, slow.

(3) Starting position: HANDS ON SHOULDERS. Move elbows as far forward as possible on ONE; move elbows as far to the rear as possible on two. Count four, recovering to the starting position on the last count of the last sequence. Cadence, slow.

(4) Starting position: ARMS TO THRUST. Move shoulders forward on ONE; upward on TWO; backward on THREE; recover on FOUR. Cadence, slow.

(5) Starting position: ATTENTION. Curl shoulders as far forward as possible on ONE; curl them as far to the rear as possible on two. Count four, recovering to the starting position on the last count of the last sequence. As the shoulders curl forward, the backs of the hands turn inward; as the shoulders curl backward, the backs of the hands turn outward and rearward until the palms are facing to the sides. Cadence, very slow.

*f. Neck exercises.*—(1) Starting position: HANDS ON HIPS (OR ATTENTION). Turn head as far as possible to the right on ONE; recover on two; turn head as far as possible to the left on THREE; recover on FOUR. Drawl the first and third counts, making the second and fourth snappy.

(2) Starting position: ATTENTION (OR HANDS ON HIPS). Revolve head in a complete circle to the right for four counts, then left for four counts. The head is bent forward and rotated entirely around reaching the front bent position before starting the second count. The movement is repeated on two, etc. Cadence, very slow.

(3) Starting position: ATTENTION (OR HANDS ON HIPS). Stretch neck as far forward as possible on ONE; recover on two; stretch neck rearward on THREE; recover on FOUR.

**Cadence**, slow to moderate. In this exercise the head is held erect throughout, eyes to the front.

(4) Starting position: **FINGERS LACED IN REAR OF HEAD, ELBOWS TO THE FRONT.** Push head well forward and downward on **ONE**, resisting the pressure with the neck muscles; recover on **TWO**; bend the head well backward on **THREE**, resisting with the hands; recover on **FOUR**. Cadence, very slow.

(5) Starting position: **FINGERS LACED IN REAR OF HEAD, HEAD BENT WELL FORWARD.** Turn head to the right on **ONE**, resisting by pressing downward with the hands; recover on **TWO**; turn left on **THREE**; recover on **FOUR**. Cadence, very slow.

*g. Balancing exercises.*—(1) Starting position: **ATTENTION, THEN RISE ON TOES.** Swing right leg well forward on **ONE**; swing right leg well rearward on **TWO**; forward on **THREE**; recover on **FOUR**; swing left leg well forward on **FIVE**; rearward on **SIX**; forward on **SEVEN**; recover on **EIGHT**. Do not lower heels to the ground during this exercise. The legs are straight throughout.

(2) Starting position: **HANDS ON HIPS; THEN RISE ON TOES.** Bend body  $90^{\circ}$  forward on **ONE**; recover on **TWO**; bend backward as far as possible on **THREE**; recover on **FOUR**. Cadence, optional. Do not lower the heels to the ground during this exercise. The legs are straight throughout.

(3) Starting position: **ARMS OVERHEAD; THEN RISE ON TOES.** Bend body well to the right on **ONE**; recover on **TWO**; left on **THREE**; recover on **FOUR**. Cadence, optional. Do not lower heels to the ground during this exercise.

(4) Starting position: HANDS ON HIPS. Bend trunk to the right on ONE, raising left leg (fig. 99); recover on TWO; bend left on THREE, raising right leg; recover on FOUR. Cadence, very slow.

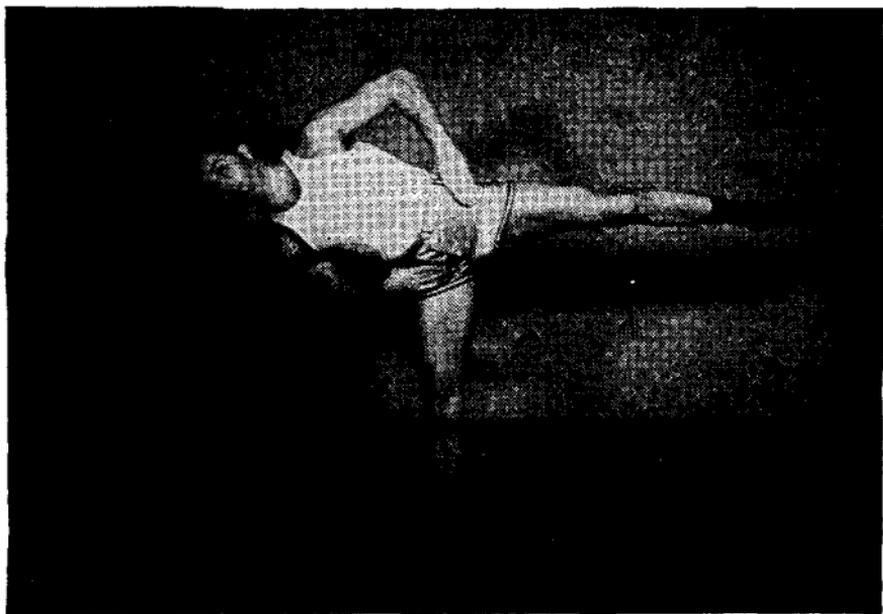


FIGURE 99.

(5) Starting position: SQUATTING POSITION. Raise body off the ground on ONE, balancing weight of body on arms (fig. 100); hold this position for the next three counts, lowering on FOUR. Cadence, very slow.

*h. Coordinating exercises.*—(1) Starting position: ARMS TO THRUST. Thrust arms forward on ONE; recover on TWO; thrust arms sideward on THREE; recover on FOUR; thrust arms

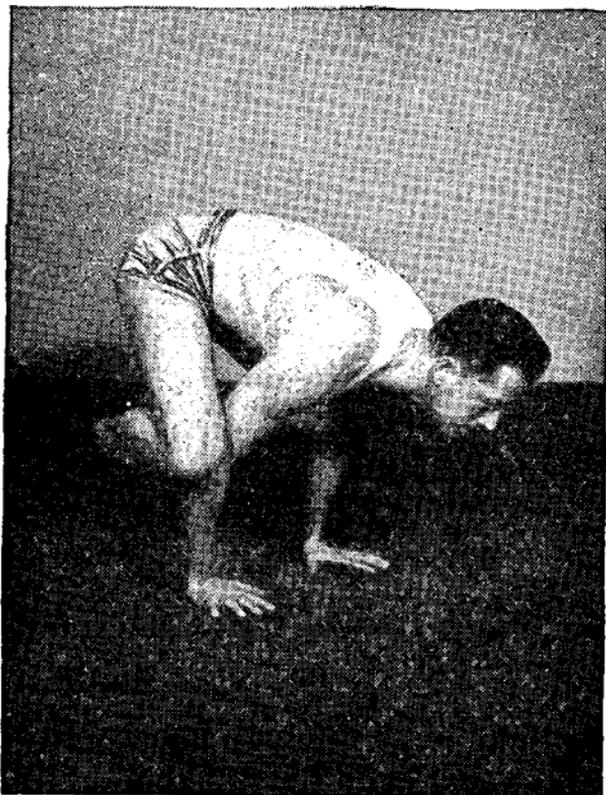


FIGURE 100.

overhead on FIVE; recover on SIX; thrust arms downward on SEVEN; recover on EIGHT. Cadence, fast.

(2) Starting position: HANDS ON SHOULDERS. Extend the right arm sideward and the left arm forward on ONE; recover on two; extend the left arm sideward and the right arm forward on THREE; recover on FOUR. Cadence, optional.

(3) Starting position: ATTENTION. Move arms to vertical flex (fig. 101) on ONE; raise right arm overhead on two; raise left arm overhead on THREE; lower left arm to vertical

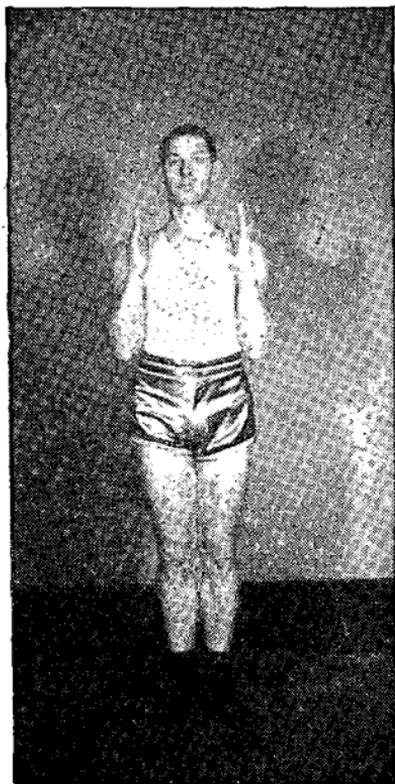


FIGURE 101.

flex on FOUR; lower right arm to vertical flex on FIVE; move both arms to horizontal flex on SIX (fig. 102); return both arms to vertical flex on SEVEN; recover to attention on EIGHT. Cadence, optional.

(4) Starting position: ATTENTION. Raise right arm forward and overhead and left arm sideward and overhead on ONE; recover on two; raise right arm sideward and overhead and left arm forward and overhead on THREE; recover on FOUR. Cadence, optional.

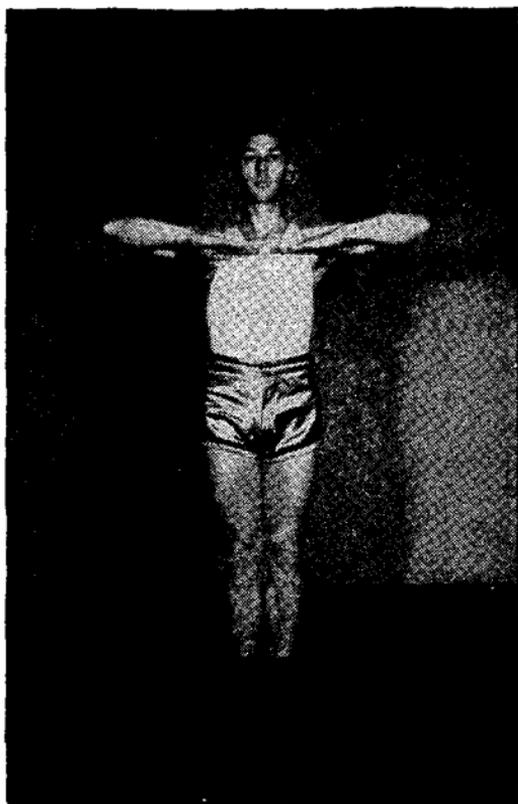


FIGURE 102.

(5) Starting position: **ATTENTION**. Raise right leg forward and right arm sideward on **ONE**; recover on **TWO**; raise left leg sideward and left arm forward on **THREE**; recover on **FOUR**; raise right leg sideward and right arm forward on **FIVE**; recover on **SIX**; raise left leg forward and left arm sideward on **SEVEN**; recover on **EIGHT**. Cadence, optional.

*i. Combined exercises.*—Some of the exercises in this group do not lend themselves readily to a precise and military manner of performance. A few of them will have to be done entirely "at will." This in no way detracts from their physiological value.

(1) Starting position: **HANDS ON SHOULDERS**. Rise on toes and extend arms overhead on **ONE**; recover on **TWO**. Cadence, optional.

(2) Starting position: **ARMS TO THRUST**. Bend knees to one-quarter bent position on **ONE**, heels remaining on ground; continue bending knees to the half bent position on **TWO**, rising on toes; continue bending knees to the full bent position on **THREE**, at same time forcibly striking arms to side horizontal; recover on **FOUR**. Cadence, optional.

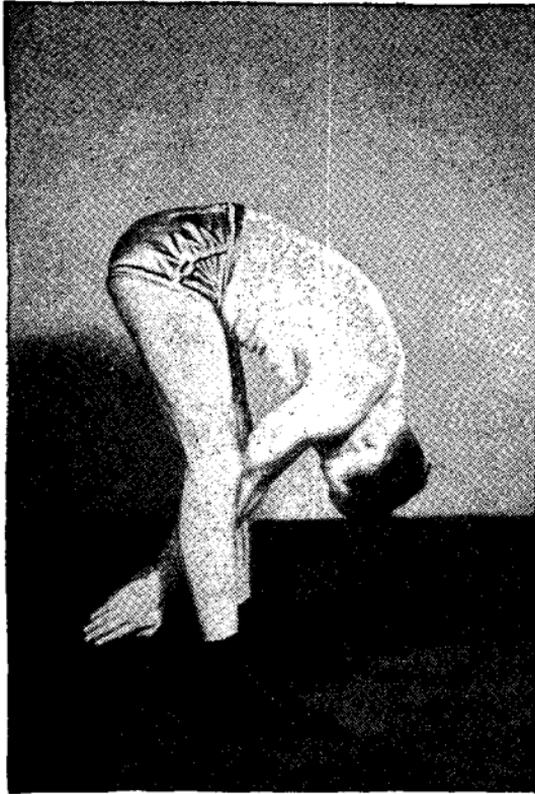


FIGURE 103.

