

A HANDBOOK OF INSTRUCTION FOR PHYSICAL TRAINING
INSTRUCTORS BASED UPON THE SELECTED PROGRAM
IN PHYSICAL TRAINING FOR THE 308TH COLLEGE
TRAINING DETACHMENT (AIRCREW) AT TEXAS
AGRICULTURAL AND MECHANICAL COLLEGE

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THESIS

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By

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CHAPTER I

INTRODUCTION TO THE STUDY

Military leaders have long recognized that the effectiveness of fighting men depends largely upon their physical condition. World War II offers no exception to this fact: though it is a mechanized war, the machines are no better than the men who are operating them. The soldier of this war has to march long distances through jungles and over mountains, drive fast-moving vehicles over rough terrain, fly planes at high altitudes and do dive-bombing work, engage in hand-to-hand fighting, and keep on the alert day after day and night after night without sleep. In order to engage in these activities with a high degree of skill, strength, and endurance, the soldier must be superbly trained and conditioned physically.

The Army Air Forces saw fit to set up College Training Detachments throughout the United States to better prepare its potential navigators, bombardiers, and pilots in military science, academic training, and physical fitness. The necessary instruction books for the instructors of the military and academic training phases of the program were readily available. While the Army issued a framework of regulations governing the physical training program at the College

Training Detachments, there were no instruction books for the physical training instructors. The lack of an available instruction book presented a difficulty to the director of the physical training program due to the fact that civilian instructors were used to conduct the program. There was a distinct need for material that would acquaint the civilian instructor with the more comprehensive, intensive, and rigorous program and procedures of the Army and to insure the proper conduct of the accepted program. The writer, who was director of the physical training program of the College Training Detachment at Texas Agricultural and Mechanical College, was aware of this need and took action to meet it.

Statement of Problem

Therefore, the present study was undertaken to write a handbook of instruction for physical training instructors based upon the selected program in physical training for the 308th College Training Detachment (Aircraft), Texas Agricultural and Mechanical College, College Station, Texas.

Purpose of the Study

The purpose in writing the handbook of instruction is two-fold:

1. To provide physical training instructors with essential and functional information concerning the aim, objectives, activities, and procedures for the administration and conduct of the selected

physical training program of the 308th College Training Detachment at Texas Agricultural and Mechanical College.

2. To obtain uniformity in the conduct of the physical training program by various instructors.

Definition of Terms

The term, Handbook, is used to denote a manual of concise information to be used as a guide by those who are responsible for the administration and conduct of the physical training program of the 308th College Training Detachment at Texas Agricultural and Mechanical College.

Limitations of the Study

The handbook of instruction is limited to information concerning the selected program in physical training for the 308th College Training Detachment, Texas Agricultural and Mechanical College, which included young men from seventeen to twenty-seven years of age.

Sources of Data

The documentary sources of data for the study were bulletins, memoranda, regulations, and circulars sent out by Higher Military Headquarters; books in the field of physical training; and statistics based on activities of aviation students.

The human sources of data were experts in the field of health and physical training and the actual experience of the

author, who has been permitted to survey the training of a pilot from his entrance into the army until he gets his wings and his commission.¹

Survey of Other Studies

As far as the author has been able to ascertain, no previous study has been made which attempts a comparable study of the same field.

Procedures

The procedures that were used to develop the study were:

1. The aims and objectives of the program were formulated.
2. Criteria were formulated for the selection of the contents of the program.
3. Activities for the program on the basis of the criteria were selected.

¹The author graduated from North Texas State Teachers College with a major in Physical Education. He then served as Director of Health and Physical Education in a public high school for five years. At the end of the five years, he entered the army air corps where he had extensive contact with the methods now in use by the army's physical training program. He served as Physical Training Director for cadets at Randolph Field (Basic), Texas, and Physical Training Director for cadets at Lake Charles Army Air Field (Advanced), Lake Charles, Louisiana. From Lake Charles Army Air Field he was sent to Physical Training Officers Candidate School at Miami Beach, Florida. After graduating from this school, he was sent back to Randolph Field (Basic); and then was stationed at San Antonio Aviation Cadet Center (Pre-flight) for six months. Later he was sent to Texas Agricultural and Mechanical College as Physical Training Director for the aviation students of the 308th College Training Detachment.

4. The facilities and equipment needed and available were determined.
5. Principles were formulated to serve as guides to procedures.
6. Teaching methods were determined.
7. The handbook of instruction was written.

CHAPTER II

DESCRIPTION OF THE SITUATION

The foundation of the College Training Detachments was laid by military contractors and officials of the various schools selected for this type of training. At Texas Agricultural and Mechanical College where the 308th College Training Detachment was located the contract called for the housing, messing, academic instruction, and physical training of one thousand students for a period of five months. The instructors for the various phases of this program were to be provided by the institution.

Before the students arrived at the college, the Air Corps assigned and sent eleven officers whose duties were to discipline, to see to the welfare of the men, and to cooperate with civilian officials in setting up and administering the program. Among the officers were specialists in the following fields:

1. Academic Training
2. Military Training
3. Physical Training
4. Military Administration

These officers were charged with the responsibility of supervising the activities in their respective fields. This

was done in order that the objectives desired by military authorities would be achieved.

The one thousand students assigned to the 308th College Training Detachment were divided into five squadrons with two hundred men to each squadron. The flow-chart was so arranged that the Detachment graduated one squadron each month and, in turn, received a new squadron a few days later. The squadrons were housed in five centrally located dormitories with one squadron to each dormitory. One centrally located mess hall was provided for the messing of all the students. The students were assigned to the College Training Detachment for a period of eighteen weeks. Their program of instruction which consisted of academic, military, and physical training, began immediately upon the students' assignment to the Detachment and continued progressively and uninterruptedly throughout the eighteen weeks. The men within each squadron followed a definite schedule.

The program was set up in such a manner that the students attended academic classes from eight until twelve and from one until three o'clock. From three until four o'clock two squadrons participated in physical training while the other three squadrons were taking military training. From four until five o'clock the situation reversed with three squadrons participating in physical training while the other two squadrons were engaged in military training.

A plan was evolved at Higher Headquarters to insure the

proper conduct of the physical training program according to Army Air Forces standards in College Training Detachment. Under this plan, each College Training Detachment was assigned an officer especially trained in physical training and military service to be familiar with the physical training policies desired by Military Authorities. The author was assigned to the Detachment at Texas Agricultural and Mechanical College as Physical Training Director because he had the qualifications stated above. It was desired by Higher Headquarters that he be assigned in a capacity that would enable him to advise the civilian instructors, to supervise the regularly scheduled physical training periods, and to keep the Commanding Officer informed on matters pertaining to the physical training program.

Seven civilian instructors were used to administer the physical training program. Two of these instructors taught swimming while the other five instructors taught the other activities of the program. Each of the five instructors was assigned a particular squadron. He was to teach physical training to this squadron at a regularly scheduled hour each day for six days each week. At another hour he was to assist one of the other four physical training instructors.

Each student was required to take physical training for one hour each day, six days per week at a definite, scheduled period. An intramural program was carried on during the student's free hours. The student was not required to take

part in the intramural program, but could do so of his own volition.

The facilities and equipment that were made available in order to carry out the selected activities of the physical training program were:

1. Ample ground space.
2. Field for shuttle-run.
3. Chinning bars.
4. One wooden stand six feet in height, six feet in length, and six feet in width.
5. Two stop watches.
6. Testing cards.
7. Eight-tenths mile dirt road.
8. One and six-tenths mile dirt road.
9. One four hundred forty-yard cinder track.
10. A large drill field for wind sprints.
11. One pistol with ample number of shells.
12. One finish string.
13. Five batons.
14. One set of high jump standards with cross bar.
15. One twelve-pound shots.
16. One public address system.
17. One in-door basketball court.
18. Twenty-seven out-door basketball courts.
19. Twenty-eight basketballs
20. Thirteen touch-football fields.

21. Sixteen footballs.
22. One large drill field.
23. One solid wall, eight feet in height.
24. One hand-over-hand apparatus, which is a pipe two inches in diameter and twenty feet in length. The pipe is supported by posts which are ten feet in height.
25. One concrete culvert three and one-half feet in height and thirty feet in length.
26. One straddle-run, which is made of boards, thirty feet in length and twelve inches in width. The boards are slanted at a forty-five degree angle and are supported eighteen inches above the ground by wooden posts.
27. One rope-swing apparatus. Two posts twenty feet in height are placed near the edge of a pit. The pit is three feet in depth. The posts are fifteen feet apart. A heavy pipe is attached to the tops of the posts. Four ropes, equidistantly placed, are tied to the pipe so that the ends of the ropes come within six feet of the ground.
28. One trench, seven feet in width, twenty-five feet in length, and four feet in depth.
29. Three low bars, twenty-five feet in length, which are supported by posts three and one-half feet in height. The low bars are placed five feet apart.

30. One bear trap, fifteen feet in width, five feet in height, and twelve feet in length. The trap is in the form of a rectangle, and is made of interlocked boards.
31. One log fence, five feet in height.
32. One checker-board run, fifteen feet in width, twenty feet in length, and constructed of six inch logs. The logs are criss-crossed at a distance of two feet.
33. One inverted "V" ladder, eight feet in width, seven feet in height at the apex, with the base twelve feet in length.
34. One over-under-over apparatus. The over obstacle is made of one log, fifteen feet in length, which is supported by two posts, five feet in height. The under obstacle is made of one log, fifteen feet in length, which is supported by two posts, two and one-half feet in height.
35. Four wooden hurdles, three feet in height.
36. Ample gymnasium or ground space for mats.
37. Four large mats.
38. One hundred ropes, six feet in length.
39. Fifteen out-door volleyball courts.
40. Five sheltered volleyball courts.
41. Twenty volleyballs.
42. Two regulation softball diamonds.

43. Twenty softball gloves.
44. Two catcher's masks.
45. Twelve softball bats.
46. Approximately twelve softballs.
47. One tile swimming pool, one hundred feet by sixty feet, equipped with two diving boards.

CHAPTER III

PHYSICAL TRAINING PROGRAM FOR THE 308TH COLLEGE TRAINING DETACHMENT

The aim of the physical training program in the College Training Detachment was to develop in the student that state of physical fitness and mental alertness which is essential to, and required for, military effectiveness. When the student entered the College Training Detachment his degree of physical fitness was below that which is necessary for him to possess as he faces actual situations in military service. His muscle coordination, agility, endurance, strength, flexibility, posture, and general well-being had to be improved. It was necessary that he develop the ability to work and cooperate with others, to learn to think quickly, to be aggressive, and to overcome a variety of physical obstacles under trying conditions. Thus the objectives of the physical training program were:

1. To strengthen the muscles.
2. To improve muscle coordination, flexibility, agility, posture, and general well being.
3. To contribute to organic efficiency.
4. To develop endurance.
5. To improve balance and sense of direction.
6. To discipline.

7. To develop skills in manipulating the body.
8. To enable the student to stay afloat in water for an indefinite period of time.
9. To develop quick thinking and timing.
10. To develop aggressiveness.
11. To develop through team play the ability to cooperate with others.
12. To develop good morale

Of necessity, criteria used in selecting any specific sport or activity coincided closely with the objectives stated above. The criteria that served in the selection of the activities of the program were:

1. The program should contribute to the physical fitness of the students.
2. The testing should evaluate the results and measure the progress of the program.
3. The activity should toughen and strengthen the muscles of the students.
4. The activity should improve muscle coordination, flexibility, agility, posture, and general well-being.
5. The activity should discipline.
6. The activity should develop endurance.
7. The activity should contribute to the ability to move rapidly.
8. The activity should contribute to the ability of

the students to make instantaneous and accurate decisions.

9. The activity should develop, through team play, quick thinking and the ability to cooperate.
10. The activity should develop aggressiveness.
11. The activity should train the students to overcome a variety of obstacles in the environment.
12. The activity should equip the student with the fundamental basic skills necessary to meet any emergency which might confront him in a swimming situation.
13. The activity should give the student confidence in his ability to swim.
14. The activity should enable the student to stay afloat for an indefinite period of time.
15. The activity should help prevent air sickness.
16. The activity should help the student to maintain his sense of direction and balance.
17. The activity should teach the student the correct method of falling and landing.
18. The activity should develop anticipation and timing.
19. The activity should develop teamwork.
20. The activity should develop courage.
21. The activity should build up interest in sports within the squadron.
22. The activity should develop a competitive spirit.
23. The program should be designed to insure a minimum

number of injuries, even while developing the maximum endurance, stamina, and aggressiveness.

24. Activities should be included in the later stages of training in which injuries seldom occur.
25. Activities should be included which contribute to the building of morale.
26. Activities should be included which military authorities have decreed.
27. The program should successfully dovetail with a regular academic schedule; i.e., the student should be left with sufficient mental and physical reserve to pursue other studies energetically.
28. The program adopted should not place undue financial strain on either student or school.
29. The activities of the program should encourage the student to continue some form of physical fitness activity after formal pressure to do so has ceased.
30. The program should meet future military, and possibly educational, requirements.
31. The activities selected should make competition possible.

On the basis of these criteria the following program was constructed:

<u>ACTIVITIES</u>	<u>HOURS</u>
Testing	2
Conditioning exercises	21
Running	27
Obstacle course	9
Basketball	9
Touch football	9
Volleyball	9
Tumbling	12
Swimming (functional)	10

The physical training program of the College Training Detachment was set up for a military situation; therefore, procedures were in keeping with those approved by Military Authorities. The military set-up was the basis for the organization of the students for physical training classes and intramural activities. The organization of the students during the physical training period was that which promoted the greatest amount of participation by each student.

