

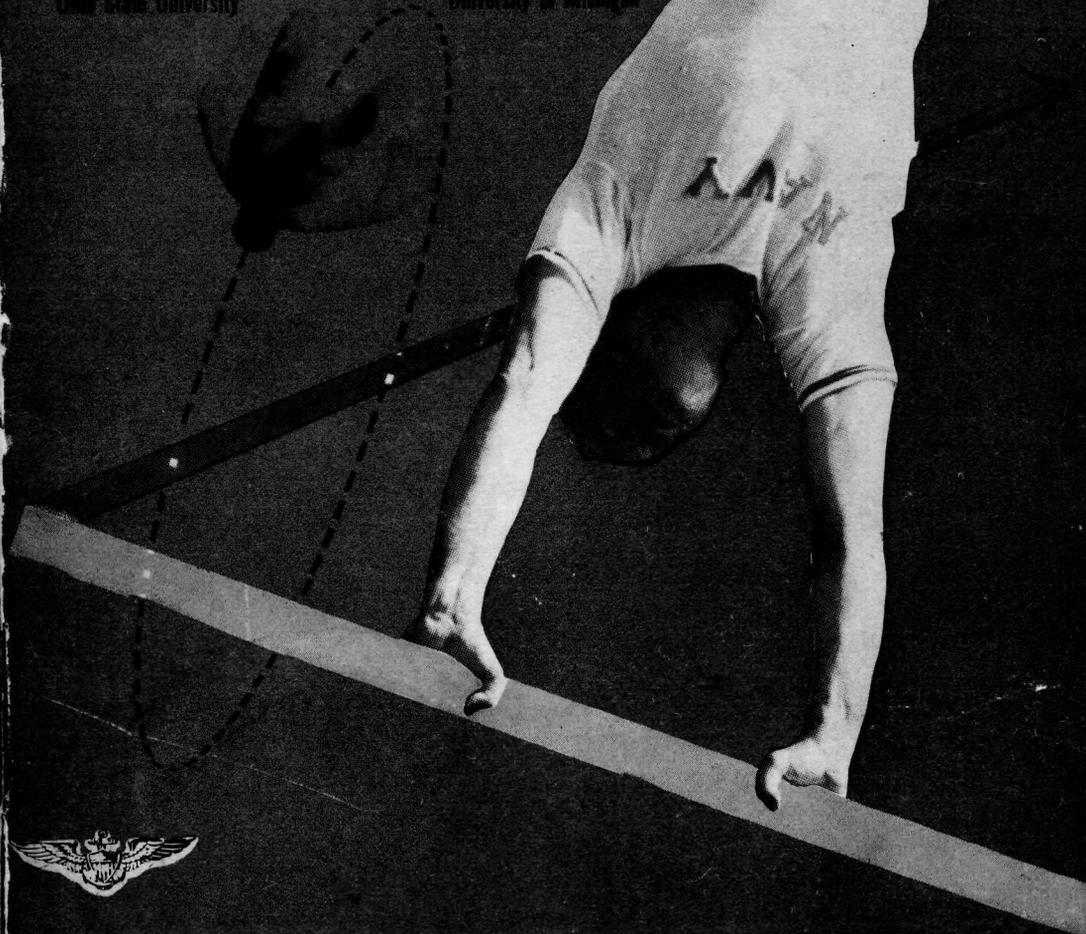
Gymnastics and Tumbling

Revised
by the
V-Five Association (Committee)

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AVIATION TRAINING, OFFICE OF CHIEF OF NAVAL OPERATIONS, U. S. NAVY

GYMNASTICS and TUMBLING

REVISED EDITION

From the Preface

THE Naval Aviation V-5 Physical Training Manuals were prepared and published during World War II to provide the best standardized instruction in the sports selected to give the youths, training to be combat Naval pilots, the maximum physical and psychological benefits. It was the first time that intensive athletic training was used militarily, not only for conditioning and recreation, but to develop and intensify desired qualities, such as quick reaction, coordination, accurate timing, cool judgment, aggressiveness, and determination. It was, without question, the most rigorous mass program conducted in this country utilizing a large group of different sports. Each cadet was required to spend four to six hours a day in intense athletic training for eight months, the time diminishing in later months as other elements of flight and ground training were added. The results were highly successful as proven by the testimony of the high performance of this group of pilots, and the acclaim given them and the training methods by all who observed.

Over two thousand of the nation's leading physical educators and coaches of all sports participated in the planning and operation of this program as Reserve Officers, and most of them actually contributed in the preparation of these Manuals in their own specialty. While in some instances only one author did the final writing, it may in truth be said that the project was conceived and carried out as a group enterprise. The names of those officers who originally compiled and

(Continued on back flap)

U. S. NAVAL INSTITUTE
ANNAPOLIS, MARYLAND

GYMNASTICS AND TUMBLING



AVIATION TRAINING
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
UNITED STATES NAVY







GYMNASTICS AND TUMBLING

THE UNITED STATES NAVAL INSTITUTE, publisher of the Naval Aviation Physical Training Manuals, is a nationwide organization of military and civilian members and affiliations. The Institute was founded, not for profit, but for the advancement of professional, literary, and scientific knowledge in the Navy and among military and civilian contemporaries.