(3) Starting position: **SIDE STRADDLE, ARMS OVERHEAD**. Bend trunk forward and swing arms forcibly between legs as far as possible to the rear on **ONE** (fig. 103); recover on **TWO**. Drawl the counts. Cadence, slow.

(4) Starting position: **SIDE STRADDLE, HANDS ON SHOULDERS**. Bend trunk fully forward on **ONE**, extending arms downward until hands touch the ground; recover on **TWO**; bend backward as far as possible on **THREE**, extending arms to the side hori-

zontal, palms up; recover on FOUR. The knees are straight throughout. Cadence, slow.

(5) Starting position: SQUATTING POSITION. Extend the right leg straight to the rear on ONE (fig. 104); recover on two; extend the left leg to the rear on THREE; recover on FOUR. Cadence, optional.

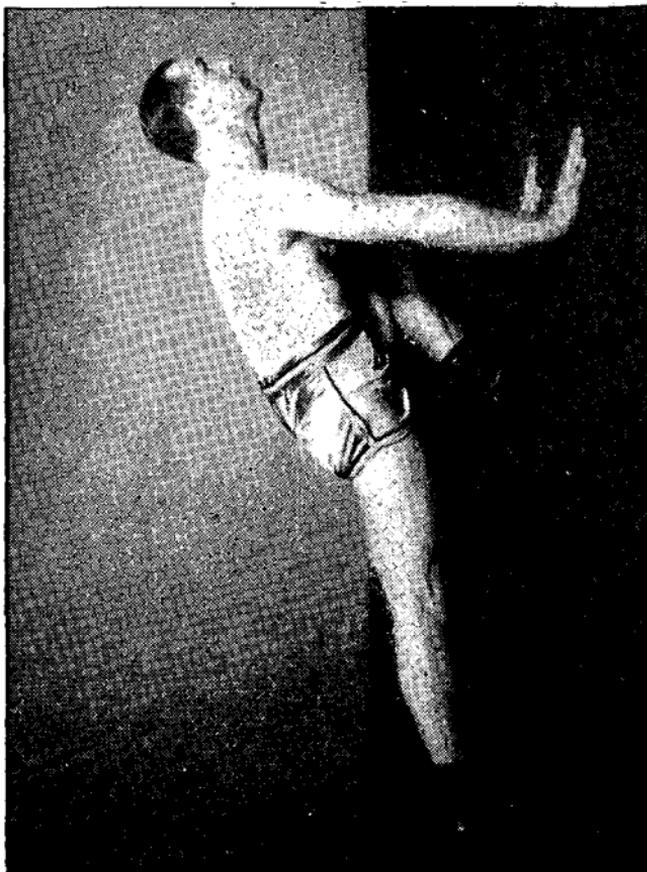


FIGURE 104.

(6) Starting position: ATTENTION. Hop to the side straddle on ONE, bringing arms sideward and overhead; recover on two. Cadence, very fast. This exercise should be performed without pausing between any counts and should be performed until rapid breathing results.

(7) Starting position: LIE ON BACK CLASPING KNEES (fig. 105). Rock back and forth in this doubled up position at least 20 times. This is an excellent exercise for limbering, massaging, and toning up the back muscles. It is so easy to do that it can, and should be, continued for some seconds (at least 20 complete rocking motions). It is difficult to perform in cadence, hence may be done "at will."

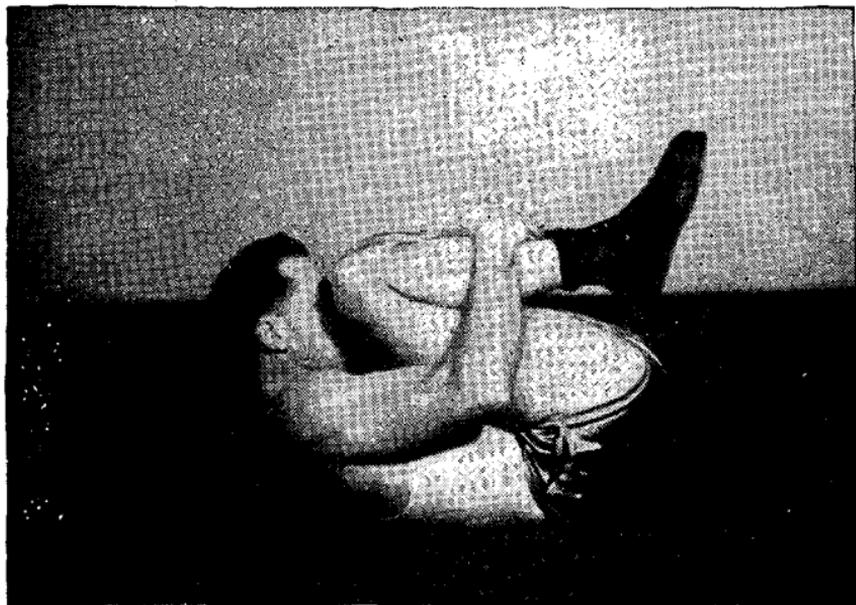


FIGURE 105.

(8) Starting position: **SIDE STRADDLE, ARMS SIDEWARD**. Bend trunk forward on **ONE**, touching floor between feet with fingers of right hand (fig. 106); recover on **TWO**; bend trunk forward on **THREE**, touching floor with fingers of left hand; recover on **FOUR**. The knees are straight throughout and the

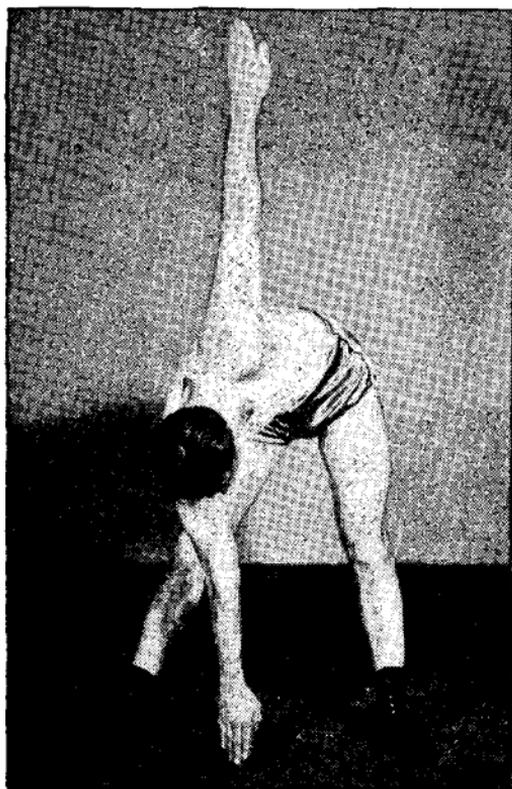


FIGURE 106.

arms remain in the plane of the shoulders throughout, hence the trunk must twist right or left as it bends forward. Cadence, optional.

(9) Starting position: **HANDS ON HIPS**. Extend right arm forward on **ONE**, at the same time swinging left leg forward and upward until the foot touches the right hand; recover on **TWO**; extend left arm forward on **THREE** and swing right leg up until foot touches the left hand; recover on **FOUR**.

The knees are straight and the trunk is held erect throughout. Cadence, optional.

(10) Starting position: SIDE STRADDLE, ARMS OVERHEAD. Bend trunk obliquely to the right on ONE, swinging arms downward, rearward and up in rear as high as possible; recover on two; bend trunk obliquely left on THREE, swinging arms as on ONE; recover on FOUR. The knees are straight throughout. Cadence, optional.



FIGURE 107.

(11) Starting position: ATTENTION (OR HANDS ON HIPS). Lunge well forward on right leg on ONE, at the same time raising arms to side horizontal, palms up (fig. 107); recover on two; lunge forward on left leg on THREE, raising arms to side horizontal, palms up; recover on FOUR. The trunk is held erect throughout and the leg remaining to the rear on each lunge is held straight. Cadence, slow to moderate.

(12) Starting position: ATTENTION (OR HANDS ON HIPS). Lunge sideward right on right leg on ONE, raising arms to side horizontal, palms up (fig. 108); recover on two; lunge sideward left on THREE, arms to the side horizontal; recover on FOUR. The trunk is held erect throughout and the leg remaining behind on the lunge is straight. Cadence, slow to moderate.

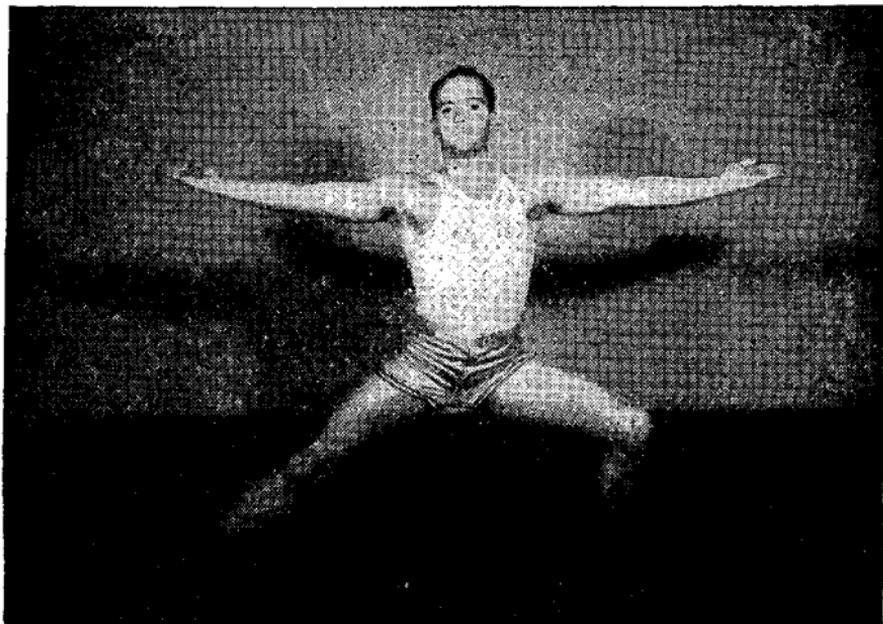


FIGURE 108.

(13) Starting position: ATTENTION (OR HANDS ON HIPS). Lunge obliquely to the left on ONE, raising arms to side horizontal, palms up; bend trunk and encircle left thigh with arms on TWO (fig. 109); recover to the position described in ONE (lunge position) on THREE; recover on FOUR; same to the right oblique on FIVE, SIX, SEVEN, and EIGHT. The leg remaining behind on the lunge is straight. Cadence, slow to moderate.

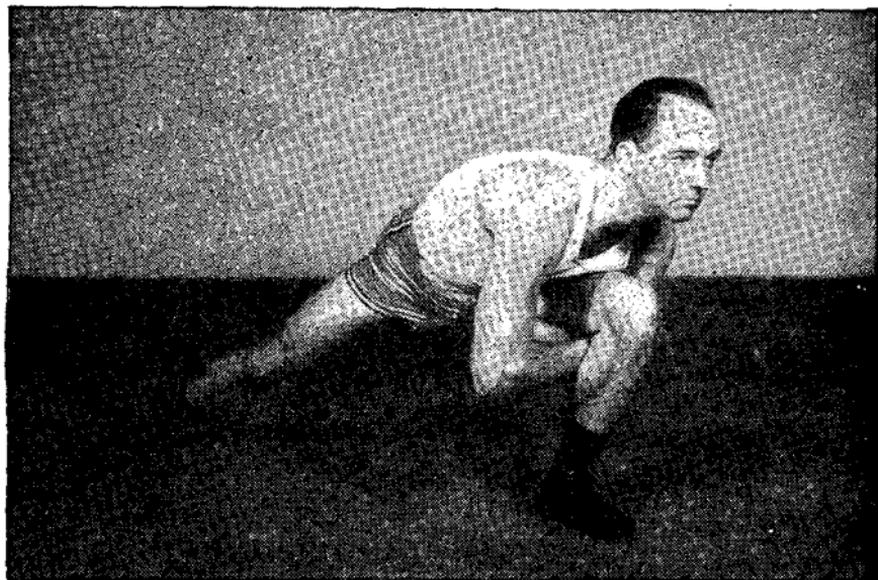


FIGURE 109.