Class organization: Each squadron, which consisted of approximately two hundred men, was formed in three flights outside the barracks before departing for the physical training area. Each flight marcher was responsible for the discipline of the men in his flight. The squadron athletic officer marched the class to the physical training area. Upon reaching the physical training area, the squadron athletic officer reported to the physical training instructor the number of men absent from the formation. The physical training instructor then took charge of the class. At the end of the physical training period, the physical training

instructor turned the squadron back to the squadron athletic officer who marched the squadron back to the barracks, where they were dismissed.

Intramural Program: An intramural program was carried on during the students' free hours. The students were not required to take part in the intramural program, but could do so of their own volition. The squadron intramural program started three weeks before each squadron graduated. The wing intramural program started two weeks before the squadron graduated. Competition in touch football, basketball, volleyball, and softball was held on each week day from 6:00 P.M. until 8:00 P.M. The swimming meet was held on Friday night from 8:00 until 10:00 P.M. The track meet was held on Saturday morning from 8:00 until 10:00 A.M. A Round Robin tournament was used in all sports except in track and in swimming in which a regular meet was held.

The Handbook of Instruction that was written to guide physical training instructors of the 308th College Training Detachment in the conduct of this selected program is presented in Chapter IV.

CHAPTER IV

HANDBOOK OF INSTRUCTION FOR PHYSICAL TRAINING INSTRUCTORS OF THE 308TH COLLEGE TRAINING DETACHMENT

Introduction

This Handbook is a manual of concise information to be used as a guide by you who are responsible for the administration and conduct of the physical training program of the 308th College Training Detachment. Uniformity in the conduct of the physical training program is essential. Therefore, the purpose of the Handbook is to acquaint you as a civilian physical training instructor with the comprehensive, intensive, and rigorous program and procedures of the Army. It contains information concerning the objectives, facilities and equipment, organization of students, activities, and teaching methods for the conduct of the selected physical training program.

Aim and Objectives of the Physical Training Program

The aim of the physical training program in the College Training Detachment is to develop in the student that state of physical fitness and mental alertness which is essential

to, and required for, military effectiveness. When the student enters the College Training Detachment, his degree of physical fitness is below that which is necessary for him to possess as he faces actual situations in military service. His muscle coordination, agility, endurance, strength, flexibility, posture, and general well-being must be improved. It is necessary that he develop the ability to work and cooperate with others, to learn to think quickly, to be aggressive, and to overcome a variety of physical obstacles in the environment under trying conditions. Thus, the objectives of the physical training program are:

1. To strengthen the muscles.
2. To improve muscle coordination, flexibility, agility, posture, and general well-being.
3. To contribute to organic efficiency.
4. To develop endurance.
5. To improve balance and sense of direction.
6. To discipline.
7. To develop skills in manipulating the body.
8. To enable the student to stay afloat in water for an indefinite period of time.
9. To develop quick thinking and timing.
10. To develop aggressiveness.
11. To develop through team play the ability to cooperate with others.

12. To develop good morale.

Administration of the Program

The student is assigned to the College Training Detachment for a period of eighteen weeks. The physical training program begins immediately upon the student's assignment and continues progressively and uninterruptedly throughout the eighteen weeks. Each student is required to take physical training for one hour each day, six days per week, at a definite scheduled period. The program is set up in such a manner that the student attends academic classes from eight o'clock until twelve noon and from one until three o'clock. From three until four o'clock two squadrons participate in physical training while the other three squadrons are taking military training. From four until five o'clock the situation is reversed with three squadrons participating in physical training while the other two squadrons are engaged in military training.

An intramural program is carried on during the student's free hours. The student is not required to take part in the intramural program, but may do so of his own volition. A squadron intramural program starts three weeks before each squadron graduates. A wing intramural program starts two weeks before the squadron graduates. Competition in touch football, basketball, volleyball, and softball is held in the evening of each week day from six until eight o'clock.

A swimming meet is held on Friday from eight until ten o'clock. A track meet is held on Saturday from eight until ten o'clock. A Round Robin tournament is used in all sports except in track and in swimming in which a regular meet is held.

Seven instructors are used in administering the program. Two instructors teach swimming while the other five instructors teach the other activities of the program. Each of the five instructors is assigned a particular squadron. You will teach physical training to the squadron to which you are assigned for one hour each day except Sunday. In addition, you will be assigned to assist another instructor at a scheduled hour. All instructors assist in the conduct of the intramural program.

There are approximately one thousand students assigned to the 308th College Training Detachment. They are divided into five squadrons with approximately two hundred men to a squadron. The squadrons are housed in five centrally located dormitories with one squadron to each dormitory. The squadron is formed in three flights outside of the barracks before departing for the physical training area. Each flight marcher is responsible for the discipline of the men in his flight. The squadron athletic officer marches the squadron to the physical training area. Upon reaching the physical training area, the squadron athletic officer gives the squadron mass front, salutes the physical training instructor, and says, "Sir, the squadron is formed."

He gives the instructor a list of the names of the men who are absent from the formation, salutes the instructor, and takes his post, which is three paces in front of, and facing, the squadron. The instructor then takes charge of the class. At the end of the physical training period the instructor turns the class back to the squadron athletic officer who, in turn, marches the men back to the barracks where they are dismissed.

The students are required to purchase physical training uniforms as soon as possible after their arrival at the Detachment. The wing athletic officer announces the uniform of the day to the squadron athletic officer who, in turn, makes the announcement to his squadron. The squadron athletic officer inspects the physical training uniforms of the men in his squadron once each week.

Physical training instructors have the responsibility to observe the following regulations and policies:

1. Appear in a clean regulation uniform, which consists of white trunks, white T-shirt, white sweat socks, and black tennis shoes.
2. Wear full uniform during the calisthenic period.
3. Conduct the class in a strictly military manner.
4. Be sympathetic with the problems of the students and assist them when possible.
5. Encourage wholesome competition within and between

the squadrons.

6. Exemplify the things which you are seeking to teach.

Activities of the Program

The classification of the activities that comprise the physical training program and the time allotted each for the eighteen weeks are:

Activities	Hours
Testing	2
Calisthenics	21
Running	27
Obstacle course	9
Basketball	9
Touch football	9
Volleyball	9
Tumbling	12
Swimming (functional)	10

The time allotted each activity daily and the progression of the activities through the eighteen weeks is shown in Table 1 on page 25.

The non-swimmers' course in swimming, for which fifteen hours are allotted, is given at the expense of other sports for those students who fail the beginner's test.

Each of the activities of the physical training program is presented in a separate unit.

TABLE 1
TIME ALLOTMENT OF ACTIVITIES

Weeks	Time Allotment	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1st	15 Min.		Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
	45 Min.		Running	Running	Running	Running	Running
	60 Min.	Testing					
2nd	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
3rd	45 Min.	Running	Running	Running	Running	Running	Running
4th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
5th	45 Min.	Basketball	Running	Basketball	Running	Basketball	Running
6th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
7th	45 Min.	Touch Football	Obstacle Course	Touch Football	Obstacle Course	Touch Football	Obstacle Course
8th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
9th	45 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
10th	15 Min.		Calis-thenics				
11th	45 Min.		Running				
12th	60 Min.	Swimming or Tumbling	Swimming or Tumbling	Swimming or Tumbling	Swimming or Tumbling	Swimming or Tumbling	Swimming or Tumbling
13th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
14th	45 Min.	Running	Volleyball	Running	Volleyball	Volleyball	Volleyball
15th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
16th	45 Min.	Running	Volleyball		Volleyball	Volleyball	Volleyball
17th	15 Min.	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics	Calis-thenics
18th	45 Min.	Running	Volleyball	Volleyball		Volleyball	Volleyball

Army Air Force Physical Fitness Tests

Objectives

The objectives of the Army Air Force Physical Fitness Tests are:

1. To determine the physical fitness status of the students.
2. To evaluate the results and measure the progress of the program.

Facilities and Equipment

The facilities and equipment used in the tests are determined by the Army Air Force regulations for administering the tests. These regulations list the facilities and equipment as:

1. One Stop Watch, graduated in seconds.
2. Pull-up (chinning) Bars. These can be made by using four by four (4x4) posts, with a one-inch pipe placed through the posts, eight (8) feet from the ground. The spaces between posts should be five feet six inches (5'6") wide to permit two individuals to perform the test at each space. Boxes or blocks on side of posts should be provided for individuals unable to easily mount the bar.
3. Field for Shuttle-run (60 yard). The field is divided into lanes, each six (6) feet wide. Care should be used in selecting a site with a firm surface and smooth level terrain. A stake two (2) feet high is placed in the center of each lane at the beginning and end of the lane. The stakes should be numbered consecutively and should be facing the runner in the lane.
4. Clothing. Students will wear rubber-soled athletic shoes.¹

¹AAF Regulation No. 50-10 dated 3 February 1944.

Organization

The Army Air Force Physical Fitness Test is given to the students within the first two weeks after arrival and within the last two weeks before departure.

The day before the test, blank test cards are passed out to the students and they are told how to fill out the cards, score the test, and read the physical fitness profile. Students are instructed to fill out the heading of the cards in their rooms. They bring pencils and test cards with them on the day of the test.

On the day of the test the two hundred men of the squadron are marched to the testing area by their squadron athletic officer and are organized for the test items in the following manner:

Sit-ups.--After the men are extended, they count off from front to rear, and the even numbers do an about face. The men now are grouped facing one another in pairs. The even numbers take a supine position and perform while the odd numbers assist by holding the feet of the even numbers and counting. The men then change position so that the partner may take the test.

Pull-ups (chinning).--The men work in pairs here, also. The "buddy" stands in front of the man who is chinning, placing one arm horizontal to the chinner's thigh to prevent kicking and swinging.

300-yard Shuttle Run.--As the men come up to the course,

they are arranged in single file. They are counted off in groups of ten and a student officer stations one group in single file behind one starting stake. With men remaining in proper positions, the student officer takes the cards and arranges them in the numerical order in which the men will run. The student officer, or assistant, now takes the cards to the finish stake directly in front of this group of men. In like manner, nine other groups of men are placed behind the other nine starting stakes.

The number one men run the course first, and the student officer scores the card as the runner finishes.

At the beginning of the last lap the timer calls time by seconds until the group of ten runners have finished the run.

Since there are ten men scoring the cards, the number two men can begin the run immediately after the first ten men finish.

The ten men who have been scoring the cards run the course last.

Procedures and Administration

The procedures and administration of the tests as regulated by the AAF are:

Procedure

- A. Personal data should be recorded on the card prior to reporting for the test. Data under "Cumulative Record" will be recorded for each succeeding test.

- B. At least four (4) trained examiners should be assigned to supervise the test. Any plan of examining and recording which will yield accurate results is acceptable. However, in no instance will an individual be permitted to do his own scoring. It is highly desirable that sufficient qualified examiners be assigned to permit adequate supervision and scoring. The order of tests and minimum numbers of examiners are:
- (1) Sit-up - at least one (1) examiner.
 - (2) Pull-up (chinning) - at least one (1) examiner.
 - (3) 300-Yard Shuttle-run - two (2) examiners (starter and timer).
- C. The method of scoring the test and drawing the physical fitness profile should be read from the footnote paragraph on Form 28A (large card) under scoring procedure. Each profile line should be numbered as indicated in the following diagram (each line indicates one test, e.g., the following diagram indicated three (3) tests).

Table II

Sit ups	Score	Chins	Score	300 Yd. Run	Score	Total	PFR
69	75	15	75	46	75	225	75
66	74					222	74
64	73			47	73	219	73
62	72	14	72	48	71	216	72
60	70					210	70
58	68		68	49	67	204	68
56	66	13				198	66
54	65	12	65	50	65	195	65
52	64					192	64

Administration

Sit-ups

- (1) Procedure: The subject assumes a supine position and places his hands behind his head, with

fingers interlaced. The feet should be comfortably apart with the legs held at the ankles by the partner. The partner should not sit on the feet. The subject then lifts his trunk upward touching his right elbow to the left knee and then lowers the trunk touching the head to the ground. He continues without pause or rest when in the supine position or in the upright position, alternating the left elbow to the right knee and right elbow to the left knee. The subject should not bounce up from the ground.

- (2) Scoring: One (1) for each sit-up. Record to nearest figure: e.g., 34 recorded as 33, 35 as 36, etc.

Pull-ups (chinning)

- (1) Procedure: The subject will use the forward grasp of the bar: i.e., the palm of the hand facing away from the body. To begin, the subject lowers himself, until his arms are straight, then lifts himself until his chin is over the bar. He is not permitted to kick, to swing or to rest.
- (2) Scoring: One (1) for each pull-up. Partial pull-ups will not be scored.

300-Yard Run

- (1) Procedure: The subjects start at one end, make five (5) shuttle trips in the same lane, and finish at the end opposite the start. They may use any starting position. They should face the run to finish in an "all-out" state; must run around the stakes, and must not run outside the six foot lane. The starter signals by a downward movement of his hand and uses track terminology, "on your mark, get set, go!" The timer stands behind the finish line and calls the time in full seconds.²

Upon completion of the test and scoring, Form 28-A is returned to the officer in charge of the program. The subject retains Form 28-B (small card) which is kept on his

² Ibid.

person. If the card is misplaced, another should be procured.

Calisthenics

Objectives

The objectives of the course given in calisthenics are:

1. To increase the size and, hence, the strength of the muscles.
2. To improve agility, posture, and general well-being.
3. To develop coordination.
4. To discipline.
5. To develop flexibility.
6. To develop endurance.