THE INSTITUTE has assumed the responsibility of keeping the Naval Aviation Physical Training Manuals revised and up-to-date in every respect for use by the military services in event of national emergency. Maintenance of high standards of physical fitness in the youth of our nation is considered a prerequisite to national preparedness. With this in mind every effort has been made to insure revisions, through the V-Five Association of America, that are compatible with civilian educational interests.

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The Naval Aviation Physical Training Manuals



GYMNASTICS AND TUMBLING

Revised Edition

PREPARED BY THE
V-FIVE ASSOCIATION OF AMERICA

First Edition

PREPARED BY OFFICERS OF THE
AVIATION TRAINING DIVISION
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
UNITED STATES NAVY



Annapolis, Maryland

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Preface

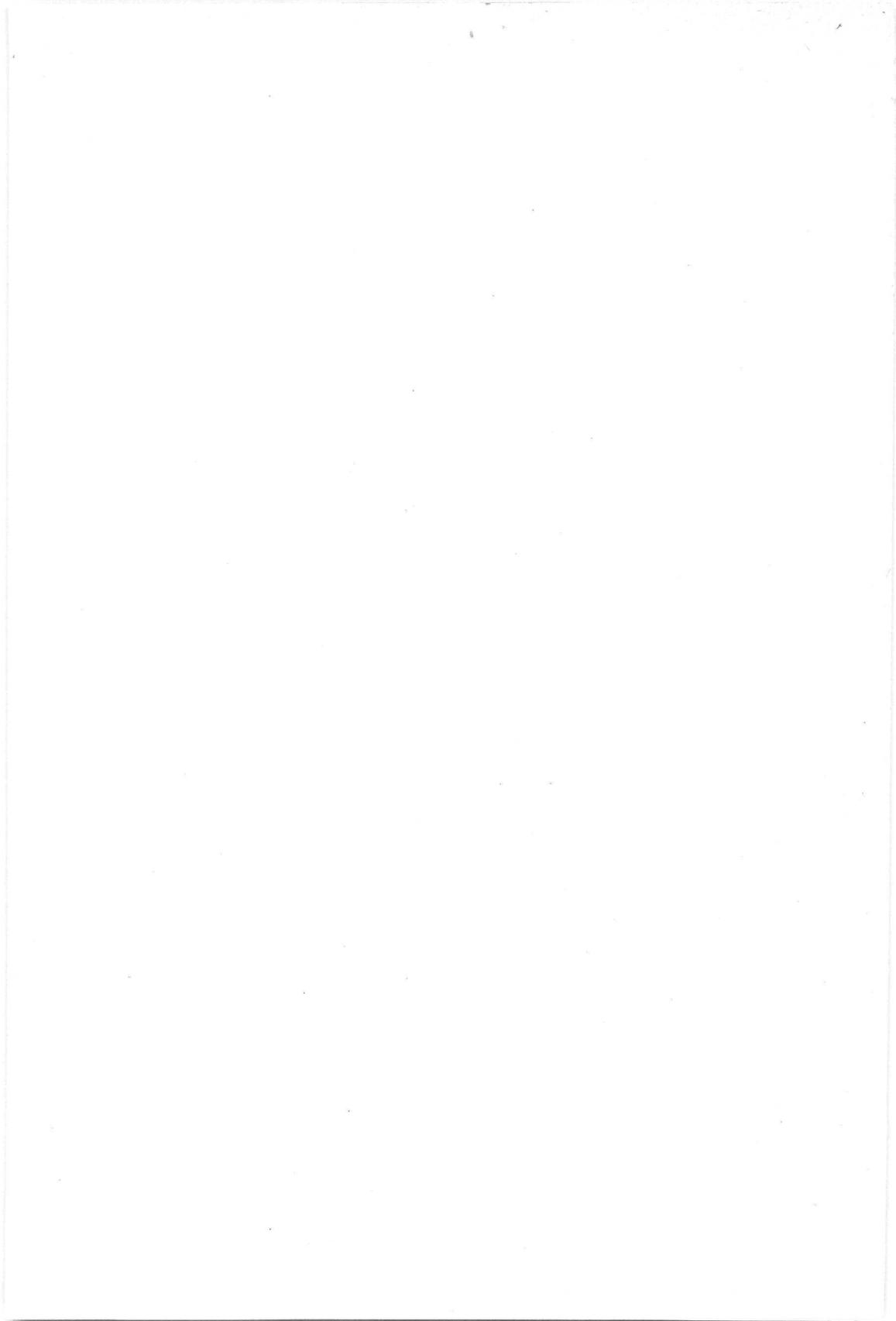
THE Naval Aviation V-5 Physical Training Manuals were prepared and published during World War II to provide the best standardized instruction in the sports selected to give the youth, training to be combat Naval pilots, the maximum physical and psychological benefits. It was the first time that intensive athletic training was used militarily, not only for conditioning and recreation, but to develop and intensify desired qualities, such as quick reaction, coordination, accurate timing, cool judgment, aggressiveness, and determination. It was, without question, the most rigorous mass program conducted in this country utilizing a large group of different sports. Each cadet was required to spend four to six hours a day in intense athletic training for eight months, the time diminishing in later months as other elements of flight and ground training were added. The results were highly successful as proven by the testimony of the high performance of this group of pilots, and the acclaim given them and the training methods by all who observed.