(14) Starting position: SIDE STRADDLE, ARMS SIDEWARD. Bend trunk sideward right on ONE, swinging left arm upward and right arm downward and bending right knee slightly (fig. 110); recover on two; same to left on THREE and FOUR. Cadence, slow.

(15) Starting position: ATTENTION. Swing arms inward and upward to the overhead position on ONE, rising up on toes

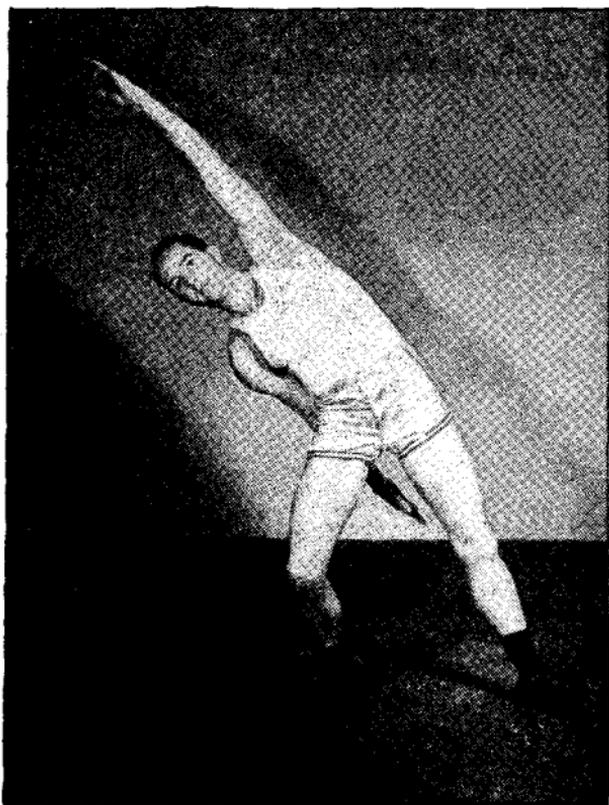


FIGURE 110.

to the fullest extent and stretching the entire body; swing arms outward, backward and downward on two, lowering along the outside edge of the feet until the heels touch the ground. Drawl both counts. Cadence, slow. The inhalation should be made as the arms are raised and the exhalation as they are lowered. This is a combined breathing, stretching, and foot (arch) exercise.

(16) Starting position: SQUATTING POSITION. Extend the right leg straight to the right on ONE (fig. 111); recover on two; extend the left leg straight to the left on THREE; recover on four. Cadence, optional.

(17) Starting position: DEEP KNEE BEND POSITION, ARMS SIDE-

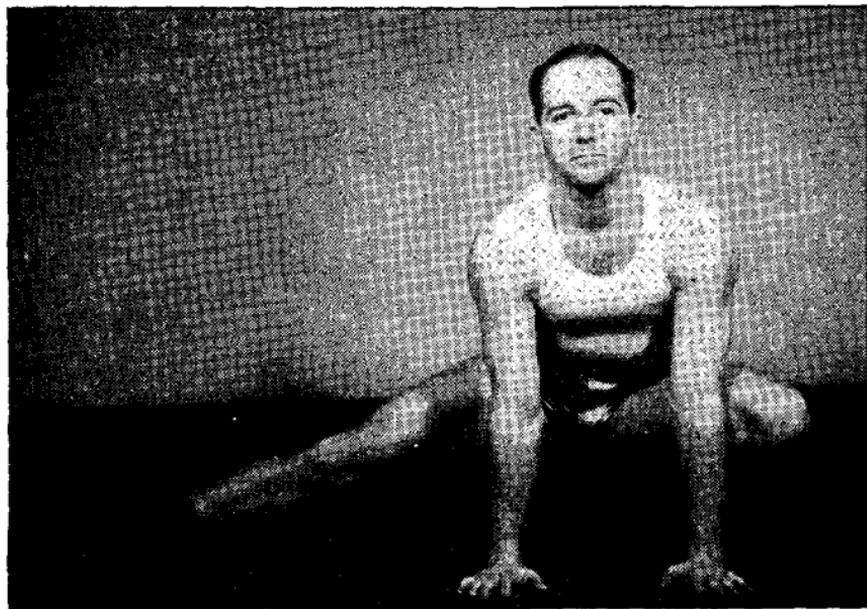


FIGURE 111.

WARD, PALMS UP. Bounce up and down on the toes at the same time circling the arms in small circles (hand describing about 12" circles), in an upward, backward, and downward motion. Count four, making each count come as the arms reach the high point of their circles, which should be the time when the feet reach their high point (about 3 inches off the ground). Cadence, optional.

(18) Starting position: ATTENTION (OR HANDS ON HIPS). Bend to the squatting position on ONE; move both legs laterally to the side straddle position on TWO (fig. 112); recover to the squatting position on THREE, and to the starting position on FOUR. Cadence, moderate.

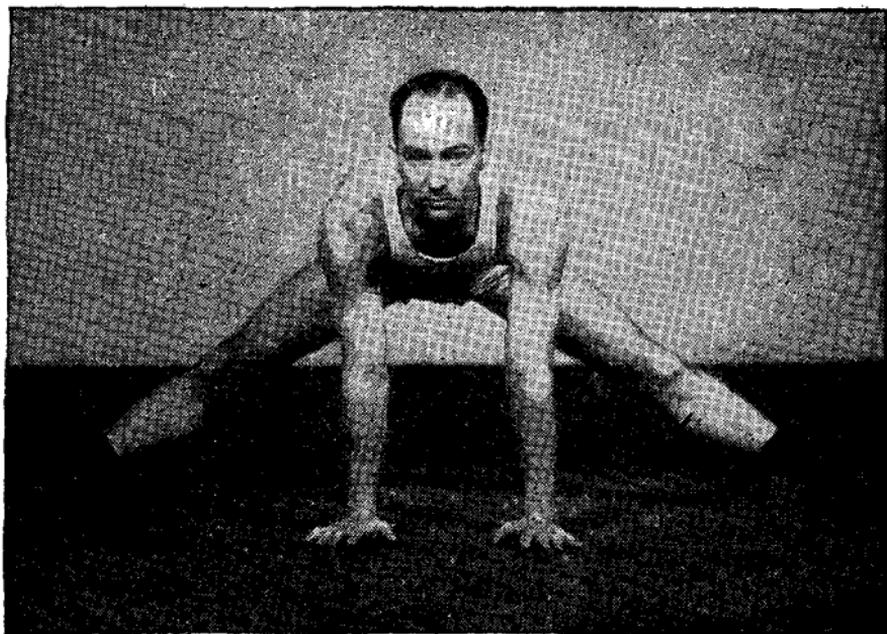


FIGURE 112.

(19) Starting position: ATTENTION (OR HANDS ON HIPS). Bend to the squatting position on ONE; extend legs straight to the rear and assume the leaning rest position on TWO (fig. 113); recover to the squatting position on THREE; recover to attention on FOUR. Cadence, optional. In the leaning rest position, the arms are straight and vertical; the back and legs are straight; the feet are together; and the head is up with the eyes to the front.

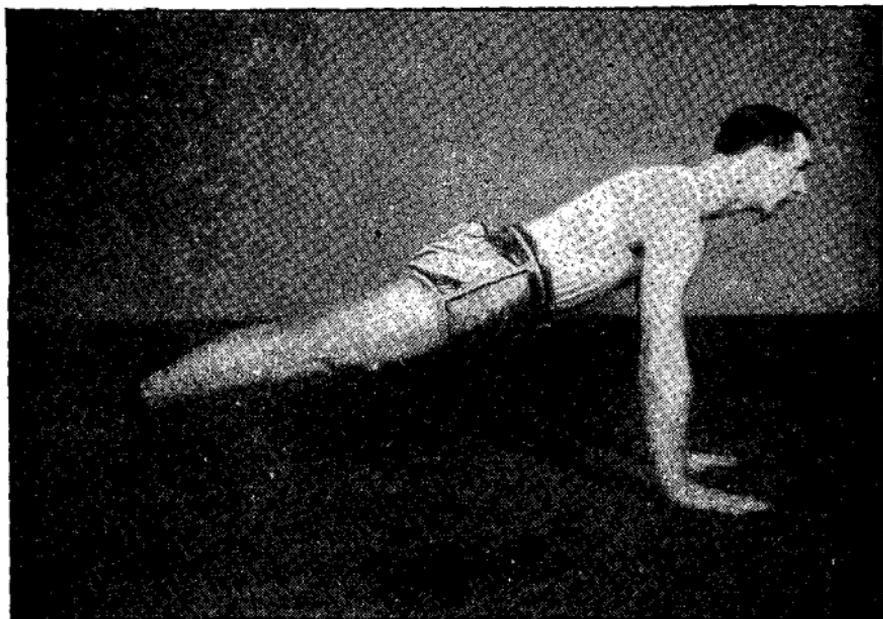


FIGURE 113.

(20) Starting position: LYING FLAT ON THE BACK, ARMS ALONG SIDES, LEGS STRAIGHT AND TOGETHER. Rise up to the sitting position on ONE, extending arms forward and bending body forward until the hands touch the toes; lower back to the ground on two. Drawl both counts. Cadence, very slow. In rising to the sitting position, the legs should be kept in contact with the ground and the knees held stiff.

NOTE.—It is difficult to assume the above starting position in a military manner, that is "by the numbers". It can be done, however, and the quickest way is as follows: Bend to the squatting position on ONE; move legs through arms to sitting position on TWO; lie back on THREE.

(21) Starting position: LYING FLAT ON THE BACK, ARMS ALONG SIDES, LEGS TOGETHER. Raise both legs, knees straight, up overhead on ONE, touching the toes to the ground behind the head (fig. 114); bring legs back down to the starting position on two. Drawl both counts. Cadence, very slow. This exercise should be performed at least 10 times.

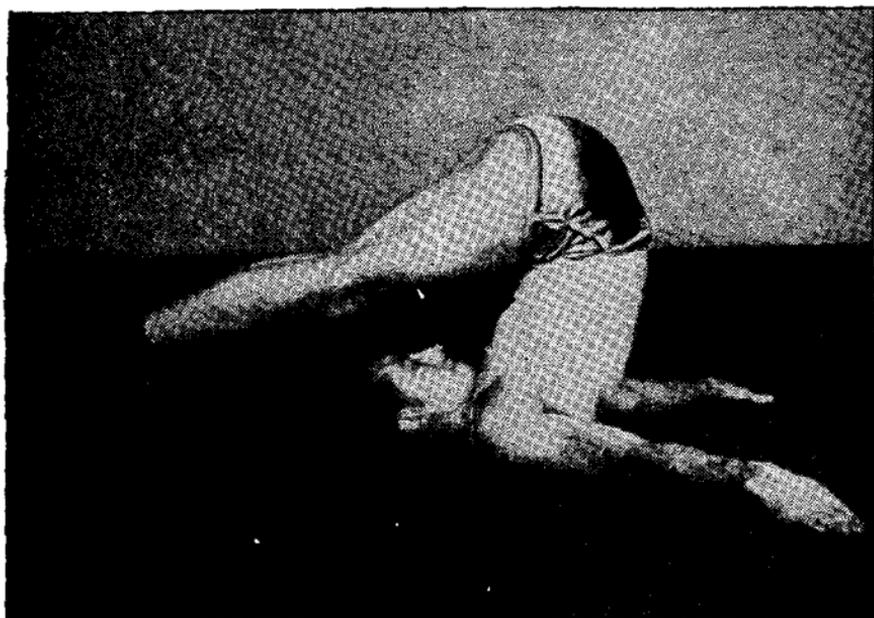


FIGURE 114.