Facilities and Equipment

The facilities and equipment needed in giving calisthenics include:

1. Ample ground space.
2. One wooden stand, six feet in height, six feet in length, and six feet in width.

Organization and Military Procedure

The squadron, which consists of approximately two hundred men, is formed in three flights outside of the barracks before departing for the physical training area. Each

flight marcher is responsible for the discipline of the men in his flight.

The squadron athletic officer marches the class to the physical training area for calisthenics. All squadrons double-time to and from the physical training area. This is held down to a "jog-trot." Upon reaching the physical training area, the squadron athletic officer gives the squadron mass front, salutes the physical training instructor, and says,

"Sir, the squadron is formed."

He then gives the instructor a list of the names of the men who are absent from the formation, salutes the instructor, and takes his post, which is three paces in front of, and facing, the squadron.

To open ranks for calisthenics, the instructor gives the following commands:

1. Squadron (or flight) - Attention.
2. Extend to the left (or right) of base file - March.
On this command, the men raise their arms shoulder-level, and extend on the double until approximately twenty-four inches is left between hands. The men on the left and right flanks raise only the inside arm.
3. Arms-Down. (Be sure men are covered in file.)
4. Left-Face.
5. Extend to the left-March. (Same procedure as in 2.)

6. Arms-Down.

7. Right-Face.

The class is now in a position to start calisthenics.

When the instructor has finished giving calisthenics, he gives the following command to get the men back into a mass front:

"Assemble to the right (or left) by flights-
March."

The men are back in their respective file in flights and are ready to be moved off.

The squadron athletic officer marches the men back to the barracks and dismisses them.

Methods and Procedures

When a new squadron arrives, it is taught the continuity method. Continuity is changing from one exercise to another without stopping. The object of this method is to give as much exercise as possible in the time allotted.

The squadron is called to attention, the exercise is demonstrated, then the command, "Ready-Begin" is given. After the men have had a sufficient dosage of this exercise, the instructor demonstrates the next exercise while the men are still performing the first exercise. Then he gives the command, "One, two, sound-Off." The men count off the count of the exercise twice, then the instructor says, "Change, two, three, four, And." On "And" the class assumes the starting

position for the new exercise, and the instructor immediately starts counting the cadence for the new exercise. To end an exercise, the instructor raises his right arm above his head and stands in this position during the last series of counts of the exercise as he says with a rising inflection in his voice, "One, two, and Halt."

Contents

The progression in the physical training period for Calisthenics is as follows:

1. Disciplinary exercises -- 3 minutes.
2. Exercises from a standing, back-leaning-rest, supine, and a front-leaning-rest position:
 - a. Exercises from the standing position -- 6 minutes.
 - b. Exercises in the supine position -- 4 minutes.
 - c. Exercises in the back-leaning-rest position -- 4 minutes.
 - d. Exercises in the front-leaning-rest position -- 4 minutes.
 - e. Coordination exercise -- 3 minutes.

The dosage and number of calisthenics given is determined by the physical fitness of the men. Calisthenic exercises should progress by increasing the speed and duration of movement.

Disciplinary exercises.--The disciplinary exercises have no particular value in the physical development of the men, but are of great importance in instilling in the men a willingness to follow orders and commands with accuracy and promptness. The instructor must be able to give the commands for the exercises clearly and accurately to have complete control of the men.

The disciplinary exercises consist of facings, hand-placings, foot-placings, arm movements, and the starting positions. These exercises are given for three minutes at the beginning of the class, and are called off in rapid succession so that the instructor may demand quick and accurate responses to the commands. If the disciplinary exercises are performed properly, the responses to the remainder of the exercises should be good.

Some examples of the disciplinary exercises are:

1. Hands on hips - Place.
2. About - Face.
3. Present - Arms.
4. Front leaning rest - Take.
5. Back leaning rest - Take.
6. Sitting position of attention - Take.

Exercises from a standing, back-leaning-rest, supine, and a front-leaning-rest position.--These exercises are used to warm up the class, as well as to exercise as many parts of the body simultaneously as possible.

Explanation of Terms:

1. Back-leaning. The act of supporting the body with the arms and the heels. The arms are kept shoulder-width apart with the elbows stiffened.
2. Front-leaning. The act of supporting the body with the arms and the toes. The arms are kept shoulder-width apart with the elbows stiffened.
3. Abduct. The act of moving away from the middle line of the body.

Examples of Exercises:

I. Standing Position.

1. The High Jumper.

- a. Starting position -- feet separated about twelve inches, knees slightly bent, arms raised backwards, body bent slightly forward.
- b. Movement.
 - (1) Swing arms forward and jump upward.
 - (2) Swing arms backward and jump upward.
 - (3) Swing arms forward and over head, jumping at least one foot upward.
 - (4) Swing arms backward and jump upward.
- c. Cadence -- moderate.

2. Side Straddle Hop.

- a. Starting position -- attention.
- b. Movement.

(1) Jump to side straddle, bringing hands over head and keeping arms straight with the palms of the hands facing one another.

(2) Recover to standing position.

(3) Same as (1).

(4) Same as (2).

c. Cadence -- moderate.

3. Burpee.

a. Starting position -- attention.

b. Movement.

(1) Bend at the knees and at the hips; place hands on the ground in front of the feet in a squatting position with the elbows inside the knees.

(2) Thrust feet and legs backward to a front leaning rest position with the body straight and the weight supported on hands and toes.

(3) Return to the squat position.

(4) Resume standing position.

c. Cadence -- moderate.

4. Squat Bender.

a. Starting position -- attention.

b. Movement.

(1) Full squat, thrust arms forward, fingers extended, palms down, and trunk erect.

(2) Return to original position.

(3) Bend forward sharply thrusting downward
with fingers touching toes, knees straight.

(4) Return to starting position.

c. Cadence -- moderate.

5. Side Bender.

a. Starting position -- standing with feet apart,
hands clasped overhead, arms straight.

b. Movement.

(1) Bend sideward sharply to the left, bending
the left knee. Bend straight to the side.

(2) Recover.

(3) Bend sideward sharply to the right, bending
the right knee. Bend straight to the right.

(4) Recover.

c. Cadence -- slow.

II. Back-Leaning-Rest Position.

1. The Bridge.

a. Starting Position -- from a sitting position with
arms extended backward and legs extended forward
with feet flat on the ground, the body is raised
upward until the full weight is borne on hands
and feet.

b. Movement.

(1) Arch the back by thrusting the waist upward
and the head backward.

(2) Return to the starting position.

- (3) Same as (1).
 - (4) Same as (2).
 - c. Cadence -- moderate.
3. Leg Kick.
- a. Starting Position -- back leaning rest.
 - b. Movement.
 - (1) Raise left leg as high as possible, keeping leg straight and toes pointed.
 - (2) Recover.
 - (3) Raise right leg as high as possible, keeping leg straight and toes pointed.
 - (4) Recover.
 - c. Cadence -- slow.
4. Leg Over.
- a. Starting Position -- back leaning rest with feet spread.
 - b. Movement.
 - (1) Cross left leg over right and touch ground.
 - (2) Recover.
 - (3) Cross right leg over left and touch ground.
 - (4) Recover.
 - c. Cadence -- moderate.
5. Curl - Up.
- a. Starting Position -- back leaning rest.
 - b. Movement.
 - (1) Bend knees bringing both feet up under buttocks.

(2) Recover.

(3) Same as (1).

(4) Recover.

c. Cadence -- slow.

III. Supine Position.

1. Rowing Exercise.

a. Starting Position -- flat on back, arms extended overhead, feet together.

b. Movement.

(1) Sit up and at the same time bend knees sharply; lean forward, thrusting arms forward to a rowing position with the knees together and against the chest, feet flat and heels close to buttocks; arms extended forward.

(2) Return to starting position.

(3) Same as (1).

(4) Same as (2).

c. Cadence -- moderate.

2. Body Twist.

a. Starting Position -- flat on back, arms extended sideward, palms down, legs raised to a right angle with feet together, knees straight.

b. Movement.

(1) Lower legs to the left, twisting the torso, touching the ground on the left side in the

vicinity of left hand. Keep knees straight.

(2) Return to starting position.

(3) Lower legs to the right, twisting torso, touching ground on right side in the vicinity of right hand. Keep knees straight.

(4) Return to starting position.

c. Cadence -- slow.

3. Sit-ups.

a. Starting Position -- flat on back, feet two feet apart, arms extended overhead.

b. Movement.

(1) Sit up, move arms forward and touch toes, keeping knees straight.

(2) Lie back to original position.

(3) Raise legs, swinging them overhead, keeping knees straight and touching toes to ground behind head.

(4) Lower legs to starting position.

c. Cadence -- slow.

4. The Flexor.

a. Starting Position -- supine, hands under hips, heels held two inches above ground.

b. Movement.

(1) Flex left leg -- heel touching left buttocks.

(2) Recover.

(3) Flex right leg -- heel touching right buttock.

(4) Recover.

c. Cadence -- moderate.

5. The Abductor.

a. Starting Position -- supine, hands under hips, heels two inches above ground.

b. Movement.

(1) Abduct left leg as far as possible.

(2) Recover.

(3) Abduct right leg as far as possible.

(4) Recover.

c. Cadence -- moderate.

IV. Front Leaning Rest.

1. Push-ups.

a. Starting Position -- front leaning rest. The body is straight from head to heels.

b. Movement.

(1) Bend elbows and touch chest to ground, keeping body straight.

(2) Straighten elbows, raising body in straight line.

(3) Same as (1).

(4) Same as (2).

c. Cadence -- at will.

2. Leg Spread.

- a. Starting Position -- front leaning rest, keeping body as straight as possible.
 - b. Movement.
 - (1) Spread legs as far as possible.
 - (2) Recover.
 - (3) Same as (1).
 - (4) Same as (2).
 - c. Cadence -- moderate.
3. Leg Raise.
- a. Starting Position -- front leaning rest.
 - b. Movement.
 - (1) Raise left leg as high as possible.
 - (2) Recover.
 - (3) Raise right leg as high as possible.
 - (4) Recover.
 - c. Cadence -- slow.
4. Arm Over.
- a. Starting Position -- front leaning rest.
 - b. Movement.
 - (1) Shift weight to right hand and right foot, bringing left arm up to a perpendicular position to the body.
 - (2) Recover.
 - (3) Shift weight to left hand and left foot, bringing right arm up to a perpendicular position to the body.

- (4) Recover.
- c. Cadence -- slow.
- 5. Wheel Spin.
 - a. Starting Position -- front leaning rest.
 - b. Movement.
 - (1) Raise left knee under chest.
 - (2) Recover.
 - (3) Raise right knee under chest.
 - (4) Recover.
 - c. Cadence -- moderate.

Running

Objectives

The objectives of the course given in running are:

1. To develop endurance.
2. To develop the ability to move rapidly from one place to another.
3. To develop cardiac-respiratory efficiency.
4. To develop strength.
5. To develop speed.
6. To develop agility and timing.

Facilities and Equipment

The facilities and equipment include:

1. Eight-tenths mile dirt road.
2. One and six-tenths mile dirt road.

3. One four hundred and forty-yard cinder track.
4. A large drill field for wind sprints.
5. Stop watches.
6. Score pads.

Organization

Cross Country.--The Squadron which is composed of three flights is marched to the start of the cross country course by the squadron athletic officer. The Physical Training Officer starts all members of the leading flight at one time. The other two flights are started at two minute intervals.

Wind Sprints.--The Squadron is formed in a mass front. The students are then extended to the left until approximately twenty-four inches remain between hands, and are counted off from front to rear by two's with the even numbers uncovering.

Relays.--Teams of equal numbers of men are arranged in parallel columns behind a common starting line. The columns are about twelve feet apart. A turning point is established in front of each team with the distance of the point varying with the type of race.

Dashes.--The Squadron is formed in a mass front at the starting line.

Methods and Procedures

For the first six meetings in cross country running, the students run the eight-tenths mile course. They start on the one and six-tenths mile course in the seventh meeting of Cross Country. The eight-tenths mile course is run for time, which should be under seven minutes, in the ninth meeting of Cross Country. The one and six-tenths mile course is run for time, which should be under fourteen minutes, in the fourteenth meeting of Cross Country.

The students are expected to do the wind sprints at moderate speed during the first three meetings of wind sprints, and at full speed thereafter.

Relays and dashes are given to the students after the eighteenth meeting when it is felt that they are in fair physical condition.

Meeting I

Cross Country (eight-tenths mile course)

1. Instruction in the start.
 - a. Use a standing start.
 - b. Have the feet in a stride position.
 - c. Bend the body slightly forward.
2. Running.
 - a. Practice starting.
 - b. Alternate jogging and walking every hundred yards until the course is completed.

Meeting II

Wind Sprints

1. Instruction in the start.
 - a. Spread feet approximately eighteen inches; point toes straight ahead with heels raised, buttocks lowered, back straight, and head up.
 - b. Place one hand on the ground between the knees and approximately eighteen inches in front of the toes.
2. Running.
 - a. Stress proper starting form.
 - b. Run at moderate speed. (The instructor starts and stops the students by blowing the whistle.)

Meeting III

Cross Country (eight-tenths mile course)

1. Instruction in the running form.
 - a. Lean body slightly forward.
 - b. Carry head in a natural position.
 - c. Lift knees well out in front.
 - d. Point toes straight ahead.
 - e. Make strides on the balls of the feet.
 - f. Swing arms from the shoulders.
 - g. Keep arm action free and smooth.
2. Running.
 - a. Stress proper running form.
 - b. Alternate jogging and walking every one hundred

and fifty yards until the course is completed.