Over two thousand of the nation's leading physical educators and coaches of all sports participated in the planning and operation of this program as Reserve Officers, and most of them actually contributed in the preparation of these Manuals in their own specialty. While in some instances only one author did the final writing, it may in truth be said that the project was conceived and carried out as a group enterprise. The names of those officers who originally compiled and wrote the manuals now appear with the committees of revisions opposite the title page, and we deeply regret that space does not permit acknowledgment of the contribution of literally hundreds of others whose assistance was substantial. The original edition of these manuals was completed in 1943 under the direction of Commander Frank H. Wickhorst, USNR, Head of the Naval Aviation V-5 Physical Training Program at that time.

These books have found a wide usage in the civilian field of instruction in sports and have been adopted as text books and coaching manuals throughout the country. The Navy, recognizing the valuable service the manuals perform, authorized the V-Five Association, a peace time non-profit organization, whose nucleus is the above group of officers, to revise the books. The revisions are aimed to make the volumes fully up-to-date, with added material to treat with new techniques and emphasis, and to adapt the experience and lessons learned for instruction in proper gradations at the college and high school level.

It is increasingly evident that participation in a well rounded physical training and sports program integrated with academic and spiritual elements is highly desirable in a youth's training. Different sports can be increasingly effective in developing many splendid qualities, and contribute to the well-being of the individual and the nation. It is hoped this V-5 Sports Series will continue to contribute to the general welfare of our youth.

T. J. Hamilton
Rear Admiral, USN (Ret.)
Director of Athletics
University of Pittsburgh



Introduction to First Edition

GYMNASTICS AND TUMBLING is included in the Naval Aviation Physical Training Program because of the strength and skills that are developed through participation in this sport. These include improvement of upper body strength, and training in quick and correct decision and action. Since there is no other activity to develop fully upper body strength, agility and balance this sport occupies a prominent place in the Naval Aviation Physical Training Program.

The objectives of the Naval Aviation Gymnastic and Tumbling Program to be achieved through tumbling (falling), vaulting, climbing, balancing, and apparatus stunts (supporting and hanging) are:

1. To give training in the native sense of balance.
2. To equip the future pilot with strength and skill to extricate himself effectively from emergency situations requiring climbing, vaulting, tumbling and balance.
3. To develop daring and courage.
4. To accustom the cadet to being upside down for extended periods.
5. To teach falling and landing without injury.

The material presented in this manual is to guide officers in teaching the sport to cadets in the Naval Aviation Physical Training Program. Even the inexperienced officer may do a commendable job in gymnastics if he studies and follows the manual and the lesson program thoroughly.

The gymnastic and tumbling lessons throughout the Naval Aviation Physical Program have been planned progressively. All phases of the program should be conducted as closely as possible to stipulated lesson plans. These lesson plans have been compiled to insure the desired outcomes; namely, the teaching of required minimum core activities which are divided into two main categories. These two categories are first, core all-out effort (strength) achievement and, second, core skills in tumbling, climbing, balancing, vaulting, hanging, supporting and trampoline.*

* The trampoline is not included prior to the Pre-Flight School Program.

Introduction to Revised Edition

The basic material contained in this manual is considered by the committee to be as sound today as it was at the time it was written. Hence, few changes have been made in the body of the book.

The stunt and performance records, pages 323 to 337, have been brought up-to-date. When properly used they will serve as an added incentive to students.

A new method of conducting an intramural gymnastic program, now in use at Florida State University, has been added on page 321. Both the plan and the events are appropriate for similar competition in Junior or Senior high schools.

Finally, the committee has offered some suggestions for adapting the Naval Aviation teaching syllabus for use in Junior and Senior high schools, page 360. The committee wishes to express its appreciation to the U. S. Naval Reserve Officers who so generously assisted with the compilation of the first edition, especially Lieutenant Commanders Marshall L. Brown, Joseph Giallombardo, Frank B. Harr and Charles J. Keeney.