(22) Starting position: SITTING POSITION ON THE GROUND, ARMS TO THE SIDE HORIZONTAL, LEGS SPREAD  $45^{\circ}$ . Twist trunk to the right on ONE, touching the right foot with the left hand; twist to the left on two, touching the left foot with the right hand; continue in this manner until completion of exercise, returning to the starting position on last count of last sequence. The arms are kept in the plane of the shoulders throughout. Cadence, optional.

(23) Starting position: PRONE POSITION ON GROUND, HANDS BESIDE CHEST. Extend the arms to the fullest on ONE, arching the back as much as possible while keeping the hips in contact with the ground (fig. 115); lower on two. This is an excellent back stretching and limbering exercise. Drawl both counts. Cadence, very slow.

NOTE.—The prone position can be reached in cadence as follows: Bend to the squatting position on ONE; extend the legs and assume the leaning rest position on two; lower to the ground on THREE.

(24) Starting position: LYING FLAT ON THE BACK, ARMS ALONG SIDES, LEGS TOGETHER AND STRAIGHT. Raise right leg up to the

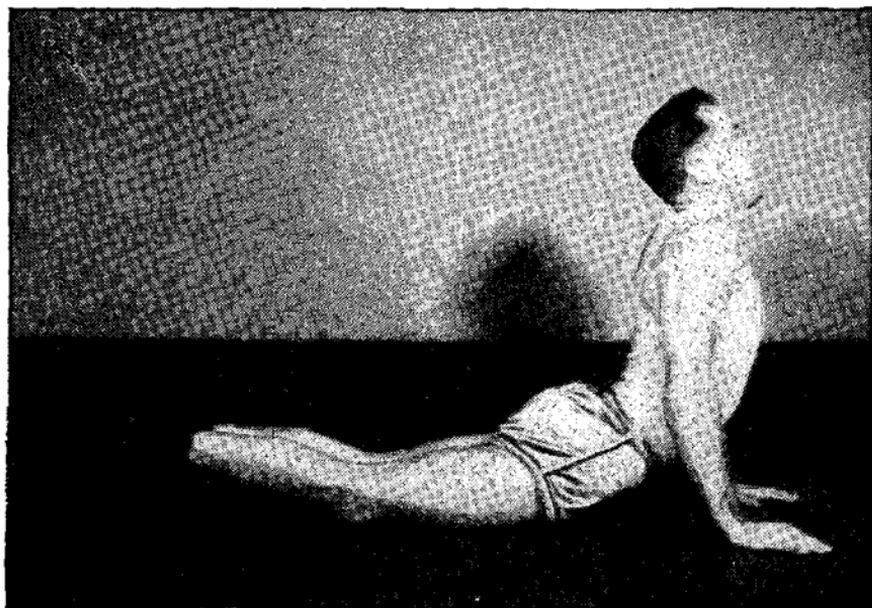


FIGURE 115.

vertical position on ONE; lower right leg and raise the left leg to the vertical position on two; perform in a continuous manner for as many counts as desired, returning to the starting position on the last count of the final sequence. This exercise should be performed for at least 10 sequences of 4 counts each. In lowering the leg to the ground as the other leg is raised, contact with the ground should not be made; the foot should halt about 3 inches off the ground. Cadence, optional.

(25) Starting position: PRONE POSITION WITH THE ARMS OVERHEAD, PALMS ON THE GROUND. Raise legs, arms, and chest as high off the ground as possible on ONE, legs and arms straight (fig. 116); hold body in this position and open legs out wide while moving arms to the sides horizontal on TWO (fig. 117); return to the position of ONE on THREE; lower to the prone position on FOUR. Cadence, optional. (This exercise is an excellent one for strengthening the lower back, especially the sacroiliac region).

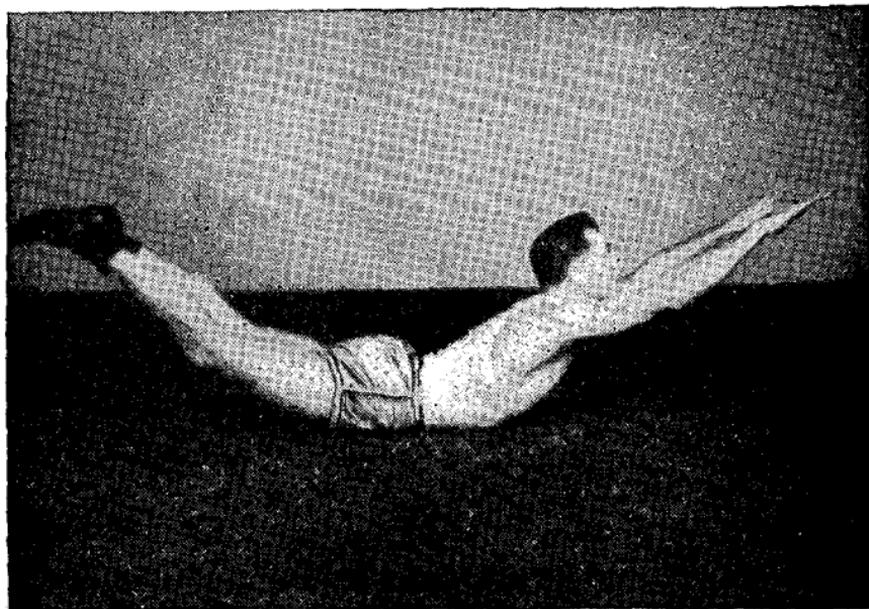


FIGURE 116.

(26) Starting position: LYING ON THE BACK, ARMS ALONG THE SIDES, LEGS TOGETHER AND STRAIGHT. Raise the legs slightly off the ground and hold. Now start a "bicycling" action by drawing alternate knees back as far as possible while keeping the feet just off the ground throughout. Count four, the count of ONE coming as the right knee is drawn back (fig. 118); the count of two coming as the left knee is drawn back and the right leg extended, etc. This exercise is very strenuous but should be performed for at least 10 sequences of 4 counts each. Cadence, optional.

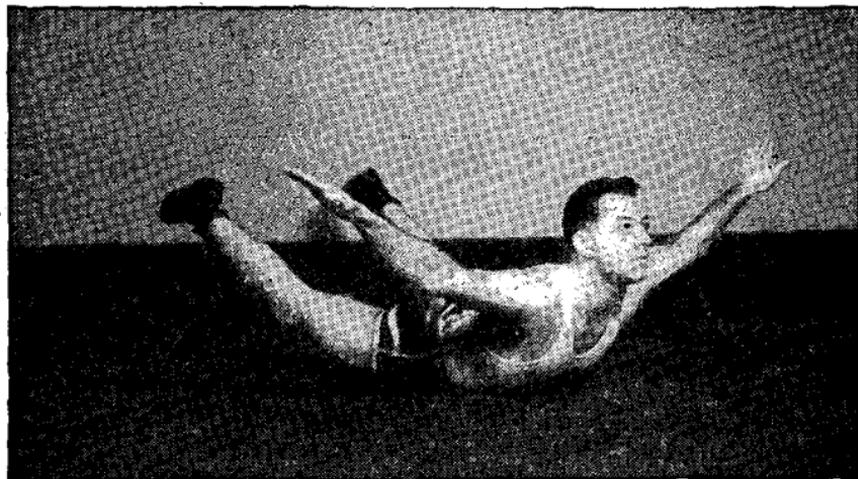


FIGURE 117.

(27) Starting position: PRONE POSITION, ARMS LOCKED BEHIND THE BACK. Raise the chest and the legs as high as possible, keeping knees stiff, and start rocking forward and backward

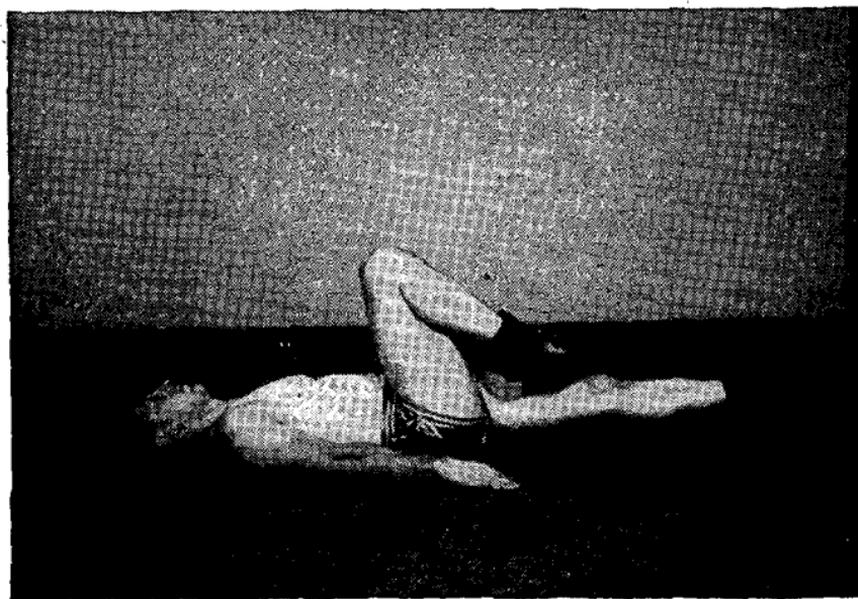


FIGURE 118.

on the stomach. It is difficult to do this exercise in cadence, hence it should be performed "at will", continuing it for at least 20 seconds.

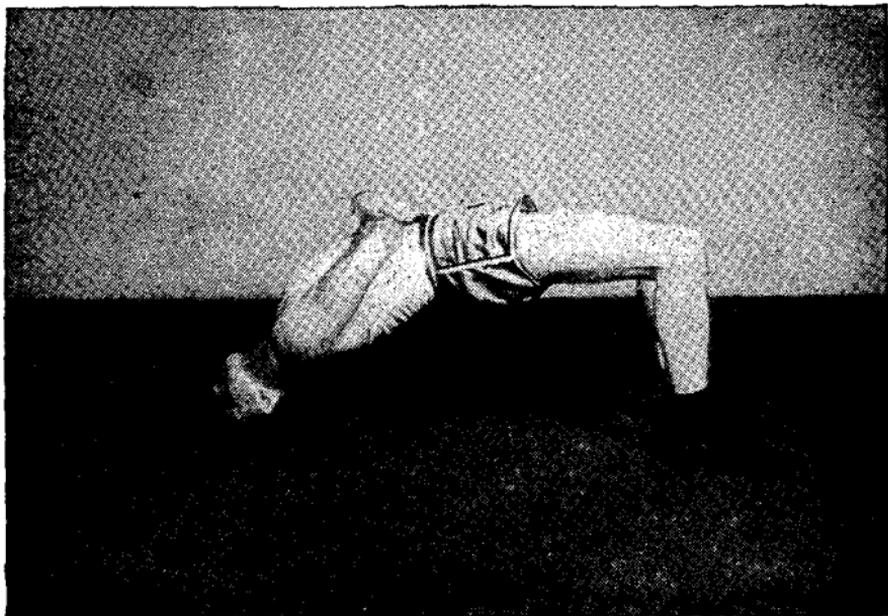


FIGURE 119.

(28) Starting position: LYING FLAT ON THE BACK, LEGS TOGETHER, KNEES DRAWN UP, FEET ON THE GROUND, ARMS FOLDED ACROSS THE CHEST. Lift entire torso off the ground on ONE, so that the back is well arched and the body weight is supported at two points only, the head and the feet (fig. 119); lower to the starting position on two. Drawl both counts. Cadence, very slow. This exercise should be performed about 10 times. It is an excellent neck and back exercise.