Meeting IV

Cross Country (eight-tenths mile course)

1. Instruction.
 - a. Review proper running form.
 - b. Correct mistakes noted in running form.
2. Running.
 - a. Jog one half of the course.
 - b. Walk one hundred yards.
 - c. Jog the remainder of the course.

Meeting V

Wind Sprints

1. Instruction.
 - a. Review the proper running form.
 - b. Correct mistakes noted in the running form.
2. Running.

Meeting VI

Eight-tenths mile jog on cross country course.

Meeting VII

Wind Sprints

1. Increase total distance of series to approximately one hundred yards.
2. Run at a moderate speed.

Meeting VIII

Eight-tenths mile jog on cross country course.

Meeting IX

Eight-tenths mile run on cross country course for time.

Meeting X

Wind Sprints

1. Instruction.
 - a. Drive forward as fast as possible at the blast of the whistle.
 - b. Stop running and immediately assume starting position at the sound of the second whistle.
2. Running.

Meeting XI

One and six-tenths mile jog and walk on cross country course.

1. Jog one half of the course.
2. Walk one hundred yards.
3. Jog remainder of the course.

Meeting XII

One and six-tenths mile jog on cross country course.

Meeting XIII

Full speed running of wind sprints.

Meeting XIV

Eight-tenths mile run on cross country course for time.

(Time should be under seven minutes.)

Meeting XV

One and six-tenths mile run and walk on cross country course.

1. Run one half of the course.
2. Walk one hundred yards.

3. Run remainder of the course.

Meeting XVI

Full speed running of wind sprints.

Meeting XVII

One and six-tenths mile run and walk on cross country course.

1. Run one half of the course.
2. Walk one hundred yards.
3. Run remainder of the course.

Meeting XVIII

One and six-tenths mile run on cross country course.

Meeting XIX

Dashes

1. Instruction in the start.
 - a. Use a crouch start.
 - b. Have the knee of the rear leg to come to rest beside the ankle of the front leg in a comfortable crouch.
 - c. Place tips of fingers and thumbs on the ground just behind the starting line.
 - d. As the command, "Get set," is given, raise the knee of the rear leg until it is approximately level with the ankle of the other foot.
 - e. As the starting command is given, straighten the front leg and give a drive with both feet.
 - f. Swing the arms backward and forward, opposite to the legs, as each step is taken.

2. Running.

Meeting XX

Dashes (50 to 220 yards)

1. Instruction in the running stride.
 - a. Bring the left arm forward as the right leg is brought forward, and vice versa.
 - b. Bend elbows.
 - c. Swing hands to about shoulder height.
 - d. Lift knee forward and upward as the leg is brought forward.
3. Lean body forward to about a 25 degree angle.
2. Running.
 - a. Stress correct starting form.
 - b. Stress correct running form.

Meeting XXI

Cross Country (one and six-tenths mile course)

1. Instruction.
 - a. Review and demonstrate correct running form.
 - b. Stress relaxation.
2. Running.

Meeting XXII

Relays

1. Instruction in the blind baton pass (used in the short relays).
 - a. The receiver stations himself near the start of the passing zone, and commences to run when

passer is five to ten yards away.

- b. The receiver's cupped hand is placed on top of the hip bone with the palm facing upward and inward, the thumb forward and the fingers tips touching the hip.
- c. Several strides from the end of the passing zone the passer places the baton in the cupped hand of the receiver who grasps it without looking backward and without affecting his stride.

2. Practice in baton passing.

Meeting XXIII

One and six-tenths mile run on cross country course for time.
(Time should be under fourteen minutes.)

Meeting XXIV

Dashes (440 yards)

1. Instruction.
 - a. Crouch start.
 - b. Running form.
 - (1) Lean body forward about 15 degrees.
 - (2) Carry knees and arms lower than when running the shorter dashes.
2. Running.
 - a. Jog 440 yards for warm up.
 - b. Stride 440 yards at medium speed.

Meeting XXV

Relays

1. Instruction in the visual baton pass (used in longer relays).
 - a. The receiver takes the same position as in the blind pass except that he watches passer, holding out his hand to the rear while running with palm down.
 - b. The passer lifts the baton into the receiver's hand.
 - c. The receiver has his head turned backward with his eye on the baton at the moment of passing.
2. Practice in baton passing.

Meeting XXVI

One and six-tenths mile run on cross country course.

Meeting XXVII

Dashes (50 to 220 yards)

1. Instruction.
 - a. Review start.
 - b. Review running form.
2. Running.
 - a. Run fifty-yard dash.
 - b. Stride two hundred and twenty yards.

Meeting XXVIII

Relays (Dizzy Izzy)

1. Instruction.

- a. Run to turning point.
- b. Pick up baseball bat.
- c. Place one end of bat on ground with forehead on other end.
- d. Run around bat five times and then drop it.
- e. Run back and touch off next man.

2. Running.

Meeting XXIX

One and six-tenths mile run on cross country course for time.

Meeting XXX

Dashes

1. Run the fifty-yard dash.
2. Stride the one hundred-yard dash.

Meeting XXXI

Relays (tunnel)

1. Instruction.
 - a. Half way to turning point place a man on his hands and knees, with his left side facing his team.
 - b. Run to him and crawl under the arch made by his body.
 - c. Run to turning point, back under the arch and run to touch off next man.
2. Running

Meeting XXXII

One and six-tenths mile run on cross country course for time.

Meeting XXXIII

Dashes

1. Run the two hundred and twenty-yard dash.
2. Stride the four hundred and forty-yard dash.

Meeting XXXIV

Relays

1. Run the dizzy-izzy relay.
2. Run the tunnel relay.

Meeting XXXV

One and six-teenths mile run on cross country course.

Meeting XXXVI

Dashes

1. Stride the two hundred and twenty-yard dash.
2. Run the four hundred and forty-yard dash.

The Obstacle Course

Objectives

The objectives of the course given in obstacle running are:

1. To develop endurance, balance, and speed.
2. To develop aggressiveness.
3. To train men to meet a variety of physical obstacles under trying conditions.
4. To develop strength.
5. To develop agility and alertness.
6. To condition.

7. To develop skills.

Facilities and Equipment

The facilities and equipment include:

1. Seven hundred and sixty yards of ground space.
2. Thirteen obstacles.

The obstacles and the physical characteristics of each are:

1. Four wooden hurdles, three feet in height.
2. One solid wall, eight feet in height.
3. One hand over hand apparatus, which is a pipe, two inches in diameter and twenty feet in length. The pipe is supported by posts which are ten feet in height.
4. One concrete culvert, three and one-half feet in height and thirty feet in length. The culvert is used for the belly crawl.
5. One straddle run, which is made of boards thirty feet in length and twelve inches in width. The boards are slanted at a forty-five degree angle and are supported eighteen inches above the ground by wooden posts.
6. One rope swing apparatus. Two posts twenty feet in height are placed near the edge of a pit. The pit is three feet in depth. The posts are fifteen feet apart. Four ropes, equidistantly placed, are tied

to the pipe so that the ends of the ropes come to within six feet of the ground.

7. One trench, seven feet in width, twenty-five feet in length, and four feet in depth.
8. Three low bars, twenty-five feet in length which are supported by posts, three and one half feet in height. The low bars are placed five yards apart.
9. One bear trap, fifteen feet in width, five feet in height, and twelve feet in length. The trap is in the form of a rectangle, and is made of interlocked boards.
10. One checkerboard run, fifteen feet in width, twenty feet in length, and constructed of six-inch logs. The logs are crisscrossed at a distance of two feet.
11. One log fence, five feet in height.
12. One inverted "V" ladder, eight feet in width, seven feet in height, at the apex, and with a base twelve feet in length.
13. One over-under-over apparatus. The over obstacle is made of one log, fifteen feet in length, which is supported by two posts, five feet in height. The under obstacle is made of one log, fifteen feet in length which is supported by two posts, two and one-half feet in height.

Organization

The students are marched to the start of the obstacle course in a column of fours. Four men are started at ten second intervals. Athletic officers are posted at various spots throughout the course.

Methods and Procedures

The course in obstacle running consists of twelve meetings. The first three meetings are devoted to instruction in running the obstacle course. The men are taught to negotiate the various barriers in the most efficient manner before they are permitted to run the course at full speed. The remaining nine meetings are devoted to the running of the course.

Meeting I

Presentation of Hurdles.

1. Instruction.
 - a. Run straight at the hurdle.
 - b. When the take-off foot is about three feet in front of the hurdle, kick the front foot upward and forward.
 - c. Keep facing the front all of the way over the hurdle.
 - d. Lean body forward when going over the hurdle.
2. Demonstration.

Presentation of the Wall.

1. Instruction.

- a. When the wall is reached, jump forward and upward, placing one of the feet against the wall as high as possible.
- b. Grasp the top of the wall with both hands.
- c. Pull the body up with the hands while the legs assist.
- d. Swing the legs over the wall and follow with the arms.
- e. Hit the ground in a relaxed position.

2. Demonstration.

Presentation of Hand-over-Hand Travel.

1. Instruction.

- a. Grasp pipe firmly with both hands.
- b. Keep arms bent slightly at the elbows.
- c. Place rear hand at a comfortable distance in front of the forward hand.
- d. Swing body forward, releasing rear hand.
- e. Use a rhythmic swing for speed.

2. Demonstration.

Presentation of the Belly Crawl.

1. Instruction.

- a. Enter head first.
- b. Crawl, using hands and feet.
- c. Keep body lowered.

2. Demonstration

Practice in Running the Hurdles, Climbing the Wall, Traveling the Hand-over-Hand Apparatus, and Crawling the Belly Crawl.

Meeting II

Presentation of the Straddle Run.

1. Instruction.

- a. Run with feet apart.
- b. Run with the body lowered.
- c. Maintain balance.

2. Demonstration.

Presentation of the Rope Swing.

1. Instruction.

- a. Grasp rope with both hands.
- b. Keep arms bent.
- c. Swing forward and dismount at the end of the swing.

2. Demonstration.

Presentation of the Trench.

1. Instruction.

- a. Approach at full speed.
- b. When the take-off foot is approximately six inches from the edge of the trench, jump, throwing arms and legs forward and upward.
- c. Land on one or both feet.

2. Demonstration.

Presentation of the Low Bars.

1. Instruction.
 - a. Run straight at the bars.
 - b. When the take-off foot is about three feet in front of the bar, kick the front foot upward and forward.
 - c. Keep facing the front.
 - d. Lean the body forward while going over each bar.
2. Demonstration.

Practice in Running the Straddle Run, Performing the Rope swing, Jumping the Trench, and Hurdling the Low bars.

Meeting III

Presentation of the Bear Trap.

1. Instruction.
 - a. Grasp the top of the trap with both hands.
 - b. Use the side vault.
 - c. Land with the feet as close together as possible.
2. Demonstration.

Presentation of the Fence.

1. Instruction.
 - a. Grasp the top of the fence with both hands.
 - b. Use the side vault.
 - c. Land with the feet in a running position.
 - d. Make a rapid recovery.
2. Demonstration.

Presentation of the Checker Board Run.

1. Instruction.
 - a. Use "Choppy" steps.
 - b. Land on the toes and balls of the feet.
 - c. Raise the knees high.
2. Demonstration.

Presentation of the Inverted "V" Ladder.

1. Instruction.
 - a. Maintain good body balance.
 - b. Use hands and feet in climbing the ladder.
 - c. Use feet only in descending the ladder.
2. Demonstration.

Presentation of the Over-Under-Over.

1. Instruction.
 - a. Use hand vault to go over.
 - b. Use belly crawl to go under.
2. Demonstration

Practice in vaulting in and out of the Bear Trap, vaulting the Fence, Running the Checker-board Run, Climbing and Descending the Inverted "V" Ladder.

Meetings IV, V, and VI

Running the Course.

1. Run at moderate speed.
2. Concentrate on correct form.

Meetings VII through XII

Running the Course.

1. Run for time.

2. Check for improvement.

Basketball

Objectives

The objectives of the course given in basketball are:

1. To develop in the student the ability to make instantaneous and accurate decisions.
2. To develop coordination.
3. To develop endurance.
4. To develop skills.
5. To develop team work through participation in a competitive activity.
6. To condition through participation in a strenuous activity.

Facilities and Equipment

The facilities and equipment include:

1. Twenty-seven outdoor courts.
2. One indoor court.
3. Twenty-eight basketballs.

Organization

The flight athletic officer organizes the teams of his flight and assists in organizing composite teams of any odd men left out of the different flights. There are six men to each team, with one man of each team acting as an official when his own team plays. The members of each team alternate

as officials. This method assures two officials for each game.

All teams are grouped at one court for the teaching and the demonstration of certain phases of the game. Then each team is lined up in single file next to the team with which it is to compete. Balls are passed out to alternate files, after which competing teams double time to a designated playing court.

The teams within the squadron play by a regular schedule. A Round Robin tournament is used.

Methods and Procedures

The course in basketball consists of twelve meetings. The meetings are held on Mondays, Wednesdays, and Fridays. The first meeting is devoted to the discussion of the objectives and rules of the game. The first ten minutes of the next seven meetings are used for instructional purposes. Capable men are selected to teach and to demonstrate certain points of the game at each meeting. This part of the meeting is necessarily short, and only a few points are emphasized at a time. These particular points then are stressed in scrimmage, which follows the instruction and demonstration and takes up the remainder of the period.