The Revision Committee

H. D. P.

J. M. H.

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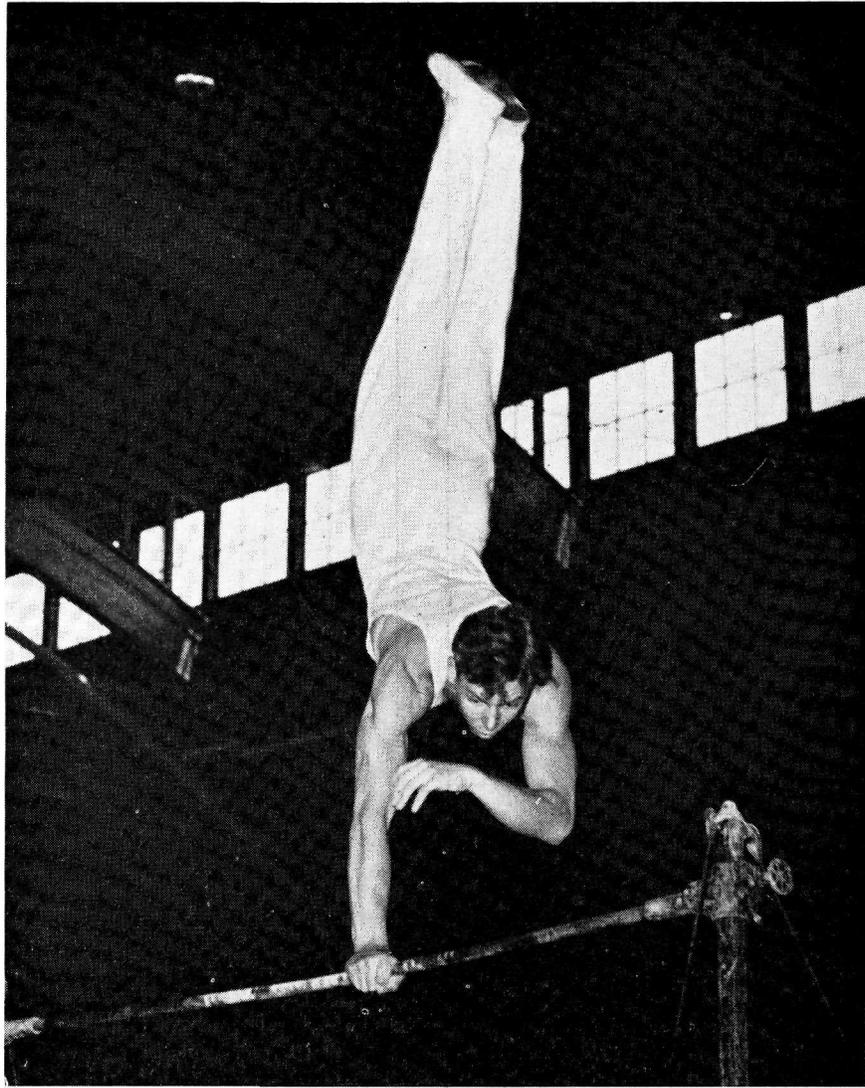
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GYMNASTICS AND TUMBLING



*WILLIAM ROETZHEIM, Florida State University, 1949 National A. A. U. Gymnastic
Champion, Illinois Navy Pier, Photo by Al Augustyn, Chicago, Illinois*

CHAPTER I

Brief History of Gymnastics*

EARLIEST HISTORY

Perhaps the Chinese were the first people to develop activities that resembled gymnastics. Records indicate that two systems of training were employed, military and medicinal. Histories of Egypt, Japan, Persia and India mention physical exercises in connection with preparation for war. In fact, Egypt has left tangible proof, in the form of pictures of pyramids and balancing, of the art of gymnastics as it was practiced 2100-2000 B.C.

Greeks

The early Greeks, however, gave glory to physical training in general and to gymnastics in particular. The word "gymnastics," meaning "naked art," comes from the early Greeks. So much importance was attached to gymnastics that the gymnasium, an outdoor meeting place for athletic contests, was the seat of Greek intellectual development. All-round development of the individual was the goal sought, a perfectly trained, hardened, disciplined body, a citizen and a warrior worthy of highest Greek standards.

Exercises in Greek gymnastics were based on natural movements and included running, throwing, wrestling, boxing, climbing, jumping and work with weights (halteres). Weight lifting and jumping with weights were popular activities as well as others involving use of the sling, the spear, and the bow and arrow. Dancing and games also were part of the program. The Greeks worked with apparatus rather than upon it.

Romans

The early Romans, having seen the favorable effect of Greek gymnastics, introduced rigid physical training into their military program. Among other apparatus, they made use of a wooden horse upon which to practice mounting and dismounting. The activities, executed while holding a drawn sword or lance, left no doubt as to the purpose of training. The words of the Romans, conquerors and warriors that they were, give a clear picture of the motive behind the activity, "It appears to be play, but it is for the Fatherland."

MIDDLE AGES

The decadence of both the Greek and Roman civilizations was followed by a long period of asceticism when strenuous physical activity for the common people was discouraged.

Throughout the Middle Ages, the knights, representing the warrior class, were

* For further historical information consult the works of K. A. Knudsen and Leopold F Zwarg.

probably the only group participating in organized physical activity. Main activities included climbing, vaulting, riding, swimming, archery, climbing on ladders, poles and ropes, tilting and jousting, wrestling, fencing, jumping and dancing.

"There is no record of any system of physical training for the common people during the Middle Ages. However, certain apparatus was used by some medieval as well as ancient people. . . . Using other persons as apparatus, human towers were formed during sieges and at public performances. Acrobatic stunts have been known at all times."