(29) Starting position: LYING FLAT ON THE BACK, KNEES DRAWN UP, FEET ON THE GROUND, HANDS BESIDE HEAD WITH PALMS ON THE GROUND. Raise body up off the ground on one, so that

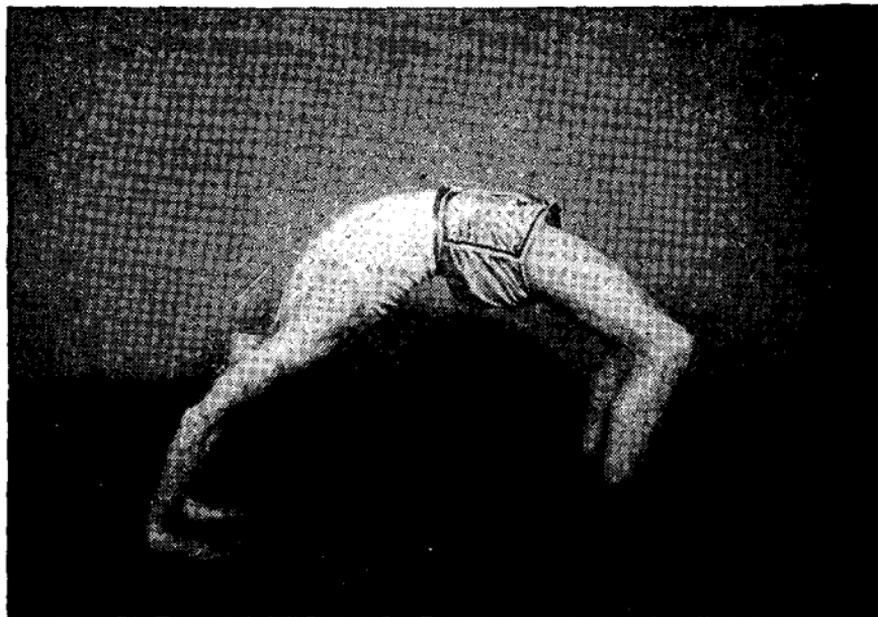


FIGURE 120.

the back is well arched and the body weight is supported at two points only, the hands and the feet (fig. 120); lower to the starting position on two. When the back is in the arched position, the arms are straight. Drawl both counts. Cadence, very slow. This exercise should be performed about 10 times.

30) Starting position: LYING FLAT ON THE BACK, KNEES DRAWN UP, FEET ON THE GROUND, FINGERS LACED IN REAR OF HEAD. Holding the head down against the ground and the knees drawn up, curl the trunk and bring the knees up on ONE, touching the chest, shoulders, or chin (fig. 121); lower to the starting



FIGURE 121.

position on two. Drawl both counts. Cadence, very slow. This exercise should be performed about 15 times. It is one of the best stomach exercises known, if properly performed. Do not use the legs to help the body bend and do not raise the head off the ground at any time. The hips should come up well off the ground on ONE. This exercise will be difficult to perform properly at first but practice will strengthen the stomach muscles so that it can be done properly.

(31) Starting position: SITTING POSITION ON GROUND, LEGS EXTENDED TOGETHER, HANDS CLASPING THE LEGS BELOW THE KNEE. Bend trunk forward on ONE, pulling the trunk down as far as possible with the arms, touching the forehead to the knees (fig. 122); recover to the starting position on two. The legs are held straight throughout. Drawl the first count, making

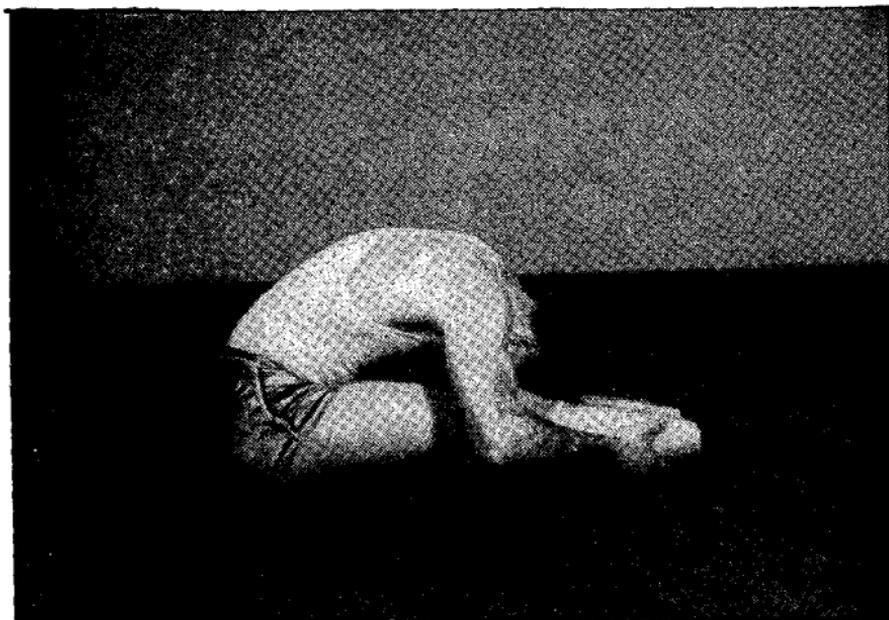


FIGURE 122.

the second count snappy. Cadence, very slow. This is a difficult exercise for some individuals to perform, (those having stiff backs), but anyone can learn to do it. It is best to do the exercise "at will" at first. This is an excellent back limbering exercise and when the individual can accomplish it without too much pulling by the arms, it becomes, as well, an excellent stomach exercise. It should be performed at least 10 times.

(32) Starting position: THE LEANING REST POSITION (fig. 113). Lower the body to the ground on ONE (fig. 123); recover on two. The back is straight throughout. Cadence, optional. This exercise should be performed at least 12 times. This is an excellent arm, shoulder, and back strengthening exercise. It is commonly called "push ups".

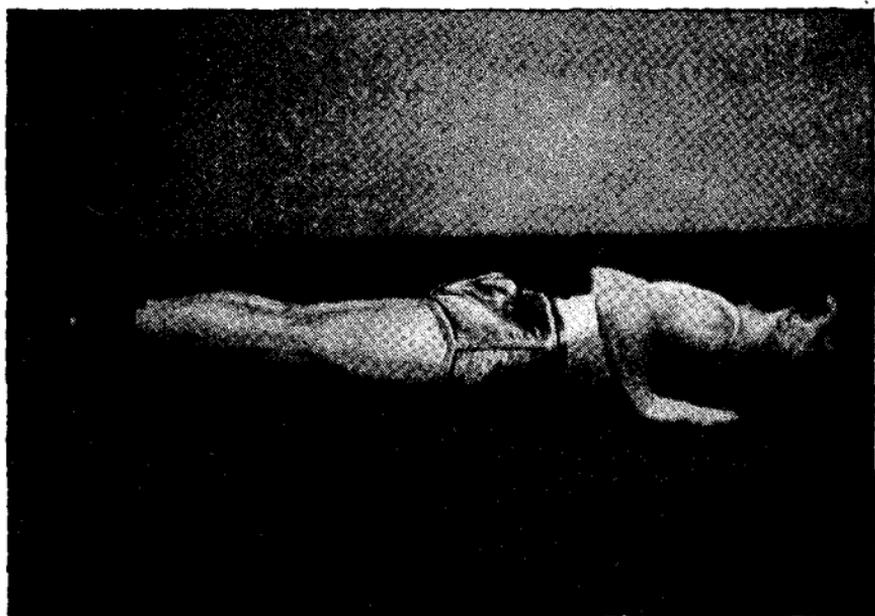


FIGURE 123.

(33) Starting position: ATTENTION. Bend to the squatting position on ONE; extend legs to the leaning rest position on two (fig. 113); lower to the prone position on THREE (fig. 123); recover to the leaning rest on FOUR; recover to the squatting position on FIVE; recover to attention on SIX. Cadence, optional. This exercise is a variation of exercise (32) above.

(34) Starting position: ATTENTION. Bend to the squatting position on ONE; extend legs to the leaning rest on two (fig. 113); lower to the prone position on THREE, at the same time raising the right leg, knee stiff (fig. 124); recover to the leaning rest on FOUR; lower to the prone position on FIVE,

at the same time raising the left leg, knee stiff; recover to the leaning rest on six; recover to squatting position on SEVEN; recover to attention on EIGHT. Cadence, optional. This exercise is a variation of exercises (32) and (33) above. It should be performed for at least six sequences of eight counts each.

(35) Starting position: SQUATTING POSITION. Extend the right leg straight to the rear on ONE; draw up the right leg to the starting position on two, at the same time extending the left leg straight to the rear. Continue in this manner.

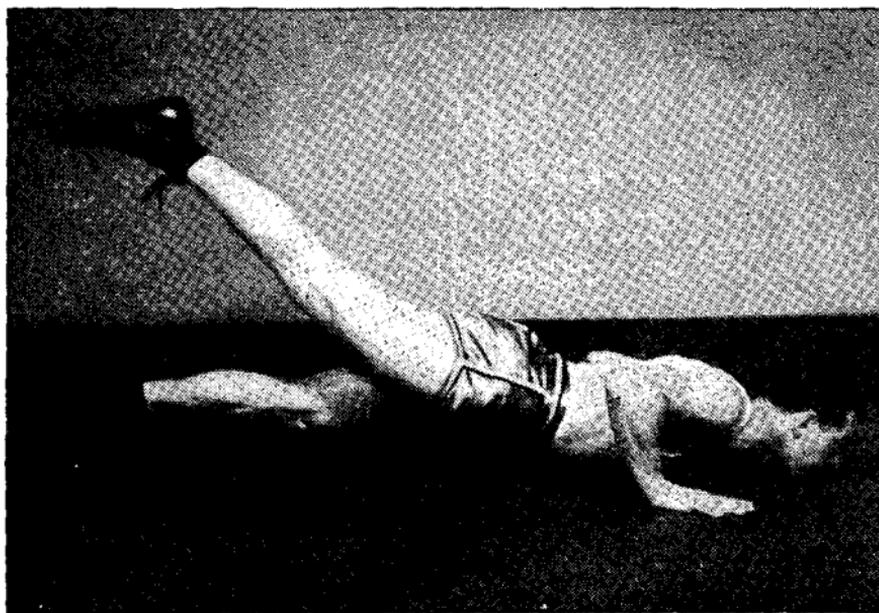


FIGURE 124.

Count four. Cadence, fast. This exercise is strenuous if performed, as it should be, for at least 10 sequences of 4 counts each. It is similar to exercise (5) above of this group except that it is done alternating the legs in a manner similar to running. (See fig. 104).

(36) Starting position: SQUATTING POSITION. Extend the right leg straight to the right on ONE; bring right leg back to the starting position on two, at the same time extending

the left leg straight to the left. Continue in this manner. Count four. Cadence, optional. In performing this exercise, it is necessary to support the body weight on the arms for that instant when the one leg is brought back while the other is being extended. It is a strenuous exercise if performed, as it should be, for at least eight sequences of four counts each

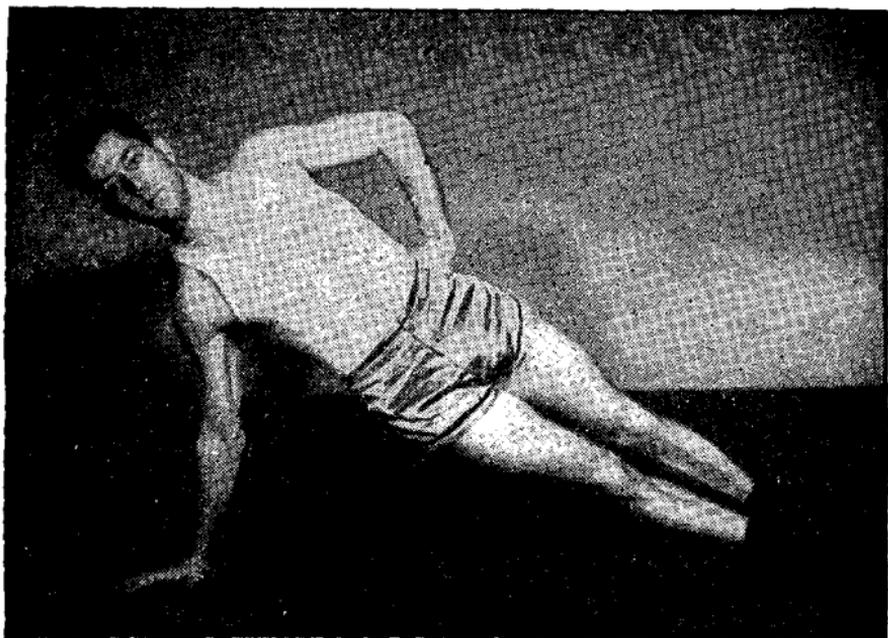


FIGURE 125.