The last four meetings are devoted to competitive play.

Meeting I

The first meeting is held in the gymnasium with members

of the squadron seated in the bleachers. The objectives of the game and the essential rules taken from the official basketball rule book are discussed by the instructor, with a selected group of students demonstrating the rules as they are discussed.

Meeting II

Presentation of Catching

1. Instruction.
 - a. Keep hands relaxed at all times and fingers spread immediately before receiving the ball.
 - b. Catch the ball with the fingers and thumbs.
 - c. Let hands and arms give with the ball when receiving a pass.
 - d. Keep the eyes on the ball at all times.
2. Demonstration.
3. Drill.

Presentation of Passing.

1. Instruction.
 - a. Chest Pass.
 - (1) Stress wrist and fingers snap along with the coordination of the body and the step in pushing the ball for the pass.
 - (2) At the finish, hands go forward in the direction of the pass with the palms of the hands facing the receiver.
 - b. Bounce Pass.

(1) Execute in the same manner as the chest pass except bounce the ball to the receiver.

(2) Spin the ball toward the receiver to make a faster pass.

(3) Make with one or both hands.

c. ^{omit} Hook Pass.

(1) Turn away from opponent and receiver.

(2) Jump.

(3) Turn back toward opponent while in the air.

(4) Pass.

(5) Land ready for action.

2. Demonstration.

3. Drill.

Scrimmage.

Other types of ^{omit} passes can be added if time permits, and naturally will be developed by the men as they continue their play.

Meeting III

Presentation of Dribbling.

1. Instruction.

a. Straight ahead dribble.

(1) Bounce the ball directly in front and about knee high.

(2) Stay in such a position to see directly ahead.

(3) Move hands, wrist, and arms up and down with the ball with a slight wrist action.

b. Side-of-the-body dribble.

(1) Bounce the ball at the side opposite the opposing guard.

(2) Move hands, wrist, and arms up or down with the ball with a slight wrist action.

2. Demonstration.

3. Drill.

Presentation of Shooting.

1. Instruction.

a. Two-handed chest shot.

(1) Hold ball with fingers and thumbs.

(2) Spread fingers over and along the side of the ball while moving the thumbs to the rear.

(3) Hold elbows in a half bent position, bend knees slightly, and lower the ball.

(4) Then straighten elbows and knees as the ball is pushed upward and outward toward the basket.

(5) Keep the feet together or one slightly in front of the other and twelve to eighteen inches apart.

b. One-handed push shot.

(1) Use usually after a dribble toward the

basket.

- (2) As the dribble or pass is completed, take one step and leap high into the air.
- (3) Carry the ball about head high with both hands. From this position use one hand to guide and to help in placing the ball on the tips of the fingers of the shooting hand. Keep the palm up and facing the basket.
- (4) Push the ball until the arms are fully extended.
- (5) Make the shot with a wrist and finger snap. *Place the ball on the back board for the basket.*

c. Free Throw.

- (1) Use the type most suited to individual student.
- (2) Stress body balance and follow through.

2. Demonstration.

3. Drill.

Scrimmage.

Meeting IV

Presentation of Defense Tactics.

1. Instruction.

a. Footwork.

- (1) Use a shuffle.
- (2) Use a wide base with feet spread, knees bent, and buttocks lowered.

b. Position.

(1) Stay between opponent and basket.

(2) Keep hands in one of the two following positions:

One hand up and one hand at side.

Hands and arms extended sideways.

2. Demonstration

3. Drill

Presentation of man-to-man Defense All Over Court.

Scrimmage.

Meeting V

Presentation of Pivots.

1. Instruction.

a. Front.

(1) Approaching the guard as dribbler, stop, pivot on forward foot, stepping forward with opposite foot, turning back and around while passing to a teammate.

b. Reverse.

(1) Approaching the guard as dribbler, stop, pivot on rear foot while stepping back with the other foot, and pass to a teammate.

2. Demonstration.

3. Drill.

Scrimmage.

Meeting VI

Presentation of Relays.

1. Instruction.

a. Dribbling and shooting relay.

b. Passing and shooting relay.

2. Demonstration.

3. Drill.

a. Arrange two teams at one end of the court with one basketball to the team. At signal of the whistle have the front man of each team dribble to the opposite goal and shoot. Have each man shoot until the goal is made, after which he returns the ball with a dribble to the next man on his side. The team finishing first is the winner.

b. Arrange two teams behind the end line of the basketball court and under the basket, with a guard for each team as passer at the center line. At the signal have the front man of each team come forward. Upon receiving the pass from the guard, he pivots and shoots. Have him follow up and make goal if he misses the pivot shot. The team that finishes first is the winner.

Scrimmage.

Meeting VII

Review.

1. Instruction.
 - a. Chest pass.
 - b. Bounce pass.
 - c. ~~Over~~ hook pass.
2. Demonstration.
3. Drill.
 - a. Form circles with seven men to each circle and with men five yards apart.
 - b. As the instructor calls the type of pass to be used, have the passer pass to the man across the circle from him, which is approximately a ten yard pass.

Scrimmage.

Meeting VIII

Set Shots with Follow-up.

1. Instruction.
2. Demonstration.
3. Drill.
 - a. Form semi-circles facing the goals with five men to each semi-circle.
 - b. Practice shots taught in previous lessons.
 - c. Follow up each shot for a rebound one-hand shot.

Scrimmage.

Meetings IX, X, XI, and XII

Competitive team play.

Touch Football

Objectives

The objectives of the course given in touch football are:

1. To develop through team play speed, quick thinking, and timing.
2. To develop and strengthen the body.
3. To develop the ability to cooperate.
4. To develop team work through participation in a competitive activity.
5. To condition through participation in a strenuous activity.
6. To develop alertness.
7. To develop aggressiveness.
8. To discipline.

Facilities and Equipment

The facilities and equipment include:

1. One large drill field.
2. Thirteen touch-football fields.
3. Sixteen footballs.

Organization

The flight athletic officer organizes the teams of his flight and assists in organizing composite teams of any odd men left out of the different flights. There are seven men to each team with one man of each team acting as an official when his own team plays. The members of each team alternate as officials.

All members of the squadron are grouped at one field for the teaching and demonstration of certain phases of the game. Then each team is lined up in single file next to the team with which it is to compete. Balls are passed out to alternate files. Competing teams then double time to a designated playing field.

The teams within the squadron play by a regular schedule. A Round Robin Tournament is used.

Methods and Procedures

The course in football consists of twelve meetings. The meetings are held on Mondays, Wednesdays, and Fridays. The first meeting is devoted to a discussion of the objectives of the course and to the rules of the game.

The next six meetings are devoted to the teaching and demonstration of certain points of the game, to drills, and to play.

The last five meetings are devoted to competitive play.

Meeting I

The objectives of the course and the rules of the game are discussed at the first meeting. Regulation football rules are used with the exception of those given in the ensuing pages.

Kick-Off.

1. The kick-off may be made by punting or kicking off.
2. The kick-off is made from the twelve yard line.
3. The restraining line for the receiving team is the 20 yard line. Three men must remain in front of this line until the kick is made.
4. On a kick-off, if the ball is kicked beyond the receiving team's restraining line (20 yard line) the kicking team may recover the ball. The receiving team may recover and advance the ball.

Position of Players.

1. Both teams shall have six members.
2. Both teams shall have three men on the line of scrimmage and three men in the backfield.
3. The players on the line of scrimmage must be within one yard of the ball.

Passing.

1. Any number of forward and lateral passes may be made on any play that starts from scrimmage.
2. No forward passes may be made on a play started by a kick (punt or kick-off). Any number of lateral

passes are permitted.

3. The ball is put in play after an incomplete forward pass at the spot from which the pass was thrown except when the pass is thrown from behind the line of scrimmage.
4. No man may pass to himself either forward or laterally.
5. If a pass is intercepted, it may be thrown forward.

Fumbles.

1. No man may leave his feet and recover a fumble (penalty -- loss of ball).
2. The first man to touch a fumbled ball is given possession of it.
3. If an offensive back muffs the ball on the snap from center, the offense may recover the ball and continue the play, but the ball is dead if the defense recovers it.
4. An incomplete lateral pass, beyond the line of scrimmage, may be recovered by either team.
5. Any fumble, behind the line of scrimmage, resulting from handling the ball either forward or backward, or in incomplete lateral pass, may be recovered and advanced by the offensive team and only recovered by the defensive team.
6. Any passes or fumbled ball that does not touch the ground may be advanced by any player catching it.

Touching.

1. The ball is dead when the ball carrier is touched above the knees with either hand by a defensive player who is on his feet.

Free Kick.

1. A free kick may be declared by the offensive team.
2. When a free kick is declared, the ball must be kicked and three men from both teams must be on the line of scrimmage until the ball is kicked.
3. No one may rush the kicker on a free-kick.
4. A quick-kick may be executed at any time.

Blocking.

1. No body blocks are allowed at any time.
2. Shoulder blocking is allowed only on, or in back of, the line of scrimmage.
3. All other blocking must be made with the blocker in an upright position and with his hands in contact with his body.

Penalties.

1. The offended team may have its choice of the penalty or refuse the penalty.
2. Five yard penalties are given for the following violations of the rules:
 - a. Offside.
 - b. Backfield in motion.
 - c. Three men not on the line.

- d. Defensive holding.
 - e. More than fifteen seconds in the huddle.
 - f. More than two time-outs per half.
 - g. Forward pass on a punt or kick-off return.
3. Ten-yard penalties are given for the following violations of the rules:
- a. Offensive holding.
 - b. Pass interference by the offensive team (also loss of down).
 - c. Tripping by defense.
4. Loss of Ball.
- a. Leaving feet and recovering a fumble.
 - b. Body blocking.
 - c. Shoulder blocking downfield.
 - d. Clipping.
 - e. Unnecessary roughness.
 - f. Tripping by offense.
5. Players are disqualified for unsportsmanlike conduct.
6. Pass interference.
- a. Same as football except the penalty does not carry a first down with it.
 - b. The down shall remain the same when pass interference is called on the defensive team.

Time Outs.

- 1. Each team is allowed two time-outs per half.

2. Time-outs will be one minute, unless time is extended by the official to care for injured players, etc.
3. Time-outs for injured players will be taken by the official.
4. No time-outs last two minutes of either half.

Playing Periods.

1. Each quarter will be ten minutes long with time being taken out only when a team asks for it or when taken out by an official.
2. Time will be stopped after a touchdown or safety is scored.

Scoring.

1. Touchdown 6 points
2. Safety 2 points
3. Point after touchdown . 1 point (played from 2 yard line)

Tie Games.

1. A sudden death period will be played. The first team to score will be the winner. The choice of kicking, receiving, or goal, will be determined by the flip of a coin.

Officials.

1. Officials for all tournament games will be furnished by the Department of Physical Training.
2. Students will never be used as officials in tournament play.

Meeting II

Presentation of Passing.

1. Instruction.
 - a. Assume a comfortable stance.
 - b. In gripping the ball, place the thumb of the throwing hand on the same relative spot as the second lace of the ball.
 - c. Follow through, stepping in the direction in which the ball is to be thrown.
 - d. Pass in front of the receiver.
 - e. "Bullet" the short passes.
 - f. Loft the long passes.
2. Demonstration.
3. Drill.
 - a. Divide the members of each flight into two lines.
 - b. Have the lines face each other fifteen yards apart.
 - c. Pass the balls back and forth between the two lines so that each man has an opportunity to pass the ball.

Scrimmage.

Meeting III

Presentation of Receiving.

1. Instruction.
 - a. Catch the ball with the thumbs inward when

running at right angles to the ball.

- b. Catch the ball with the little fingers inward when running with the ball.
- c. Have "liquid" hands.
- d. Carry the hands in the same position as the sprinter does when running.
- e. Keep your eyes on the ball until it is caught.

2. Demonstration.

3. Drill.

- a. Form the members of each flight into two lines with the men in each line facing in the same direction.
- b. Keep the lines fifteen yards apart.
- c. As the ball is snapped from center, have the first man in each line run out as receiver. After the receiver has had an opportunity to catch the ball, he returns to the rear of his line and the next man in line goes out as a receiver. Pivots, cutting at angles, and swing-arounds are practiced by the receivers during the drill.

Scrimmage.

Meeting IV

Presentation of Kicking.

- 1. Instruction.
 - a. Punt.

- (1) Assume a comfortable stance with the kicking foot in front of the other foot.
- (2) Bend the body well forward from the buttocks with weight on the back foot.
- (3) Turn the ball inward and downward as it is dropped on the instep.
- (4) Take a short step with the right foot, one full step with the left foot, and follow through kicking the ball.
- (5) Keep the eyes on the ball.

b. Kick off.

- (1) Keep the eyes on the ball.
- (2) Run easily and have body under control when approaching the ball.
- (3) Kick the ball.
- (4) Follow through.

2. Demonstration.

3. Drill.

- a. Divide the members of each flight into two lines.
- b. Keep the lines thirty-five yards apart and the men facing one another.
- c. Give each member an opportunity to punt and to kick the ball.

Scrimmage.

Meeting V

Presentation of Blocking.

1. Instruction.

a. Line.

- (1) Spread feet a comfortable distance apart with toes pointed straight ahead.
- (2) Have the buttocks low.
- (3) Lean forward touching one hand to the ground between the feet.
- (4) Keep eyes straight ahead and head up.
- (5) Make contact with the shoulder.
- (6) Use short digging steps.

b. Downfield.

- (1) Keep arms close to body.
- (2) Do not leave feet.