MODERN TIMES

Modern physical education begins with the work of a group of leaders who were interested in education in general, but in physical education in particular—Johann Basedow (1723-1790), Johann Guts Muths (1759-1839), Gerhard Vieth (1763-1836) and Johann Pestalozzi (1746-1827).

Johann Basedow, 1723-1790

Basedow conducted the first gymnastics as part of the school work in Europe. He was the first modern writer and teacher of organized gymnastics of whom there are records. He regarded directed physical activities as a means to a complete education embracing both body and mind.

Johann Guts Muths, 1759-1839

Guts Muths, an educator and "the great grandfather of gymnastics," using Greek fundamentals and adding new movements, published the first book on gymnastics, "Gymnastics for Youth." He seems to have successfully combined idealism, materialism and realism. His teaching methods provided for children as well as adults and included carefully selected exercises for girls. Commenting upon physical education in his Encyclopedia of Bodily Exercises, he stated,

You shall be a sane supervisor and master of your body; you shall train it to vigorous manhood, making it skillful and obedient to all that is good so that you may grow to be a true man for yourself, your own kin, and the society in which you live.

His first gymnasium was out of doors, and in it were see-saws, climbing poles, ropes, balancing beams and vaulting apparatus. The rope ladder, also a part of his equipment, probably was introduced by Basedow, who had realized its usefulness on board ship in the seaport town of Hamburg. The oblique wooden ladder also was used.

Gerhard Vieth, 1763-1836

Vieth, a mathematician and a scholar possessing an analytical mind, adhered closely to the Guts Muths system of gymnastics. He published an encyclopedia of bodily exercises (1794-5), in which he stressed the mental, moral and physical value of exercise. Passive exercises, "lying, sitting, swinging and being carried by means of mechanical devices, also bathing, massaging and the hardening of the body, . . ." and active exercises, "walking, climbing, jumping, and vaulting," were included in his system. He treated vaulting in detail and described side and long vaults, front, rear, squat, straddle and numerous other vaults and mounts.

Vieth further described balance beams, jumping ropes, climbing ropes and poles, the horse, the table, and the buck (evidently a form of leap frog). Since he wrote of vaulting over horizontal poles at different heights, it would indicate that early form of the horizontal and parallel bars were used as apparatus.

Johann Pestalozzi, 1746-1827

Pestalozzi's greatest contribution was to general education, but he was the founder of free exercises and of calisthenics. He believed that methodical exercising trained the pupil intellectually, morally and esthetically. It is of interest to note, however, that the gymnastics of Guts Muths were practiced upon Pestalozzi playgrounds.

The end of the 18th and the beginning of the 19th centuries introduced a new era. The world was in an industrial, educational, and political turmoil. Germany was suffering keenly from Napoleonic victories. Appeals were made to her leaders to turn to education as a means to restore her prestige, and as a result, Germany eventually became a leader in educational thought and practice.

The period seems to have given impetus to physical education in general and to gymnastics in particular in countries other than Germany. Aside from Friedrich Ludwig Jahn (1778-1852) and Adolph Spiess (1810-1858), both of Germany, leaders of the times included Pehr Henrik Ling (1776-1839), Sweden; Archibald Maclaren (1820-1884), England; Phokion Clias (1782-1854), Switzerland; Francis Amoros (1770-1848), France; and Franz Nachteggall (1777-1847), Denmark.

Friedrich Jahn, 1778-1852

Jahn, the "Turn Father" of German gymnastics, presented a plan to the German people whereby he hoped to promote national unity and physical strength through Turnen societies, clubs of strong national character.

Jahn was an enthusiastic, far-seeing teacher and leader. He was the first man to organize and popularize physical skill with a view to arousing the national spirit, to promoting self-discipline and bodily strength, and to stimulating the mental vigor of Germany's young manhood. He wanted to create "liberty loving, social and independent thinking. . . ." This he hoped to do "by strengthening the degenerated muscle groups of the body, thus liberating man from the shackles of an environment that made him feeble, that allowed his muscles, and consequently his mental vigor, to decay."

To this end he devoted his energies. Unlike Guts Muths, who encouraged gymnastics among children, Jahn's program provided for adolescents and adults only. His ardor brought the youth of the city to his playground, the first of its kind, where he imbued them with the spirit of self-reliance, encouraging keen rivalry in skill and in strength. Open air activity was preferred. When the need arose for apparatus upon which to play, Jahn and his students invented it, and thus he is credited with introducing the horizontal bar, the parallel bars, the side horse with pommels, the jumping standard and pits, balance beams, ladders and vaulting bucks.

Jahn made no attempt to have his program adopted by the schools. Even had he done so, the government very likely would have frowned upon his efforts because his societies were not in favor at that time. In 1842, ten years before Jahn's death, gymnastics were introduced into Germany's public schools, but they were of a stilted and formal nature.

Adolph Spiess, 1810-1858

Spiess of Germany, trained in Pestalozzian methods, adapted both Guts Muths and Jahn gymnastics to his classes of boys and girls in Burgdorf, Switzerland. He added marching and free exercises set to musical rhythms, which aided in discipline and erect carriage. His book, "The Science of Gymnastics," contained graded exercises for boys and girls of all ages designed to develop the entire musculature. Through his efforts, gymnastics became a school subject in Switzerland, and Spiess is known as the "Father of School Gymnastics."