(37) Starting position: SIDE LEANING REST ON RIGHT ARM, LEFT HAND ON HIP (fig. 125). Lower body to the ground on one, keeping the right arm straight and the body in the same plane as at the start (facing to the left); recover to the starting position on two. Cadence, slow. This exercise should be performed for at least four sequences of four counts each on each side; that is, four sequences on the right side and four on the left. This is an excellent exercise to strengthen the hip girdle and the muscles of the sides.

(38) Starting position: LYING FLAT ON THE BACK, ARMS EXTENDED ALONG THE SIDES WITH THE HANDS ABOUT 12 INCHES FROM HIPS. Raise the legs, knees stiff, to the vertical on ONE; lower the legs, knees stiff, to the right until the feet touch the floor on TWO (fig. 126); raise the legs up to the vertical on THREE; lower the legs to the left side on FOUR; raise the legs to the vertical on FIVE; lower the legs to the starting position on SIX. Drawl all counts. Cadence, very slow. This is an excellent

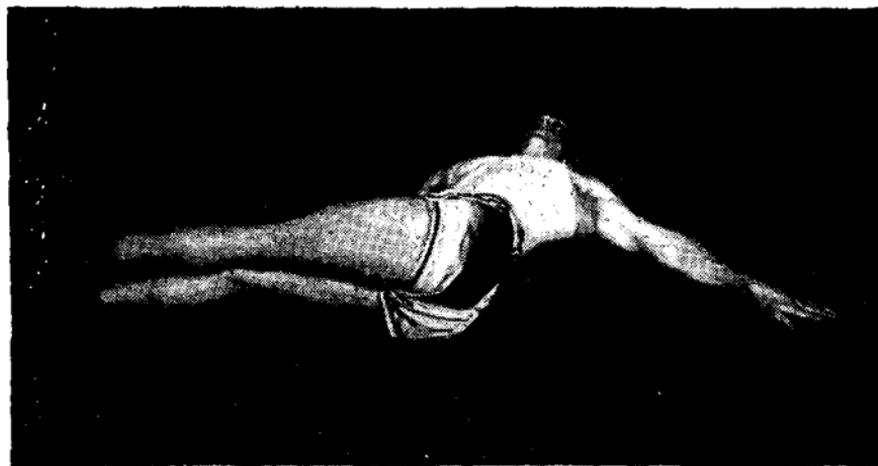


FIGURE 126.

exercise for strengthening the hip girdle, lower abdominal region, and lower back region. It should be performed for at least five sequences of six counts each.

(39) Starting position: DEEP KNEE BEND POSITION WITH THE ARMS FOLDED IN FRONT AND HELD HORIZONTAL. Extend the right leg fully to the front on ONE; extend the left leg fully to the front on TWO, at the same time returning the right leg to the starting position. Continue in this manner, extending alternate legs forward in a continuous sequence. Cadence, moderate to fast. Count four. This is a difficult exercise to perform at first but is quickly learned. It is the so-called "Russian step", and is an excellent exercise for the legs and back. It should be performed for at least six sequences of four counts.

each, returning to the starting position on the last count of the last sequence (fig. 127).

(40) Starting position: LYING FLAT ON THE BACK, ARMS EXTENDED ALONG THE SIDES WITH THE HANDS ABOUT 12 INCHES FROM THE HIPS. Raise the legs, knees stiff, straight up and over-



FIGURE 127.

head until feet are nearly overhead on ONE; swing legs around to the right close to the floor in a circling motion, so that the feet pass the starting position on TWO; continue swinging the legs over to the left and up overhead so that the feet reach the overhead position on THREE; continue swinging legs to the right, passing the starting position on FOUR; continue swinging the legs to the left and up until they reach the overhead position on FIVE; return the legs to the starting

position on six. Repeat in a like manner, swing the legs in opposite direction (to the left on two). Drawl all counts. Cadence, very slow. The legs should be straight throughout with the feet always about 4 inches off the floor as the legs are circled. This is an excellent exercise for strengthening the hip girdle, the entire back, and the entire abdominal region. It is strenuous, but should be performed for at least four sequences of six counts each (2 sequences each direction). In learning this exercise, it may be necessary at first to bend the knees slightly to relieve strain until the muscles become stronger.

*j. Breathing exercises.*—Breathing exercises are of little value unless they are given at a time when the body is laboring more or less for breath, that is, immediately after a good “work-out” in setting-up exercises or other forms of exercise. Hence they are placed last in this grouping of exercises. Their purpose is to teach the men to breathe deeply, slowly, and fully after exercise to enable them quickly to regain a normal state of physical composure. Breathing exercises should always be done very slowly and never repeated to the point where dizziness sets in through absorption of too much oxygen. This state is unlikely to occur if the body is in real need of oxygen at the time of giving the breathing exercise. Breathing exercises should impress upon the men the necessity for breathing slowly, and hence deeply. If one learns to breathe more slowly, he involuntarily breathes more deeply in order to obtain the same amount of oxygen. The lung capacity will be increased, which is beneficial not only under normal exertion, but especially so when strenuous exercise or work is undertaken.

(1) Starting position: ATTENTION. Raise the arms sideward and upward to the overhead position on ONE, while inhaling as deeply as possible; lower the arms on TWO, exhaling fully in a natural manner, resembling a sigh. The exhalation should not be too forceful since this is unnatural and strained.

(2) Same exercise as (1) above except raising the arms forward and upward to the overhead position.

(3) Starting position: LYING ON THE BACK, ARMS ALONG THE SIDES. Inhale as fully as possible on ONE, while raising the

arms upward and overhead; exhale fully on two, as the arms are brought to the starting position. Cadence, very slow. The exhalation should be done in a natural manner resembling a sigh (1) above.

(4) Starting position: ATTENTION. Relax completely, and move the shoulders forward on ONE, while exhaling fully; resume the position of attention on TWO, while inhaling deeply; exhale on THREE and resume a normal attitude. Cadence, very slow.

(5) Starting position: ATTENTION. Bend the trunk 45° forward on ONE, in a sagging manner, at the same time exhaling fully; resume the position of attention on TWO, while inhaling deeply; exhale on THREE and resume a normal attitude. Cadence, very slow.

■ 75. MARCHING EXERCISES.—*a.* In all marching, at whatever cadence, the feet should be so planted on the ground that the toes point straight ahead (neither pigeon-toed nor spray-footed).

*b.* Most of the marching exercises are, for the convenience of the instructor, described by giving the commands necessary for the group to execute each exercise followed by a brief description of the exercise. Those which may be performed at the double time are so indicated. All others should be performed either at quick time or at a still slower cadence (if the exercise so necessitates). The exercises are as follows:

(1) 1. ON TOES, 2. MARCH. The group rises on the toes and marches in this manner. This exercise may be performed at the double time.

(2) 1. ON TOES WITH KNEES STRAIGHT, 2. MARCH.

(3) 1. EXTEND LEGS ANKLE HIGH, 2. MARCH. As each leg is extended forward in turn, the knee is straightened so that the foot is about 4 inches off the ground at the fullest extension.

(4) 1. EXTEND LEGS KNEE HIGH, 2. MARCH. As each leg is extended forward in turn, it is straightened and raised so that the foot is about knee high from the ground.

(5) 1. EXTEND LEGS WAIST HIGH, 2. MARCH. As each leg is extended forward in turn, it is straightened and raised so that the foot is waist high from the ground.

(6) 1. RAISE HEELS, 2. MARCH. As each foot is planted in turn, the body rises on that foot so that its weight is momentarily supported on the toes of that foot. The motion is a springing or bouncing action. This exercise may be performed at the double time.

(7) 1. RAISE KNEES, 2. MARCH. As each leg is extended forward in turn, the knee is bent and raised as high as possible. This exercise may be performed at the double time.

(8) 1. CIRCLE LEGS FORWARD, 2. MARCH. As each leg is extended forward in turn, it is circled around to and across the front of the body, knee high, leg straight.

(9) 1. TOES INWARD, 2. MARCH. The feet are turned inward in a "pigeon-toes" manner. This is an excellent arch strengthening exercise.

(10) 1. ON ANKLES, 2. MARCH. Turn the feet so that the weight of the body is supported on the outer edge of the soles of each shoe and march with the feet thus turned. The toes remain pointed straight ahead. This is an excellent arch and ankle strengthening exercise.

(11) 1. CROSS STEP, 2. MARCH. As the legs are extended forward in turn, they are crossed in front of the body. The body does not turn. This exercise may be done at the double time.

(12) 1. CONTINUOUS CHANGE STEP, 2. MARCH. The left foot is advanced and planted; the toes of the right are then advanced near the heel of the left and planted; the left foot is then advanced about half a step (15 inches) and the right foot is advanced with the full step and planted; the toes of the left foot are then brought up to the heel of the right foot, which advances a half step, when the left foot is advanced a full step, etc.

(13) 1. KNEE-ROCKING STEP, 2. MARCH. As each foot is planted, it is accompanied by a slight bending and the straightening of the corresponding knee, the other leg remaining fully extended, heel raised.

(14) 1. LUNGING STEP, 2. MARCH. The length of the step is 45 inches, the knee in advance being well bent, the other leg remaining fully extended, heel raised; trunk erect.

(15) 1. CROSS STEP, RAISING KNEES, 2. MARCH. Execute the

cross step and raise the knees. The cross step may also be executed in combination with the swings of the extended leg.

(16) 1. CONTINUOUS CHANGE STEP HOP, 2. MARCH. Execute the ordinary change step, hopping with the change.

(17) 1. FORWARD GALLOP HOP, 2. MARCH. The left foot is advanced and planted; the right foot is brought up in rear and planted; this is done four times in succession. The same is done four times with the right foot in advance, etc.

(18) 1. HANDS ON SHOULDERS, 2. PLACE, 3. EXTEND ARMS UPWARD AND RISE ON RIGHT (LEFT) TOE, 4. MARCH.

(19) 1. HANDS ON HIPS, 2. PLACE, 3. SWING EXTENDED LEGS FORWARD, BREAST HIGH, AND EXTEND ARMS ON SAME SIDE FORWARD, 4. MARCH. The foot and hand come in contact.

(20) 1. TO THE SQUATTING POSITION, HANDS ON HIPS, 2. BEND, 3. IN THAT POSITION, FORWARD, 4. MARCH.

(21) 1. TO THE SQUATTING POSITION, HANDS ON THE GROUND, 2. BEND, 3. "BEAR WALK", 4. MARCH. The hand and foot on the same side move forward simultaneously.

(22) 1. TO THE SQUATTING POSITION, HANDS ON THE GROUND, 2. BEND, 3. "KANGAROO HOP" FORWARD, 4. MARCH. The hands are moved forward, followed by the feet, in a series of short hops.

c. The following setting-up exercises listed in paragraph 74 may be performed while marching: (The first six exercises may be performed at the double time.)

(1) Setting-up exercise, paragraph 74a(1).

(2) Setting-up exercise, paragraph 74a(2).

(3) Setting-up exercise, paragraph 74a(3).

(4) Setting-up exercise, paragraph 74a(6).

(5) Setting-up exercise, paragraph 74a(8).

(6) Setting-up exercise, paragraph 74a(10).

(7) Setting-up exercise, paragraph 74d(4).

■ 76. PERSONAL CONTESTS.—There are many personal contests suitable for use in physical training. The instructor should not hesitate to use others, not listed.

a. *Indian wrestling*.—Contestants lie upon the ground face up, right shoulders in close contact, right elbows locked; at one, the right leg is raised overhead and lowered; this is repeated at two; and at three the leg is raised quickly and

locked with the opponent's right leg. The object is to roll the opponent over by forcing his leg down (fig. 128).