2. Demonstration.

3. Drill.

- a. Divide the members of each flight into two lines, one yard apart and with the men facing each other.
- b. Number the lines one and two.
- c. On a given signal have the members of line one block the members of line two. On the next signal have the members of line two block the members of line one.

Scrimmage.

Meeting VI

Presentation of Centering.

1. Instruction.

- a. Place right foot slightly in advance of the left foot with the feet well apart.
- b. Keep back straight and buttocks low.
- c. Use the same position of the forward hand on the ball as is used for the forward pass.
- d. Use the other hand for a guide, and place it slightly to left center of the ball.

2. Demonstration.

3. Drill.

- a. Divide the members of each flight into two lines.
- b. Keep the lines five yards apart and facing in the same direction.
- c. Have the first man in each line center the ball to the man behind him, the second man to the man behind him, and so on down the line until each man has centered the ball.

Scrimmage.

Meeting VII

Presentation of Pass Defense.

1. Instruction.

- a. Stay between receiver and goal.
- b. Use split vision.

- c. Keep good body balance.
2. Demonstration.
3. Drill.
 - a. Line the members of each flight across the field so that they are facing the instructor.
 - b. On given signals from the instructor, have the men run right, left, backward, and forward.

Scrimmage.

Meetings VIII, IX, X, XI, and XII

Competitive team play.

Volleyball

Objectives

The objectives of the course given in volleyball are:

1. To develop agility and alertness.
2. To develop coordination.
3. To develop anticipation and timing.
4. To develop skills.
5. To develop team work through participation in a competitive activity.

Facilities and Equipment

The facilities and equipment used in the volleyball program are:

1. Fifteen outdoor courts.
2. Five sheltered courts.

3. Twenty volleyballs.

Organization

The flight athletic officer organizes the teams of his flight and assists in organizing composite teams of any odd men left out of the different flights. There are six men to each team. Officials are not used in conducting the game.

For instruction and demonstration of certain points of the game, the teams are grouped at one court. Then each team is lined up in single file next to the team with which it is to compete. Balls are passed out to alternate teams, after which competing teams double time to the playing courts.

The teams within the squadron play by a regular schedule. A Round Robin tournament is used.

Methods and Procedures

The course in volleyball consists of twelve meetings. The meetings are held on Tuesdays, Thursdays, and Saturdays for a period of three weeks. The first meeting is used for a discussion of the objectives of the course and of the rules of the game.

The next seven meetings are devoted to the teaching and demonstration of the skills of the game, to drills, and to play. Only a few skills are explained at the beginning of each meeting. A short drill dealing with the skills explained then follows. The remainder of the period is devoted

to play.

The last four meetings are devoted to competitive play.

Meeting I

The first meeting is held in the gymnasium with members of the squadron seated in the bleachers. The objectives of the course and the rules taken from an official rule book are discussed. The fact that volleyball is not as strenuous as other sports offered but that a great deal of alertness and agility can be developed through playing the game is brought out.

Meeting II

Presentation of the serve.

1. Instruction.
 - a. Stand with left side to the net.
 - b. Hold ball in left hand with the arm in a diagonal position.
 - c. Strike ball with heel and knuckles of the right hand, using a definite underhand motion.
 - d. Follow through with right hand.
2. Demonstration.
3. Drill.

Playing the game.

Meeting III

Presentation of Passing of a High Ball.

1. Instruction.
 - a. Keep the backs of the hands before the eyes

with the thumbs and forefingers almost touching.

- b. Flick the ball with the fingers, keeping the palms out of play.
- c. Keep the pass high.
- d. Place the ball so that the set-up man will not have to move in order to handle the ball.

2. Demonstration.

3. Drill.

- a. Practice passing of a high ball.
- b. Review and practice the serve.

Playing the game.

Meeting IV

Presentation of Passing of a Low Ball.

1. Instruction.

- a. Keep the palms and the thumbs pointed up.
- b. Pass the ball with a lifting motion, using only the fingers.
- c. Pass the ball so that the set-up man will not have to move in order to handle the ball.

2. Demonstration.

3. Drill.

- a. Practice passing low and high balls.
- b. Review and practice the serve.

Playing the game.

Meeting V

Presentation of Handling of the Ball on a Set-Up.

1. Instruction.
 - a. Handle the ball the same as on the pass.
 - b. Place the ball five feet above and twelve inches away from the net.
 - c. Pivot on the right foot and face the spiker at all times.
2. Demonstration.
3. Drill.
 - a. Practice handling the ball on a set-up.
 - b. Review and practice the serve.
 - c. Review and practice the passes.

Playing the game.

Meeting VI

Presentation of the Spike.

1. Instruction.
 - a. Jump into the air facing the net.
 - b. Spike the ball by snapping the wrist with an open hand and fingers so as to top the ball for control.
 - c. Strike the ball as it reaches its maximum height.
2. Demonstration.
3. Drill.
 - a. Practice spiking the ball.

- b. Review and practice the serve.
- c. Review and practice the passes.
- d. Review and practice the handling of the ball on a set-up.

Playing the game.

Meeting VII

Presentation of Blocking

- 1. Instruction.
 - a. Face the net with the arms extended above the head.
 - b. Keep the eyes on the ball and jump up to block the ball with open hands as it crosses the net.
- 2. Demonstration.
- 3. Drill.
 - a. Practice blocking.
 - b. Practice spiking.

Playing the game.

Meeting VIII

Review of Previous Instruction.

Playing the game.

Meetings IX, X, XI, and XII

Competitive team play.

Tumbling

Objectives

The objectives of the course given in tumbling are:

1. To help prevent air sickness, experienced by many beginning flyers.
2. To enable the student to maintain his sense of direction and balance.
3. To develop coordination and quick thinking.
4. To teach the student the correct method of falling and landing.
5. To develop skills.
6. To develop strength.

Facilities and Equipment

The facilities and equipment used in the tumbling program are:

1. Ample gymnasium or ground space for mats.
2. One hundred ropes, six feet in length.
3. Four large mats.

Organization

Mat arrangement.--The mats are arranged in a straight line ten feet apart. Special care is taken to see that the mats do not overlap as overlapping mats are often the cause of sprained ankles.

Student arrangement.--The students are marched in a squadron formation to the gymnasium by the squadron athletic

officer.

At the first meeting the students are seated in the bleachers for a lecture and the showing of a film. At each succeeding meeting the students are divided and lined up in a column of fours facing the mats.

Methods and Procedures

There are twelve meetings. The first meeting is devoted to a lecture and to the showing of a film. The other eleven meetings are devoted to the instruction, demonstration, and practice of tumbling.

Meeting I

The students are given a lecture which deals with the objectives and values of the course and the safety measures to be observed. The three following paragraphs cover the theme of the lecture.

Tumbling is introduced with the idea of enabling the student to maintain his sense of direction and balance and to prevent a part or all of the air sickness experienced by many beginning flyers.

Before tumbling was brought into the physical training program, a large number of students were affected by air sickness. After tumbling was introduced and brought into the program before the students started flying, very few students were bothered with air sickness. Another important value of the course given in tumbling is to teach the student

to fall without injuring himself, as in a later stage of his training he is given courses in hand-to-hand combat fighting and in parachute-jump landing. In both of these courses, it is imperative that the student know the correct method of falling and landing to prevent injuries.

Safety in tumbling is of paramount importance. It is imperative that the head and neck be protected from injuries, and that jars and shocking surprises be prevented. Trained spotters are used at all times. A six foot rope which is used as a safety belt is issued to the student at the first meeting and is kept by him throughout the course.

A film covering the above points is shown to the students after the lecture.

Meeting II

Presentation of the Forward Roll.

1. Instruction.

- a. Assume a squat position with the weight on the toes.
- b. Place finger tips on the mat.
- c. Shift weight to the hands, duck the head, and push with the feet.
- d. Roll on shoulders and back.
- e. Rise to a standing position.

2. Demonstration.

Practice.

Meeting III

Presentation of the Shoulder Roll (Left).

1. Instruction.
 - a. Start from a standing position.
 - b. Turn head and right shoulder to the right.
 - c. Lean forward.
 - d. Push off from a stride position.
 - e. Land on back of left shoulder blade.
 - f. Roll over back and buttocks muscles.
 - g. Resume standing position.
2. Demonstration.

Practice.

Meeting IV

Presentation of the Backward Roll.

1. Instruction.
 - a. Squat near the edge of the mat with the back toward the mat.
 - b. Place the hands, with palms up and fingers spread, behind the shoulders, knees under the chin, and roll backward.
 - c. Place weight on the hands and push, keeping strain from the neck.
 - d. Land on feet in a squatting position.
2. Demonstration.

Practice.

Meeting V

Presentation of the Dive.

1. Instruction.
 - a. Jump off both feet.
 - b. Break fall with the hands and arms.
 - c. Duck the head, roll on the shoulders and back, and come to a standing position.
2. Demonstration.

Practice.

Meeting VI

Presentation of a Combination of Rolls and Dives.

1. Instruction.
 - a. Do a forward roll.
 - b. Just before completing the roll, cross right foot over left foot, turn counter-clockwise, and immediately do a low backward roll, coming to a stand.
 - c. Do a forward roll.
 - d. Just before completing the roll, cross left foot over right, turn clockwise, and immediately do a low backward roll, coming to a stand.
 - e. Start with a dive.
 - f. Upon completion of the dive, do two forward rolls, cross right foot over left, turn counter-clockwise and do a low backward roll, coming to a stand.

- g. Do a forward roll.
- h. Upon completion of the forward roll, dive, and come to a standing position.

2. Demonstration.

Practice.

Meeting VII

Presentation of the Head Balance.

1. Instruction.

- a. Place head and hands in a triangular position on the mat.
- b. Raise hips as high as possible.
- c. Then raise legs to an overhead position one at a time.
- d. Arch the back and point the toes.
- e. Keep the knees straight.

2. Demonstration.

Practice.

Meeting VIII

Presentation of the Cart Wheel.

1. Instruction.

- a. Run a short distance, skip on the right foot, and take off on left.
- b. Turn body sideways, place left hand on mat, and kick right leg upward.
- c. Place right hand to mat, then right foot, followed by left foot.

d. Keep the legs straight and back arched.

2. Demonstration.

Practice.

Meeting IX

Presentation of the Hand Spring.

1. Instruction.

- a. Run a short distance and skip on last step.
- b. Place hands on the mat near the take-off foot.
- c. Kick the back leg up as hands go down.
- d. Bend arms slightly. Then straighten arms as legs go over.
- e. Arch the back.
- f. Land with knees slightly bent.

2. Demonstration.

Practice.

Meeting X

Presentation of the Assisted Front Somersault.

1. Instruction.

- a. Bottom man.
 - (1) Lie back, legs and arms extended upward with knees slightly flexed.
 - (2) Place feet in top man's groin, turn toes outward, and place hands on partner's shoulders as he rocks forward.
 - (3) As top man's weight is well overhead, push with legs.

b. Top man.

- (1) Face bottom man, grasping his ankles.
- (2) Rest pelvic bones against soles of feet of bottom man and rock forward.
- (3) Keep heels close to buttocks.
- (4) At height of throw extend legs, arch back, and land on both feet.

2. Demonstration.

Practice.

Meeting XI

Presentation of the Back Somersault.

1. Instruction.

- a. Assume a standing position.
- b. Push upward and backward with both feet.
- c. Attain as much height as possible.
- d. Snap head backward and downward, bringing the knees up to the chest.
- e. Bend knees slightly before landing.

2. Demonstration.

Practice.

Meeting XII

Review:

1. Rolls.
2. Dive.
3. Combination of Rolls and Dives.
4. Head Balance.

5. Cart Wheel.
6. Hand Spring.
7. Assisted Front Somersault.
8. Back Somersault.

Swimming

Objectives

The objectives of the course given in swimming are:

1. To equip the student with the fundamental basic skills necessary to meet any emergency which might confront him in a swimming situation.
2. To give the student confidence in his ability to swim.
3. To enable the student to stay afloat for an indefinite period of time.

Facilities and Equipment

The facilities and equipment include:

1. One tile pool, one hundred feet by sixty feet, with forty-five feet by sixty feet of shallow water.
2. One three-meter diving board.
3. One one-meter diving board.
4. Two sets of parachute harness.
5. Twenty-five showers.
6. Eight toilets.
7. One footbath at each entrance to pool.

8. A recirculating filtering system.

The water is treated with chlorine through the filter system with the chlorine content kept between four parts and six parts per million of residue chlorine.

The pool room is heated by four blower-type gas heaters, with the room temperature kept between 80 and 85 degrees Fahrenheit, while the water is heated by passing over hot steam coils before being pumped into the pool. The water temperature, which is kept between 78 and 80 degrees Fahrenheit, is considered high by some authorities, particularly those in the Northern states; however, it is believed desirable to have the water at a comfortable temperature in the teaching of beginners, as it aids considerably in relaxing the student and in keeping him comfortable during a class period. Several authorities, among whom are Luehring¹ and Carson,² subscribe to the above theory.

Methods for Classifying Students

Each new squadron is given a swimming test, which includes the dog paddle, elementary back stroke, and side stroke, within three days after reporting to the Detachment. Immediately preceding the test the squadron is seated in the bleachers above the pool and given a pre-test lecture and

¹F. W. Luehring, Swimming Pool Standards, p. 185.