Spiess did not favor Jahn's squad-leader plan, preferring to employ trained teachers instead, but these lacked the keen enthusiasm, foresight and ability that were characteristic of Jahn and Spiess. As a result, a formal attitude became apparent and has handicapped gymnastics ever since. The freedom and the ardor and the wide scope of activities which under Spiess' personal teaching had included music appreciation, playing of games, hiking, and outdoor exercises gradually narrowed down to a much smaller scale.

The factor that Jahn had so earnestly encouraged, a rich, full, stimulating, outdoor, informal physical training program for all, was lost sight of when the work was carried on by less competent teachers.

Pehr Ling, 1776-1839

Ling, the father of Swedish gymnastics, patriotically attempted to imbue the youth of Sweden with the need of physical fitness as Jahn had done in Germany. He believed in the therapeutic and corrective value of the activity and he hoped to see gymnastics improve the weak as well as the strong. He stipulated that exercises should be prescribed for the individual rather than for the group; that a system of gymnastics should be based on an accurate knowledge of the effect of the various exercises on the human organism; and that teachers should know the purpose and effect of every exercise upon the organism. He felt that Jahn's system led to complicated movements and did not lend itself to accurate recognition of causes and effects. He endeavored to simplify the activity in accordance with his speculative theory, derived from a study of anatomy and physiology. He invented apparatus to fit his theory, permitting simple movements such as climbing, vaulting, lifting and balancing, all done at command. "For his purpose Ling invented the stall bars, the boom, the saddle, the window ladder, the low combination bench, ribba and the vaulting box. These are known today as Swedish apparatus. To these were added the horse, the horizontal, vertical and oblique ropes, and climbing poles."

Suited to formal group instruction, where all can work upon command, combinations of exercises on Swedish apparatus are somewhat limited. The regular apparatus, however, can be adapted readily to individual differences and permits a much wider scope of activity, depending upon the skill and creativeness of the performer. Stunts are appealing and interesting to the performer.

Hjalmar Ling, a son, developed his father's system further and originated the stall bars. Swedish Corrective Gymnastics did not come from Ling but from one of his students, Branting.

Archibald Maclaren, 1820-1884

Maclaren, an English educator, advocated the Jahn system of apparatus activities

to supplement games when he wrote his military manual at the request of the English government.

Phokion Clias, 1782-1854

Clias, a Swiss teacher who promoted gymnastics in England and France as well as in Switzerland, was not original in his views. His written work proved to be a composite of that of Guts Muths and Jahn. However, he mentioned the giant stride for the first time in professional literature.

Francis Amoros, 1770-1848

Amoros, a Spaniard, was responsible for the establishment of gymnastics in France. His methods were formal and were patterned after those of Pestalozzi. "Amoros must have been one of the first to use the trapeze, the rings, the knotted ropes, the inclined boards, a form of giant-stride and strength test machines for physical training purposes."

Franz Nachtegall, 1777-1847

Nachtegall, the father of Danish gymnastics, directed in Copenhagen the first recorded training school for teachers of gymnastics, known as the Military Gymnastic Institute. Some of the activities included "exercises upon hanging ladders, rope ladders, climbing masts and poles; also balancing, tug of war, and vaulting. For the vaulting, a wooden horse was used. Mats were placed around the horse to insure soft landing, and a teacher caught the vaulters who missed. This seems to be the first report upon the use of mats, although they were undoubtedly used long before."

It is of interest to note that throughout history, the rise and fall of nations has seemed to coincide with the rise and fall of the physical stamina of their people. Greece rose to the height of her glory (leaving her indelible mark upon the world) during that period when the physical vigor, the patriotic zeal, the independence and freedom of her people were at their height. Athletic professionalism for the few and a lack of strenuous participation among the many brought about a decline in the national physical stamina and a consequent decline in the power of Greece. The same may be said of the great Roman Empire and of Egypt. History indicates, too, that a decadent nation realizes the costly blunder it has made only after defeat at the hands of a physically superior enemy. A period of reorganization follows and attempts are made to imbue the nation with the need of physical improvement.

In many instances a country has been able to save itself and has even become more powerful than previously by realizing its weakness. Such was Germany's case after her humiliation by Napoleon's forces. The great national movement introducing Jahn's Turnen Societies for the physical improvement of youths and adults of military age was an outcome of Germany's defeat. And more recently, in our own country, the years following World War I saw a surge of enthusiasm for and an insistence upon improved and sustained physical condition.

It sometimes seems, however, that a defeated country maintains its patriotic zeal for physical improvement, while the victor leans toward promises and good intentions rather than vigorous activity. The United States was no exception. For a few years following World War I, physical education was stressed, but gradually the

nation as a whole seemed to lose interest in the need of sustained physical fitness, and gave little heed to leaders who tried to stimulate interest in rugged, big-muscle activities. World War II awakened this country to its shortcomings. Almost immediately, physical fitness became one of the big issues of the times.