*b. Back-to-back lift.*—Place two contestants standing back to back with elbows linked. At signal, each, by pulling and bending forward, attempts to lift the other off the floor. Either contestant lifted off the floor loses the bout. Three

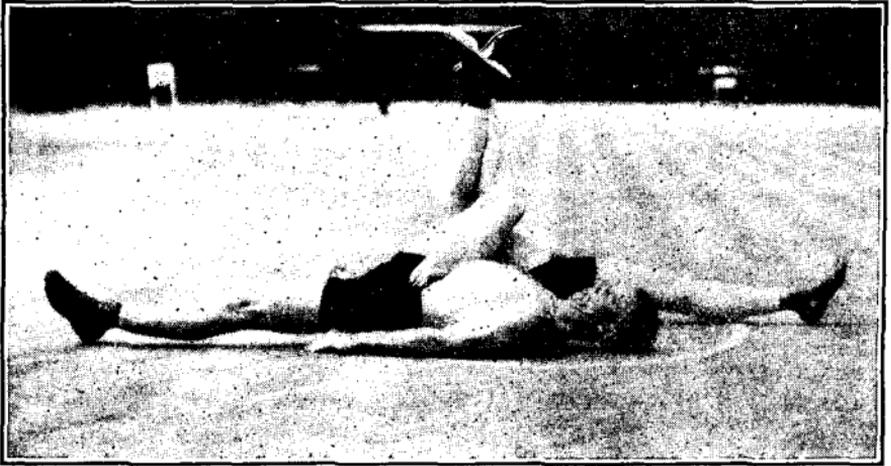


FIGURE 128.

bouts constitute a match. The contestant successful in two is the winner.

*c. Back-to-back push.*—Place two contestants standing back to back with elbows locked. Establish a line 10 feet in front of each contestant. At signal, each, by pushing backward, attempts to push the other over his (the opponent's) base line. The contestants are not allowed to lift and carry their opponents—pushing only is permitted. Either contestant pushed over his own base line loses the bout. Three bouts constitute a match. The contestant successful in two is the winner.

*d. Back-to-back tug.*—Place two contestants so they stand back to back with both arms linked at the elbows. Establish a line 10 feet in front of each contestant. At signal, each contestant attempts to drag the opponent over his base line. Lifting and carrying of the opponent are permitted. The contestants must maintain their original positions with arms

linked. Either contestant carried across his opponent's base line loses. Three bouts constitute a match; the contestant successful in two wins.

*e. Drake fight.*—Place two contestants facing each other at a distance of 4 feet. Have each contestant lean forward and grasp his ankles with both hands. At signal, each moves forward and by butting, shouldering, and sidestepping, attempts to compel the other to fall over or release his hands. Either contestant falling over or releasing either hand loses the bout. Three bouts constitute a match; the contestant successful in two wins.

*f. Hand wrestle.*—Place two contestants so they stand with feet firmly spread in the stride position, each contestant with his right foot forward, touching the outside of his opponent's right foot. Have the contestants grasp right hands. At signal, each attempts by pulling, pushing, turning and twisting of hands, to overbalance his opponent or compel him to move either foot from its original position. The left hand must not be used against the opponent. Either contestant forced to touch the ground with any part of his body other than his feet, or forced to move either foot loses the bout. If the contestants break their grasp, they rejoin hands at once. Five bouts constitute a match; the contestant successful in three wins.

*g. One-man pull.*—Place two contestants so they face each other at a distance of 3 feet. Establish a line 10 feet in back of each contestant; the line in back of each contestant is that contestant's base line. Have each contestant grasp his opponent's two wrists with his own hands. At signal, each contestant attempts to pull his opponent back across his base line. Either contestant pulled across his opponent's base line loses. The contestants must not grasp each other except by the hands and wrists. In case the hands become separated they should be rejoined as in the beginning, at the point of separation. Three bouts constitute a match; the contestant successful in two bouts wins.

*h. One-man push.*—Place two contestants so they face each other at a distance of 3 feet. Establish a line 10 feet in back of each contestant; the line in back of a contestant is

that contestant's base line. Have each contestant place his hands on the shoulders of his opponent. At signal, each contestant attempts to push his opponent back across his opponent's base line. Only straight pushing is allowed. Either contestant pushed across his own base line loses the bout. Three bouts constitute a match; the contestant successful in two wins.

*i. Roman wrestle.*—Two teams of two players each take part in this contest. Have one player of each team sit astride the hips of the other player and lock his feet in front. Place the two "horses" facing each other at a distance of 5 feet. At signal, the two "horses" move forward so that the "riders" can reach each other. Each "rider" attempts to overthrow his opponent. The "horses" are not allowed to help the "riders" in any way nor to interfere with each other. Their only duty is to hold the "riders." The "riders" are allowed to use all fair wrestling tactics; they are not allowed to interfere with the "horses." Either "rider" forced to touch the floor in any way, either forced down from his "horse" or overthrown with his "horse," loses. If the two "riders" go down together, the one touching the floor first loses. Three bouts constitute a match; the contestant successful in two bouts wins.

*j. Rooster fight.*—Place two contestants so they stand facing each other at a distance of 5 feet. Have each stand on the right foot, clasp the left foot with the left hand, place the right arm across the front, and clasp the biceps of the left arm. At signal, each contestant hops forward and attempts by bucking, side-stepping, etc., to overthrow his opponent or compel him to release his grasp on the upheld foot. The contestants are not allowed to use their left hands against each other. Either contestant committing any of these acts loses the bout. If both contestants commit any of them on the same occasion, the one doing so first loses the bout. Five bouts constitute a match; the contestant successful in three is the winner.

■ 77. GROUP GAMES.—The group games listed in this manual are classified as relay games, circle games, and miscellaneous games. There are many games which are not listed and the

instructor should not hesitate using others or making variations in the ones given.

■ 78. RUNNING RELAY GAMES.—*a. Lane Method.*—(1) *Medicine ball relay.*—Equipment needed: One medicine ball for each team participating. (Any kind of ball or similar object can be used in place of the medicine ball.) Formation: Column of files about 10 feet apart, each made up of an equal number of men. Players stand in the stride-stand position with the ball on the line in front of the first contestant. The man at the head of each column should be indicated in some well-defined way, such as wearing no olive drab shirt. At the start the ball is rolled back (or object passed) between the legs of the contestants in the column until it reaches the back of the column. There it is picked up by the end man who carries it forward on the left (or right) side of his column to the distance line, which he must touch. He then returns to the front of his column where he faces about and starts the ball (or passes the object) back between his own legs toward the back of the column where it is picked up by the last man who repeats the performance of the preceding last man. After every man has carried the ball forward, the last man finishes the race when he crosses the distance line.

(2) *Sprint relay.*—No equipment needed. Formation: Column of files. The first man of each column runs to (or around) a given point and returns to starting line, where he hands baton (belt, handkerchief, stick, or any other small object) to the second man of his column. The second man repeats the run and brings baton back to third man. Continue in like manner until all men have run. Men fall in line in order at the foot of their respective columns immediately after finishing their runs. Men must receive baton at, or back of, starting line. The last man of each column should be indicated in some well-defined way.

(3) *Down-and-up.*—No equipment needed. Entire team spreads legs at signal. First man in column passes some object between his legs to next man, who passes it on. Last man in column yells "down" when he gets the object, and with legs astraddle runs forward over the other men who have

crouched to the ground. When he reaches the front of the column, the other men rise and the object is passed back between the legs, etc., until all have taken it forward.

(4) *Obstacle race*.—Equipment needed: Natural obstacles, etc. Obstacles of all kinds are placed in front (things to crawl under, jump over, vault, climb through, or run around). First man makes circuit and finishes at starting line. Second man receives baton and repeats, and so on.

(5) *Centipede relay*.—Equipment needed: One tent pole or broomstick for each team competing. Two men get astride a pole held by both hands or both men (one hand in front and one hand in back). They run forward to, or around, a given point and return to the starting point, where they drop the stick. The next two men pick up the stick, adjust it in the same way, and proceed. This race may be modified by using a larger number of men on the stick.

(6) *Wheelbarrow race*.—No equipment needed. First man walks on hands, second man carries the feet of the first man. Advance to given point (about 30 feet in front). At this point men change positions (second man walking on hands, first man carrying feet of second man), and return to starting line. After first two men cross starting line the next two men start as described, and so on.

(7) *Overhead ball relay*.—Equipment needed: One medicine ball for each column. Players stand at attention with the ball on the line in front of the column. At the starting signal the ball is passed back over the head by the first man to the second, and so on until it reaches the last man. (Every man in the column must grasp and pass the ball.) The last man carries the ball forward over the backs of the men in the column in front of him who assume a stooping position. As soon as he reaches the front of the line he runs to the distance line and, after touching it, returns to the front of the column and starts the ball back over his head. After every man has carried the ball forward, the last man finishes the race when he crosses the distance line.

(8) *Pig-a-back relay*.—No equipment needed. Players stand at attention. At the signal to start, No. 2 in the column leaps upon the back of No. 1, who carries him across the dis-

tance line in pig-a-back fashion. There he drops him. No. 1 remains behind the distance line. No. 2 rushes back and picks up No. 3 in the column and carries him beyond the distance line and No. 2 remains there. No. 3 rushes back and picks up No. 4, and so on. When the last man in the column has been carried across the distance line, the race is finished.

(9) *Football passing relay*.—Equipment needed: One football for each column. Each ball is placed on the starting line in front of the column. Players assume a stride-stand position. At the signal to go, the ball is passed from man to man. Each man must catch and pass the ball back between his legs until it reaches the last man in the column, who rushes forward across the 25-yard distance line. From that position he makes a forward pass to the front man in the column and runs to the front of the column. The front man upon catching the ball starts it back, passing it between his legs, until it gets to the rear of the column. The end man carries it forward and repeats the performance of the man who preceded him. The race ends when the last man in the column throws the ball back from beyond the distance line. The ball first crossing the starting line determines the winner.

(10) *In-and-out*.—Equipment needed: Medicine ball, basketball or similar ball. Players stand in the stride-stand position with the ball on the line in front of the first contestant. At the starting signal, the ball is rolled back between the legs of the men in the column until it reaches the back of the column where it is picked up by the end man who runs forward to the right of the man in front of him, to the left of the second, to the right of the third, etc., until he has reached the front line, whereupon he runs to the distance line which he touches. Returning to the front of the column, he starts the ball back between his legs. When each man has carried the ball forward, the last man finishes the race when he crosses the distance line.

*b. Shuttle method*.—(1) *Rescue relay*.—No equipment needed. Each team is divided, one half in column of files at the starting line, the other half lying on their backs on line 20 yards in front. At a signal, the first man of each team at the starting line runs to first man lying down, picks him up,

and carries him to the starting place. Second man starts as first crosses the starting line. The team that gets all its men across starting line first wins the race.

(2) *Runs*.—Sprint relays of 50, 100, and 220 yards for each man, using the shuttle method, make very interesting relay races. Hurdle races and obstacle races of all kinds may be conducted using the shuttle method.

*c. Circle method*.—(1) *Six-day bicycle race*.—Equipment needed: Four sticks for corner posts. Stake off field at four corners so that running about stakes will represent a track. Players are paired off, each pair representing a team. Players line up across track after drawing for places. At signal, one player mounts hips of his partner who runs forward around track. Players may exchange places (as rider and horse) at will, and as often as they like. Race may be made two laps, three laps, four laps, or more in length, depending on the distance around the track. Two hundred yards represents a good race.

(2) *Pursuit relay*.—A circular track from 40 to 60 yards in length is required for this race. Place the teams at starting points equally distant around the track. At signal, the first runner of each team, carrying a baton, runs forward around the track. On completing one lap, each runner passes the baton to the next player on his team; this runner repeats. Any runner catching up to and tagging another runner puts the tagged runner and his team out of the race. (The runner so tagged should withdraw from the track at once.) The race continues in this way until one team is left; this team wins the race. If the relay is not decided by the time all of the players on a team have run, the players run again and again in their regular order until it is decided.

■ 79. JUMPING AND THROWING RELAY GAMES.—Either the shuttle or accumulative method may be used in conducting the following relays.

*a. Jumps*.—(1) Standing broad jump.

(2) Running broad jump.

(3) Standing hop, step and jump.

(4) Running hop, step, and jump.

- b. Throws.*—(1) Shot put.  
 (2) Baseball throw.  
 (3) Basketball throw.  
 (4) Medicine ball throw.  
 (5) Football throw (or kick).

■ 80. **CIRCLE GAMES.**—*a. Games which do not require equipment.*—(1) *Three deep.*—Formation: Double circle facing in, the outside circle covering off the inside circle. Each pair should be 6 feet apart. One man is "it". "It" chases another man, who may jump in front of any one of the men in the inside circle. He is then safe. The player in the rear of the one he jumped in front of is then the third party and "it" must chase him. The player being chased and "it" must keep on the outside of the circle except when jumping in front of player in inside circle. Player when tagged becomes "it" and must chase the one who tagged him.