²G. H. Corson, Sr., The Diving and Swimming Book, p. 4.

demonstration. The lecture deals with the proper method of swimming the strokes, the importance of swimming to Servicemen, the hours during which the pool is open for free swimming, and the method to be used in administering the test. The squadron is then organized for the test. Four instructors are used in administering the test; two at the shallow end and two at the deep end. The men are lined up in single file around the pool in alphabetical order, with the first men in line being at the shallow end of the pool on the west side. As each man's name is called, he swims, or attempts to swim across the pool using the dog paddle. If he fails this test, his name is taken and he is directed to leave the pool. If he passes this test he continues down the east side of the pool to the deep end where he is tested by the other instructors on the back stroke. If he fails the back stroke test, his name is taken, and he, also, is instructed to leave the pool. Should he pass the back stroke test, he continues up the west side of the pool to the shallow end once more, where he is tested on the side stroke. When the test is finished, the squadron is divided into two groups -- non-swimmers, those who are to take an elementary course in swimming, and swimmers, those who are to take a functional course in swimming.

The non-swimmers now are divided into two groups -- those who failed the dog paddle test and those who failed the back and side stroke tests. The group who failed the

dog paddle test is given one hour of instruction for six days previous to the calling in of the other non-swimmers. The object in having those men who are unable to stay afloat at all to report early is to give the instructor a chance to concentrate on a smaller number of students who need help more than those who already can stay afloat. At the first meeting of these non-swimmers they are given a pre-instruction lecture. The class is then counted off by two's; odd numbers are told to report to the east side of the pool, and the even numbers to the west side of the pool. In the instruction of this group of non-swimmers, they are told to work from the side of the pool to the middle. Each group on each side of the pool then counts off by four's; then as each student's number is called he moves to the middle of the pool and stays until his number is called again. At that time he moves back to the side of the pool. This method of class organization is used for the first six days. When the remainder of the group reports (those who failed the side stroke and back stroke), the whole class is lined up down the east side of the pool and counted off by four's. As each student's number is called, he enters the water upon signal of a whistle, assumes position along the bank and practices the skill being taught. On land drills the class is lined up on three sides of the pool. This group of non-swimmers is given one hour of instruction for four days of each week for a period of four weeks.

The class for functional swimming is organized in the same way as the class for the entire group of non-swimmers. The group of functional swimmers is given an hour of instruction for ten days during the twelfth, thirteenth, fourteenth and fifteenth weeks.

Content of Swimming Courses for Non-Swimmers

The class for non-swimmers is made up of those men who failed the test on the dog paddle, the back stroke and the side stroke.

Meeting I

At the first meeting of all the non-swimmers, the students are given a lecture on the object of the course. The importance of being able to stay up for a long period of time under war-time conditions is brought out, and several instances in which swimming has saved the lives of Servicemen are cited. The group is made to realize that one of the biggest difficulties in teaching adults to swim often is their intense desire to learn and their determination to follow instructions. Because the instruction is so simple, the average adult feels that he should be able to swim as soon as the instruction is given him. This combination of determination and desire to do exactly as the instructor has stated, and to swim immediately leads to tenseness and fighting of the water. Those two things are the greatest foe of

the average adult in learning to swim.

The fact that many brave men are afraid of the water is brought out. If the student is afraid of the water he is asked to admit it to himself, and should the instructor ask him to do something that he is afraid to do, he is to inform the instructor quietly of this fact. This student then is given special consideration, and the tempo of instruction often is modified in his case. The students are advised that most intelligent people can reason with themselves to see that there is no need to be afraid of water, when the water is shallow and the instructor is standing by. However, the student is advised that it is his sub-conscious mind that he has to convince. With this in mind the student is asked to do numerous simple exercises, but under no condition to force himself too much.

The above method of overcoming fear was introduced at Texas Agricultural and Mechanical College by Mr. A. D. Adamson, swimming instructor, and has proved extremely successful. No one in the courses given has required special attention in shallow water after a pre-instruction lecture such as the above, and less than one per cent has asked for special help when the class was moved out in deep water. These few men who did request special help were able to overcome the greatest part of their fear in less than ten minutes by careful handling.

After the lecture the students are taught the proper

method of submerging the face in the water, the proper method of opening eyes under the water, the jelly fish float, and the prone float, the first two of which are to aid the student in overcoming his fear of the water, and the last two of which are to teach the student the buoyancy and floatability of his body.

The class is requested to get into the water, take hold of the scum gutter, and keep feet planted firmly on the bottom of the pool and are instructed in the above four exercises as follows:

1. Submerging face in water.

- a. Take a deep breath, keeping eyes and mouth tightly closed.
- b. Lean body forward. Submerging should be a gradual process, from just touching the nose to complete submersion of face. A five-or-six second period is suggested at first, with thirty seconds as the goal.

2. Opening eyes under water.

- a. Take a deep breath, close eyes, and submerge face.
- b. Open eyes after face is under water.

This method does away with the possibility of the eyelashes turning back into the eyes, which sometimes causes a great deal of discomfort. This process is also gradual -- from

a few seconds at first until the thirty-second goal is reached.

3. Jelly Fish Float.

(The instructor does not get into the water to demonstrate this exercise, nor does he use the term "jelly fish float" when speaking of this exercise.)

- a. Take a deep breath and grab knees, bringing them up to the chest.
- b. Assume this position on command, and keep feet on the bottom of the pool.

(This usually brings forth a chorus of shouts from the students that their feet will not stay on the bottom of the pool, and that they keep coming to the top. This is exactly what the instructor has desired. By means of a surprise approach he has convinced them of the buoyancy of their bodies.

4. Prone Float.

- a. Keep one foot on the bottom of the pool and one foot on the side of the pool, with hips resting on the side of the pool.
- b. Place hands out in front so that they are lying flat on the surface of the water.
- c. Take a deep breath and place head in the water with the eyes open.

- d. Lean forward until the body feels as if it is losing balance. Then push with both feet. This does away with the jumping motion which makes the prone float difficult.

Meeting II

In the second meeting and in all of the meetings to follow, the instructor demonstrates the skills to be practiced in the water at the shallow end of the pool. Thus, each student can observe from his position along the side of the pool. The second meeting includes:

Presentation of the Prone Float.

1. Instruction and demonstration.
2. Practice of the prone float.

Presentation of the Flutter Kick.

1. Instruction and demonstration.
 - a. Support the body at the side of the pool by grasping the scum gutter with one hand and pushing against the wall with the other hand. Keep the body in a horizontal position.
 - b. Have the power of the kick come from the whole body. Stress the drive from the hips.
 - c. Stress loose knee and loose ankle action.

Presentation of the Dog Paddle.

1. Instruction and demonstration.

- a. Combine the flutter kick with the underwater arm stroke.
 - b. Use two leg beats to each arm stroke.
2. Practice of the dog paddle.

Meeting III

Practice of the Flutter Kick.

Practice of the Dog Paddle.

Meeting IV

Presentation of the Sculling.

1. Instruction and demonstration.
 - a. Take a deep breath.
 - b. Emphasize good push off, good body position, and the flutter kick.

Practice of Sculling.

Practice of the Dog Paddle.

Meeting V

Practice of the Dog Paddle.

Practice of Sculling.

Meeting VI

Presentation of the Side Stroke.

1. Instruction and demonstration of the scissor kick.
 - a. Lie on side with legs extended.
 - b. Double legs and feet together.
 - c. Bring top leg forward, bottom leg backward,

- and keep legs bent at knees.
- d. Use a scissor action with both legs driving together and extended.
2. Instruction and demonstration of the arm stroke.
 - a. Extend lower arm with the upper arm at the side.
 - b. Bring lower arm downward without bending until hand is about eight inches from the thigh,
 - c. Then bend elbow of lower arm and hold close to the side while bringing the palm of the hand close to and across the chest to a point directly in front of right shoulder.
 - d. Just after lower arm starts downward, bend upper arm at the elbow and bring palm of hand upward across the chest almost touching the upper hand as it crosses chest.
 - e. Then extend lower arm to starting position while straightening and bringing lower arm downward to and in front of the chest to starting position.
 3. Instruction and demonstration of the combination of arm and leg movements.
 4. Practice of side stroke.

Meeting VIII

Practice of Sculling.

Practice of the Side Stroke.

Meeting IX

Presentation of Treading Water, Stressing Relaxation.

1. Instruction and demonstration.
 - a. Use inverted scissor kick with a finning or sculling of the hands in front of the body.
 - b. Use a bicycle kick in finning with hands.
 - c. Use a relaxed leg and arm movement.
2. Practice treading water.

Meeting X

Presentation of Jumping into Deep Water from Height.

1. Instruction and demonstration.
 - a. Jump into water feet first with arms overhead.
 - b. Pull arms to side to regain surface.
 - c. Tread water, level off and swim, using any style.
2. Practice of jumping into deep water from height.
3. Practice of the side stroke.

Meeting XI

Presentation of Elementary Back Stroke.

1. Instruction and demonstration.
 - a. Inverted frog kick.
 - (1) Draw feet up and together with knees separated.
 - (2) Push feet out and back until feet are spread and legs are extended.

- (3) Bring legs and feet together.
- b. Arm movement.
 - (1) Place hands at side.
 - (2) Bring hands up each side of body to armpits.
 - (3) Extend arms full-length out from body.
 - (4) Bring arms straight down to sides of body.
- c. Combination of inverted frog kick and arm movement.

Practice of Elementary Back Stroke.

Meeting XII

Practice of Elementary Back Stroke.

Meeting XIII

Presentation of the Surface Diving.

1. Instruction and demonstration of surface diving.
 - a. Duck head and shoulders.
 - b. Pull hips up.
 - c. Slide into water in a jack-knife position, legs and feet following, body and hips down.

Practice in Surface Diving.

Meeting XIV

Presentation of Method of Releasing Cramps.

1. Instruction and demonstration of method of relaxing cramps of foot.
 - a. Tread water.
 - b. Take a deep breath.

- c. Reach forward, grasping foot in both hands, one hand on heel, and one hand on toe.
- d. Force foot slowly into a doubled position. This stretches the cramped muscle back to the normal position and helps relax them.

2. Instruction and demonstration of method of relaxing cramps from leg.

- a. Reach forward with both hands and knead the cramped muscle with the fingers.
- b. After relieving the cramp, use affected leg as little as possible to avoid recurrence.

Practice in Relaxing Cramps.

Meeting XV

Presentation of Floating on Back.

- 1. Instruction and demonstration.
 - a. Take a deep breath.
 - b. Fold arms across chest.
 - c. Remain motionless and relaxed, allowing body to float.

Practice of Floating.

Meeting XVI

Test over contents of previous fifteen meetings.

Content of Swimming Courses for
Functional Swimmers

The class of functional swimmers is made up of those men who passed the test on the dog paddle, the back stroke and the side stroke, and those men who have completed the elementary course in swimming.

Meeting I

In the first meeting the functional swimmers are given a lecture on the objectives of the course, which include the perfection of the basic skills, the learning of a series of useful variations of the fundamental skills, the practice of swimming under the handicaps imposed by clothing, equipment and weapons, and the learning of personal safety skills, rescue skills and artificial respiration methods.

The first meeting also includes:

Presentation of the Breast Stroke.

1. Instruction and demonstration of the kick.
 - a. Double legs, knees apart, feet together and drawn up.
 - b. Kick feet backward and spread, pushing water with soles of feet.
 - c. Before legs reach full extended position, drive them together, finishing up with the legs fully extended, feet together.
2. Instruction and demonstration of the arm movement.
 - a. Extend arms over head.

- b. Pull arms sideward and downward to arms side-ward position.
 - c. Recover arms to front of chest.
 - d. Shoot arms up to return to erect position.
3. Instruction and demonstration of the combination of kick and arm movement.
 - a. Execute a deep knee bend at the same time the arms are brought to the front of the chest.
 - b. Drive with legs at the same time the arms shoot up to return to the erect position.
 4. Explanation of the importance of the breast stroke to wartime swimming.
 - a. It is an energy-conserving stroke.
 - b. It provides swimmer with silent propelling movements.
 - c. It permits high carriage of head in water where surface is strewn with wreckage and heavy sea oils.

Practice of the Breast Stroke.

Review and Practice of the Side Stroke.

Meeting II

Presentation of the Plunge Dive.

1. Instruction and demonstration of plunge dive:
 - a. Plunge for distance.
 - b. Enter water with as little splash as possible.

- c. Keep body at a 30 or 40-degree angle.
- d. Importance to wartime swimming:
 - (1) Enables individual to cover considerable distance without effort.
 - (2) Enables individual to slide harmlessly beneath floating oil or debris.

Presentation of Swimming with Splash Recovery.

- 1. Instruction and demonstration.
 - a. Jump with arms around head, emerge, splashing surface of water violently with both hands before head emerges.
 - b. Do feet-first surface dive, swim several feet under water violently with both hands to clear imaginary burning oil before head emerges.
 - c. Importance to wartime swimming:
 - (1) It is possible to emerge in burning oils after jumping from plane or ship.
 - (2) May be of use in clearing water from area covered with burning oils.

Practice of the Plunge Dive.

Practice in swimming with a splash recovery.

Meeting III

Presentation of Method of Swimming Silently.

- 1. Instruction and demonstration.
 - a. Use either the breast stroke or the side stroke.

- b. Carry the body low and angled downward so that the feet are at least eighteen inches below the surface.
- c. Let neither the hands nor the feet break the surface of the water.
- d. Breathe silently through the mouth.
- e. Importance to wartime swimming:
 - (1) Enables swimmer to conceal his whereabouts from the enemy.

Presentation of Method of Swimming with Legs and One Arm.