PIONEERS OF GYMNASTICS IN THE UNITED STATES

The pioneers of gymnastics in the United States were: Charles Beck (1798-1866), Charles Follen (1796-1840) and Francis Lieber (1800-1872). These Germans, coming to this country at the invitation of American educators, were followers of Father Jahn. They established gymnasiums similar to the Jahn pattern at the Round Hill School, Northampton, at Harvard University, and at the Boston gymnasium. With the arrival of thousands of German immigrants, gymnastic clubs called "Turnvereins" were formed in many of the larger cities. "In 1850 these societies formed the North American Turner Bund (Gymnastics Union) . . . What these societies . . . accomplished by their untiring zeal and unselfish devotion is little known. . . . It is certain that for some years the Turners were the only . . . promoters of scientific physical education for the public schools. A normal college for the training of teachers, the oldest in the country, was established by the Turners in 1866."

The Young Men's Christian Association made a great contribution to the development of physical education by installing apparatus in their gymnasiums. In 1887 the International Training School (now Springfield College) at Springfield, Massachusetts, established a Physical Training Department which gives students a thorough background of gymnastic technique.

Dudley A. Sargent (1840-1924) greatly influenced the advancement of gymnastics. His work at Harvard University was largely anthropometrical and corrective in character. In 1881 the Sargent School was established in order to train women teachers.

The American Turners have had perhaps the greatest effect on physical education. Through their efforts, physical education was introduced into the schools. The thirty-six national tournaments and the thirty-nine national conventions that have been held in different sections of the country by the American Turners have spread their influence. The oldest active Turner organization is the Cincinnati Central Turners, which dates from 1848. The Boston Turn Verein and the Philadelphia Turners followed in 1849. Eighty-five Turner societies have been organized for more than fifty years.

In 1865, in order to train teachers, the American Turners organized the Normal College of the American Gymnastic Union, an institution now affiliated with Indiana University.

The Swiss American Gymnastic Association also has favorably affected the development of gymnastics. The Swiss Turn Verein of Hudson County has won more national championships than any other club in the country.

The American Sokol was introduced in St. Louis in 1865, three years after it had been founded in Prague, by Dr. Miroslav Tyrš. Chicago and New York instituted branches in 1866 and 1867, respectively. Today the United States claims a total Sokol membership of 100,000, and throughout the world there are approximately one million members.

The use of apparatus in American public schools and colleges was impeded by three main influences:

1. About 1800 Dio Lewis introduced exercises that did not require apparatus and the schools accepted them enthusiastically.
2. The Swedish influence about 1900 emphasized calisthenics.
3. The trend toward recreational activities about 1920, following World War I.

The Y.M.C.A. has continued to promote gymnastics by making provision for the activity in practically all of their organizations.

Other influences that have increased interest during the past two decades have been the exhibition teams in different parts of the country. Groups that have made the chief contributions are: The University of Illinois Gymkana Troupe;* Springfield College; Stroudsburg (Pennsylvania) State Teachers College; Brooklyn (New York) Central Y.M.C.A., and the community circus of Gainesville, Texas. The Chicago Parks have successfully encouraged exhibitions and have experienced widespread enthusiasm on the playgrounds. High schools, too, have realized the value of exhibition gymnastics. Perhaps the outstanding programs in high schools in the United States have been in Philadelphia and Pittsburgh. Another important influence in the development of competitive gymnastics in the United States has been the Northwestern Gymnastic Society, which was organized in December, 1909. In April, 1910 the Society conducted its first annual gymnastic contest, and, except for the year 1919 a contest has been held annually.

Since shortly after the end of World War I, gymnastics was denied its rightful place in the total program of the public schools and colleges in this country. The trend has been toward mild recreational activities for the majority while strenuous competition was encouraged for the small minority. The emphasis on recreation brought about a program revision wherein practically all features, good and bad alike, of the old program were eliminated. One result was a dearth of good gymnastic teachers and inspiring gymnastic programs.

The Naval Aviation Physical Training Program made great strides toward remedying the situation. It demanded strenuous conditioning activities in order to maintain the acme of physical fitness. A balanced program of physical education should include team sports, individual sports, rhythms, aquatics, combatives, and gymnastics. In all sections of the United States gymnastics are being promoted. Recently the Southern Gymnastic League was founded with a view to promoting gymnastics in eleven southern states. Florida State University and Georgia Tech, among others, are making favorable progress.

* The University of Illinois Varsity Gymnastic team during the Gymkana era under Hartley Price won four N.C.A.A. and two N.A.A.U. team championships.

CHAPTER II

Values of Gymnastics and Tumbling

OBJECTIVES

The objectives remain the same in wartime, but the emphasis changes. More emphasis should be placed upon organic health and conditioning so that the developing individual may make adequate adjustment to immediate circumstances.

War stresses the need of the acme of physical fitness. The profession of physical education then, must re-evaluate its program of activities, methods, and standards. At all times, of course, sound principles of methodology should be applied. The Naval Aviation Physical Training Program is primarily concerned with the development of coordination together with mental and physical fitness.