(2) *Bull in the ring.*—No equipment needed. Formation: Group forms in a circle holding hands. One man who is termed the "bull" is placed in the center. If there are more than twenty men in the ring have two "bulls". The "bull" tries to break out by charging the ring so the clasped hands are forced apart. If the "bull" gets out the players try to catch him. Player successful in catching the "bull" becomes "bull" and game continues.

(3) *Milling the man.*—No equipment needed. Formation: Groups of about fifteen men form small circle sitting close together facing in. One man is "it" in circle. With arms to sides, he stiffens his body and simulates a dead man falling; men in circle prevent his falling to ground, pushing him back and forth. If he falls, the man responsible becomes "it." Body must be kept rigid to get best results.

(4) *Circle tag.*—Formation: Draw a circle about 4 feet in diameter on the ground. Players form a ring facing in about circle with arms about shoulders. At signal, the players attempt to draw other players into circle. Any player who steps into circle withdraws from game. Game continues until only a few men are left.

(5) *Master of the ring* (15 to 30 players).—Establish a circle 12 feet in diameter. Place all of the group inside the circle.

Have each player fold his arms across his breast. At signal, each player attempts to push the others out of the circle. Any player touching the ground outside of the circle, falling to the ground, or unfolding his arms is eliminated and withdraws from the contest. The elimination continues until but one player remains; this player is the winner.

*b. Games requiring equipment.*—(1) *Swat to right.*—Equipment needed: One or more soft swatters. Formation: Circle, facing in, shoulder to shoulder, hands behind back. One man, carrying swatter, runs around outside of circle and places the swatter in someone's hand. The man receiving it immediately hits the man at his right. The man who is hit runs around the circle until he is back to his starting position. The player with the swatter follows runner and swats him until he is in position. The player with the swatter then runs on and places the swatter in some other player's hand. The game can be varied by the use of two or more swatters simultaneously.

(2) *Mount ball.*—Equipment needed: Any ball similar to a basketball. Formation: Double circle, facing in; players of inside circle 4 feet apart, outside circle covering off inside circle. Outside circle are "riders", inside circle are "horses." Riders mount on hips of horses. Horses must hold riders firmly. Riders pass medicine ball about; horses endeavor to make riders drop ball. Horses must stay in place (shaking, sidestepping, wriggling, etc., are methods which may be used to make riders drop ball). Horses become riders and all riders become horses whenever any rider drops the ball. Heavy men should be paired together in this game.

■ 81. MISCELLANEOUS GAMES.—*a. Games which do not require equipment.*—(1) *Marching tag.*—Two base lines 50 feet apart. The group is broken up into two units. These units form in line behind their base line facing each other. Unit No. 1 marches forward in this formation and continues so to march until a whistle is blown. The whistle is the signal for unit No. 1 to break ranks and run back to their base line before the men forming unit No. 2 can tag them. No. 2 men must stand at attention until the whistle is blown. Every man tagged before crossing his base line must line up with unit

No. 2. Unit No. 2 then marches forward until a whistle is blown, and is chased back behind its base line by unit No. 1. The line having the largest number of players after an equal number of trials wins the game.

NOTE.—The officer in charge should judge distances carefully, and should gradually permit the marching line to approach closer and closer to the tagging line before blowing the whistle. The marching distances should be as nearly as possible the same for both teams. A good modification of the game is to have the tagging line stand with their backs toward the marching line, thereby necessitating a quick turn around.

(2) *Human tug-of-war*.—Formation: Column of files facing each other. Players stand close together, arms placed about waists of men in front (grasping left wrist with right hand is the strongest grip). Leading man of each team grasps opponent about neck and shoulders. Team breaking first or having one or more men pulled over the line separating the two teams after 30 seconds is the loser.

(3) *Circle race*.—Formation: Players distributed around a track equally distant apart (10 or 30 feet, varying with the number playing). At signal, each player runs forward trying to pass on the outside of the runner next in front of him, tagging as he passes. Any player tagged in this way drops out of the race. The tagger runs forward to tag the man next to his front, etc. Race continues until all are out but one.

(4) *Follow the leader*.—Formation: Column of files. Place someone who is more or less athletic in the lead. He starts off at a dog trot, the men following. The leader undertakes any reasonable hazard he can find, such as jumping ditches, vaulting fences, clambering over tree limbs, etc. Men who fail to do anything that the leader sets drop out. If the leader fails on anything he attempts, he is forced to withdraw. Only one attempt is allowed at a hazard. Game continues until all are out but one. The officer in charge should change leaders occasionally.

(5) *Paul Revere*.—Team strings out in column across field, 5 yards between men. One rider stands at the rear of the column. At the signal, the rider mounts astride the hips of the last man, who carries him forward to the player immediately in front of him. The rider is here transferred

to the back of the second man. Transfer must take place without permitting the rider to touch the ground. Failure to do this disqualifies. Player at head of column carries the rider forward to a given point.

*b. Games requiring equipment.*—(1) *Caterpillar race.*—Equipment needed: As many (tent) poles 12 feet long and 1½ inches thick as there are squads in the company. Each squad will straddle the pole and grasp it with both hands, No. 1 of each squad on starting mark. At starting signal, each squad will run to finish line which should be about 75 yards away. Any man letting go of pole with either hand disqualifies his squad.

(2) *Rope tug-of-war.*—Equipment needed: One 1½-inch rope (60 to 150 feet) varying in length with number competing. Formation: Competing platoons line up facing the center along the rope. A handkerchief or piece of adhesive tape should be securely wrapped around middle of rope. A well defined line should be marked parallel to starting line and 6 feet from it on either side. The rope should be laid on the ground with the middle tape on the starting line. All contestants stand along rope not nearer than 8 feet to center tape, with hands raised over their heads, thumbs locked. At starting signal, men pick up rope and pull. Team pulling middle of rope over its own 6-foot line wins. If neither team has pulled middle of rope over its 6-foot line at expiration of 2 minutes, the team having middle of rope on its side of starting line wins. No knots or loops may be made in the rope excepting that the anchor (end man) on either team may wrap rope around his body. Holes may not be dug in ground with feet or otherwise until after starting signal is given.

NOTE.—In competitive meets, team winning two out of three pulls wins the match.

(3) *Medicine ball gap throw.*—Equipment needed: Medicine ball and two ropes. Formation: Two ropes are placed parallel about 20 feet apart. Men are arranged in column facing the parallel ropes, with the leading man of the column a short distance from the rope nearer the column. First player hurls ball across intervening gap. Style of throw

should be stipulated before the beginning of the contest. All must throw alike. The other players follow until all have thrown. Gap is widened. Players throw again. Players failing to make a successful throw are eliminated. Elimination continues until winner is decided. Only one throw is allowed at each distance.

(4) *Cage ball*.—Equipment needed: Cage ball, two goals. Cage ball is a game for large groups. As many as 400 men can play at one time. It is not essential to have large groups for as few as 20 players on a side make a good match. Fifty to one hundred on a team make the best match, however.

(a) The playing field is 140 feet long and 100 feet wide. The cages, one at either end of the field, are 10 feet above the ground, 30 feet long, and about 4 to 6 feet wide. These cages (or goals) are erected 10 feet inside the goal line.

(b) To start the game, the ball is placed in the middle of the field and the two teams are lined up facing each other about 20 feet apart. The referee then explains the few important rules to each team. The two captains advance to the center of the field and take hold of the ball. When the referee blows the whistle and the game begins; the two captains struggle for possession of the ball and two teams rush for the ball. The object of the game is to get the ball into the opponent's cage, by battling, punching, or throwing it.

(c) Players are not allowed to kick or run with the ball, crowd or shove when the ball is on the ground, or touch the cage. (Penalty for breach of these rules: The ball is given to the offended team 30 feet from, and directly in front of, the opponent's cage. The penalized team may line up 10 feet in front of the ball. The referee's whistle continues the game from this position.)

(d) When the ball goes out of bounds, play need not stop unless the referee thinks that it is too far away to make scoring possible. When the referee decides that the ball is too far away from the playing field, he brings it in to the side line and throws it into the air 20 feet inside the line. Four assistant umpires may stand on the boundary lines

of the field and decide all plays when the ball goes out of the field proper.

(e) One point is scored for each goal. The game lasts for one period of 30 minutes unless otherwise agreed upon.

(5) *Mass soccer football.*—(a) Soccer football, when played properly, according to the rules, requires much the same team work and passing as basketball except that the ball is kicked and advanced by the use of the feet, body and head, rather than by the hands as in the case of basketball. However, when the time for practice is limited, and when it is desired that large groups of men play, it is advisable to do away with all rules except the following:

1. No player except the goal tender should be allowed to pick up the ball, carry it, throw it, or hold it in his hands or arms.
2. No player should be allowed to kick, trip, hold, or rough another player at any time. (For a breach of these rules the offender is put out of the game and his team penalized by giving the ball to his opponents for a free kick at the point where the offense was committed.)

(b) The best sized soccer field is about 60 yards wide and 100 yards long. The goal posts, erected in the ends of the field, are 24 feet apart and the cross bar 8 feet above the ground. The game can be played without goal posts, scoring in this case when ball goes over end lines.

(c) Twenty-five or more men on each side make a good game. The players on one side roll up their sleeves. For convenience these are named "whites", while those with their sleeves down are named "browns," or one side can take their shirts off and the other side leave them on.

(d) The game is begun by the winner of the toss choosing the goal and kicking the ball from the ground from the middle of the field. After the kick-off, players may move anywhere on the field and are eligible to play the ball. After a score, the ball is kicked off by the losers from the center of the field.

(e) To score a goal, where goals are erected, the ball must pass under the cross bar between the uprights. This counts

five. If the ball goes over the end line outside the goal, it counts one.

(f) When the ball goes out of bounds, that is, across the side lines, the first player recovering it may put it in play again by kicking it from the point where it went out. Player putting ball in play again from out of bounds is not permitted to kick it over goal line for a goal.

NOTE.—From 100 to 500 men may participate in a game at one time by the simultaneous use of from four to eight balls (depending upon the number playing). Any ball which crosses a goal line is immediately dead and out of play. The game continues until all the balls are dead and out of play. The team scoring the largest aggregate number of points wins. There should be a referee for each ball.

(6) *Volley ball*.—Court: The playing surface is not more than 35 feet wide and 60 feet long. A net is stretched across the entire width of the court at the middle. The top of the net is 8 feet from the ground. Number of players: Team may consist of 20 or more players; 12 to a side makes a good number. The two teams line up on opposite sides of the court facing each other. A coin is tossed. The winner of the toss "serves" the ball. The object of the game is to volley the ball over the net to your opponents, so that it will hit the ground inside their court. If the side serving lands the ball safely within opponents' court; or if, after making a legitimate serve, its opponent fails to return the ball legitimately, one point is scored for the side serving. Only the team serving can score. If the team serving fails to land the ball in opponent's court, or if it fails legitimately to return the ball to the opponent's court, the side serving loses its serve and the other team serves. The player serving continues to serve until his team loses the serve. When his team again gets the serve, some other player will serve. Each player must take his turn serving. The ball may be batted with one or both hands, but it must not touch the ground or go out of bounds. The ball may be played by any number of players before being batted over the net but no player shall play the ball twice in succession. A ball served into a net counts against the server. Any other ball may be played off the net. No player shall dribble the ball, hold it, catch it, or reach over the net to strike the ball. The first team to score 15 points is the winner.

(7) *Wrestle royal*.—Divide the group into two teams of equal numbers. Place the two teams in separate lines 15 feet apart, facing each other. Mark one team plainly, so both can be readily distinguished. At signal, both teams move forward. The players of each team attempt to throw their opponents so they (opponents) touch the ground with some part of the body other than their feet. Any player touching the ground in this way, from any cause whatsoever (accident, compulsion, or free will) is eliminated and withdraws from the field. Any number of players from one team may wrestle against any number of the opposing team; in other words, two, three, or more, may attack one. A player may throw any number of other players. If a player in going down drags an opponent with him both are eliminated. Once a player is down though, he should stop wrestling. The wrestling continues until all of one team have been thrown; the other team is the winner.

(8) *Military events*.—There are many purely military events which may be included in this part of the training program. Such events include tent pitching contests, clothing (undressing and dressing) races, equipment races, grenade throwing, and gun drills.



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