1. Instruction and demonstration.

- a. Use side stroke with top arm out of water, using shallow arm pull with lower arm.
- b. Importance to wartime swimming:
 - (1) Is invaluable in case of injury to one arm or shoulder.
 - (2) One hand may be used to carry materials or weapon.
 - (3) May be used when necessary to tow buddy to safety.

Practice in Swimming Silently.

Practice in Swimming with Legs and One Arm.

Meeting IV

Presentation of Method of Swimming with Legs Only.

1. Swimming with legs only.

- a. Swim on the back with hands held out of the water, using the inverted frog kick, inverted scissor kick, or an unorthodox combination of inverted frog and scissor kick.
- b. Importance to wartime swimming:
 - (1) Is valuable in case both arms are injured.
 - (2) May be used when it is necessary to tow a buddy to safety.

Presentation of Submersion and Under-water Swimming.

- 1. Instruction and demonstration.
 - a. Use feet-first submersion until well under water.
 - b. Duck head, lift hips, and swim under water.
 - c. Importance to wartime swimming:
 - (1) May be used to escape from wreckage of plane.
 - (2) May be used to escape strafing.
Two or three feet of water overhead may be used effectively.

Presentation and Method of Jumping from Heights.

- 1. Instruction and demonstration.
 - a. Jump into water feet first, with arms overhead.
 - b. Pull arms to sides to regain surface.
 - c. Tread water, level off and swim, using any style.
 - d. Importance to wartime swimming:

(1) Feet first is the safest way to jump when depth is unknown.

(2) Feet first is the safest way to abandon ship or plane.

Practice in Swimming with Legs Only.

Practice in Submersions and Underwater Swimming.

Practice in Jumping from Heights.

Meeting V

Presentation of Method of Swimming, Floating, Submerging and Swimming under Water While Fully Clothed.

1. Instruction and demonstration.
2. Importance to wartime swimming:
 - a. Enables the swimmer to disappear quickly.
 - b. Enables the swimmer to conceal his position from the enemy.

Practice in Swimming, Floating, Submerging and Swimming under Water While Fully Clothed.

Meeting VI

Presentation of Method of Removing Clothes in Deep Water.

1. Instruction and demonstration.
 - a. Face-downward floating offers the best opportunity to remove shoes and clothings in water.
 - b. Normally the pants and shirts are not removed, but are kept on for protection against exposures.

2. Importance to wartime swimming.

- a. Often has to be done to enable one to stay afloat for a long period of time.
- b. Keeps swimmer from becoming fatigued in a short period of time.

Presentation of Method of Shirt-tail Life Saving.

1. Instruction and demonstration.

- a. Inflated duffle bag, sea bag or pillow slip:
 - (1) Hold by open end, bag hanging behind back. Swing overhead as you jump.
 - (2) Hold tight upon entering water, and keep open and below surface.
 - (3) Gather and close mouth of bag by pulling drawstring.
 - (4) Always keep mouth of bag below water so that the air will not escape.
- b. Inflated shirt collar:
 - (1) Button shirt collar securely, pull front of shirt out of the trousers, and hold down firmly with the hands.
 - (2) Jump, holding shirt front down. A bubble of air will form in upper part above the shoulders.
 - (3) Keep shirt collar tight, and carry arms low; the air will be retained for some time.

- (4) Renew by ducking head forward under water and blowing air into the front shirt, opening from time to time.
- 2. Explanation of shirt-tail life saving's importance to wartime swimming.
 - a. Enables one to stay afloat for a longer period of time.
 - b. Prevents fatigue.

Practice in Removing Clothes in Deep Water.

Practice in Shirt-tail Life Saving.

Meeting VII

Presentation of Rescue Methods.

- 1. Instruction and demonstration.
 - a. Tired swimmer's carry.
 - (1) Approach buddy, tell him to assume floating position on his back, and to place his hands on your shoulders with his arms straight.
 - (2) Use the breast stroke, pulling him along in front.
 - b. Towing one by wrist.
 - (1) Seize the back of the wrist, holding buddy at arm's length.
 - (2) Swim away, towing buddy along on his back, using the modified side stroke.
 - c. Collar carry.

- (1) Grasp the back of the collar.
- (2) Swim off, using the modified side stroke.
- d. Cross-chest carry.
 - (1) Approach the victim from the rear, reach over his shoulder, crossing arm across his chest, hand under his armpit.
 - (2) Tow victim, using side stroke, shadow arm pull.
2. Explanation of the importance of rescue method to wartime swimming.
 - a. Enables one to save another's life.
 - b. Gives the student confidence in his ability to rescue another.

Practice of Rescue Methods.

Meeting VIII

Presentation of Method of Resuscitation.

1. Instruction and demonstration of the prone pressure method.

For details refer to the American Red Cross Life Saving and Water Safety, Chapter VI.

Practice of Resuscitation.

Meeting IX

Presentation of Method of Releasing One's Self from Parachute Harness over Water.

1. Instruction and demonstration.

- a. Release parachute harness before entering the water.
- b. Swim into the wind to prevent becoming entangled in parachute.
- c. Importance to wartime swimming.
 - (1) Prevents students from becoming entangled in harness.
 - (2) Enables students to stay afloat for a long period of time.

Practice in Releasing One's Self from Parachute Harness
Over Water.

Presentation of Method of Releasing Cramps.

1. Instruction and demonstration of removing cramps from the foot.
 - a. Tread water.
 - b. Take a deep breath.
 - c. Reach forward, grasping foot and both hands, one hand on heel, one hand on toe.
 - d. Force foot slowly into a doubled position.
This stretches the cramped muscles back to the normal position and helps relax them.
2. Instruction and demonstration of releasing cramp from the leg.
 - a. Reach forward with both hands and knead the cramped muscle with the fingers.
 - b. After relieving the cramp, use affected leg as

little as possible to avoid reoccurrence.

3. Explanation of the importance of method of releasing the cramps to wartime swimming.
 - a. May enable swimmer to save his life.
 - b. Prevents fear.

Practice in Releasing Cramps.

Meeting X

Test on the Contents of Previous Meetings:

1. Swim the sidestroke correctly for one hundred yards.
2. Swim the elementary back stroke easily. No distance is required because if swimmer can do it easily he can do it for miles.
3. Swim the breast stroke correctly for fifty feet.
4. Do a splash dive and make a splash recovery.
5. Swim silently for two minutes.
6. Swim with legs and one arm for fifty feet.
7. Swim with legs only for fifty feet.
8. Swim under water from a surface dive for twenty-five feet.
9. Remove clothes in deep water.
10. Carry a man sixty feet, using cross-chest carry.
11. Carry a man sixty feet, towing him by wrist or using collar carry.
12. Remove parachute harness correctly before entering water.

13. Demonstrate correct method of releasing cramps in both legs and feet.
14. Demonstrate prone pressure method in resuscitation.

Intramural Program

Objectives

The objectives of the intramural program are:

1. To provide opportunity to participate in activities.
2. To develop speed, coordination and quick thinking.
3. To develop ruggedness, endurance, and strength.
4. To build up interest in sports within the squadrons.
5. To develop teamwork.
6. To develop competitive spirit.

Facilities and Equipment

The facilities and equipment used in the intramural program are:

1. One 440-yard cinder track.
2. One tile swimming pool, one hundred feet by sixty feet.
3. Two regulation touch football fields.
4. Two regulation basketball courts.
5. Two regulation volleyball courts.
6. Two regulation softball diamonds.
7. One public address system.

8. Five batons.
9. One set of high jump standards with cross bar.
10. One twelve pound shot.
11. Two footballs.
12. Two basketballs.
13. Two volleyballs.
14. Twenty softball gloves.
15. Two catcher's masks.
16. Twelve softball bats.
17. One pistol with ample number of shells.
18. Approximately twelve softballs.
19. Two stop watches.
20. One finish string.

Organization

Squadron Competition.--An athletic officer for each flight is appointed by the squadron athletic officer. It is the duty of the flight athletic officer to select members from his flight to participate in squadron competition.

Three weeks before the squadron graduates the squadron intramural program is begun and is held for approximately one week. A Round Robin tournament is used in all sports except in track and in swimming in which a regular meet is held. The intramural program is not brought in during the scheduled physical training period, but during the men's free time. Competition in touch football, basketball,

volleyball, and softball is held on each week day from six until eight o'clock. The swimming meet is held on Friday from eight until ten o'clock. The track meet is held on Saturday from eight until ten o'clock.

Wing Competition.--The squadron athletic officer selects the best members from the teams of each flight within his squadron to participate in wing competition.

Two weeks before the squadron graduates the wing intramural program is begun and is held for approximately two weeks. A Round Robin tournament is used in all sports except in track and in swimming in which a regular meet is held. The wing intramural program is not brought in during the scheduled physical training period, but during the men's free time. Competition in touch football, basketball, volleyball, and softball is held in the evening from six until eight o'clock. The swimming meet is held on the first Friday evening from eight until ten o'clock. The track meet is held on the second Saturday morning from eight until ten o'clock.

Methods and Procedures

Touch Football, Basketball, Volleyball, and Softball.--Regulation rules are used in each of these sports except in touch football. The rules used in touch football are discussed under the unit, Touch Football.

A Round Robin tournament is used in each of these sports. This type of tournament is preferred because it permits teams to remain in play after being defeated.

The schedule for squadron and wing competition is:

Squadron (Three flights)

x - 3 x - 2 x - 1
 1 - 2 3 - 1 2 - 3

Wing (Five squadrons)

x - 5 x - 4 x - 3 x - 2 x - 1
 1 - 4 5 - 3 4 - 2 3 - 1 2 - 5
 2 - 3 1 - 2 5 - 1 4 - 5 3 - 4

Swimming.--Regulation rules are used. The events are run off in the following order:

1. One hundred foot backstroke.
2. One hundred foot sidestroke.
3. One hundred foot breaststroke.
4. Two hundred and fifty foot freestyle.
5. One hundred thirty-three and one-third yard medley relay. The first man swims the backstroke for thirty-three and one-third yards; the second man swims the sidestroke for thirty-three and one-third yards; the third man swims the breast stroke for thirty-three and one-third yards; the fourth man swims freestyle for thirty-three and one-third yards.
6. One hundred thirty-three and one-third yard freestyle relay. There are four men with each man swimming freestyle for thirty-three and one-third yards.

Track.--The events are run off according to Interscholastic League rules. The eight hundred and eighty yard relay and the sprint medley relay are added to the list of Interscholastic League events.

Awards

An eighteen inch trophy is awarded to the winning squadron in each of the following sports:

1. Touch football.
2. Basketball.
3. Volleyball.
4. Softball.
5. Track and field.
6. Swimming.

The trophy is kept by the winning squadron until it is won by another squadron.

CHAPTER V

SUMMARY

The present study was undertaken to provide a handbook of instruction for civilian physical training instructors of the 308th College Training Detachment at Texas Agricultural and Mechanical College.

The purpose to be served in formulating a book of instruction was two-fold:

1. To inform physical training instructors of the aims, objectives, contents, facilities and equipment, and teaching methods of the selected physical training program of the 308th College Training Detachment at Texas Agricultural and Mechanical College.
2. To obtain uniformity in the conduct of the physical training program by various instructors.

The procedures that were used to develop the study were:

1. The aims and objectives of the program were formulated.
2. Criteria were formulated for the selection of the contents of the program.
3. Activities for the program were selected on the basis of the criteria.

4. The facilities and equipment needed and available were determined.
5. Principles were formulated to serve as guides to procedures.
6. Teaching methods were determined.
7. The handbook of instruction was written.

The documentary sources of data were bulletins, memoranda, regulations, and circulars sent out by Higher Military Headquarters; books in the field of physical training; and statistics based on the activities of aviation students.

The human sources of data were experts in the field of health and physical training and actual experiences of the author.

The study included a description of those factors of the Administration of the 308th College Training Detachment which were significant to the development of the physical training program. One thousand aviation students were assigned to the detachment for a period of eighteen weeks. Each student was required to take physical training one hour each day, six days per week at a definite scheduled period; therefore, the physical training program began immediately upon the student's assignment to the detachment and continued progressively and uninterruptedly throughout the eighteen weeks.

The aim of the physical training program in the College Training Detachment was to develop in the student that state of physical fitness and mental alertness which is essential

to, and required for, military effectiveness. The study listed the objectives of the program which would develop in the student the above qualities. Criteria were formulated for the selection of the activities of the program. On the basis of these criteria this physical training program was constructed:

<u>Activities</u>	<u>Hours</u>
Testing	2
Calisthenics	21
Running	27
Obstacle course	9
Basketball	9
Touch football	9
Volleyball	9
Tumbling	12
Swimming (functional)	10

The program included an intramural program which was carried on during the students' free hours.

On the basis of the selected physical training program a Handbook of Instruction was written to be used as a guide by physical training instructors of the 308th College Training Detachment. The Handbook presents essential and functional information concerning the aims, objectives, activities, and procedures for the administration and conduct of the selected physical training program of the 308th College Training Detachment. Each activity of the program is treated

separately in the Handbook giving in a concise manner the objectives of the activity, the facilities and equipment needed in administering the activity, and the methods and procedures in teaching the activity.

Recommendations for Further Study

Most physical training programs in the past have been formulated according to the experience or authoritative opinion of a person or persons responsible for outlining the program. Through a long process of trial and error these programs have become more or less uniform and are serving their purpose reasonably well. In the future any refinements of programs now in existence will probably have to be effected through rigidly controlled experimentation. There are numerous fields to be investigated by this method. A suggested study is the comparison of the effect on physical fitness of allowing students to choose their own physical fitness activity as opposed to a program rigidly outlined by the administration.

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