The fundamental factors of physical fitness are agility, balance, strength, endurance, power, and flexibility. It is to be expected that certain activities lend themselves favorably to the development of such factors. Perhaps gymnastics has more to offer than any other single activity toward an all-round development, but it is perhaps least effective so far as endurance is concerned. Therefore, the gymnastic program should be supplemented with endurance-promoting activities such as running and swimming, which demand sustained maximum effort.

Customarily, gymnastics requires apparatus, but when apparatus is not available, programs may be adapted accordingly. Effective conditioning work can be accomplished by calisthenics, particularly when flexibility and balance are the desired outcomes. Every effort should be made to make activities practical.

To match the swift pace of modern warfare, the naval aviator must attain a high degree of physical fitness not ordinarily possessed by the average cadet entering training. It must be acquired, then, through an effectively administered conditioning program from which the cadet should emerge in superb physical condition and imbued with the necessity of maintaining it.

Eleven conditioning departments have been set up at the Naval Aviation Pre-flight Schools: those of football, basketball, military track, wrestling, boxing, swimming, soccer, hand-to-hand, gymnastics and tumbling, mass exercise, and labor engineering. Each department makes its particular contribution toward a well developed, coordinated, self-disciplined, and self-confident aviator who will be able physically, mentally, and emotionally to compete to advantage with the best that the enemy can put in the air.

GYMNASTICS DOVETAILS WITH OTHER DEPARTMENTS

Perhaps an outstanding characteristic of gymnastics is that it dovetails most effectively with the entire physical training program. A developmental program may be organized to good advantage for the men who fail the initial tests given by the

Mass Exercise Department. In six weeks, below par men* may attain the standards required at the base after a progressive program of gymnastics.

The cadet upon recognizing his weakness is anxious to correct it. Usually his legs are in fairly good condition but his upper body indicates need of development. As his physical condition improves, he becomes more confident and tends to give a better account of himself in other activities.

THE PURPOSE OF THE PROGRAM

The purpose of the gymnastic and tumbling program, planned progressively is to:

1. Improve the entire musculature.
2. Encourage quick and correct decision and action.
3. Build upper body strength.
4. Maintain the acme of physical fitness by continuing practice on the skills previously learned.

VALUES

1. Gymnastics contributes to the development of upper body strength. Physical tests given to incoming cadets at pre-flight schools during World War II indicated a deficiency in upper body strength, especially in the muscles of the shoulder girdle, the triceps, the abdomen, and the back. Effective administration of progressively arranged gymnastic activities did much to meet this deficiency.

2. Gymnastics provides opportunity for the development of power. Rope climbing, throwing the medicine ball for distance, and gymnastic routines require maximum effort and hence develop power.

3. Gymnastics provides for the development of muscular coordination or neuro-muscular control. The fundamental activities of running, climbing, and jumping are combined in a unique way in gymnastic routines. Twisting or turning, bending, circling, and swinging movements occur in rapid succession during the routines in the upright or standing position, in the hang, the support, and in various other positions. Perhaps no athletic activity other than gymnastics and tumbling provides the opportunity for the development of maximum muscular coordination and neuro-muscular control; and perhaps no war activity demands the acme of muscular coordination and neuro-muscular control as much as aviation.

4. Gymnastics contributes to the development of suppleness, elasticity, litheness and flexibility, permitting full range of body movement and control.

5. Gymnastics develops a sense of re-location. A series of fast forward rolls on the mats, or hip circles on the horizontal bar, or a workout on the aerowheel or trampoline, may cause dizziness at first. Two weeks of daily practice should condition him effectively.

Both poise and equilibrium are outcomes of the sense of re-location, which affords an awareness on the part of the aviator that he is inverted when he is flying upside down.

* Gymnastics can also plan an effective program for cadets with leg injuries as well as supervise an individual development room.

See Chapter XII on Supplementary Programs p. 267 (Sub-Squad; Injured Cadets; Individual Development Room).

Gymnastics and tumbling are perhaps the chief activities that afford the opportunity to orient the body in space, a factor needed when flying. The trampoline, or bounding table, permits an immediate experience in orientation, since the outstanding objectives attained through the trampoline are:

- a. Balance and control of the body in the air.
- b. Development of oneness with the plane.
- c. Timing and rhythm in coordinated motions.
- d. Confidence in the air.
- e. Elimination of fear when feet leave the ground.

The experience in the air that the performer on the trampoline gets almost immediately is realized by the tumbler only after considerable effort and practice.

6. Gymnastics develops agility—quick, easy, dexterous movements. Vaulting in a variety of positions teaches the fundamental principles of body control. The naval aviator or paratrooper may be called upon to overcome unforeseen hazards and obstacles during landing operations; hence he must be adept in vaulting and in jumping. He must have overlearned the art of vaulting to the side, in a squat position, in a straddle, end-over-end, or in a dive, easily and with minimum effort.

Gymnastics, then, dovetails with training on the obstacle course since the most effective runner is the one who can skillfully, safely, and quickly adapt his gymnastic vaulting experience to the difficulties of the course.

7. Tumbling teaches falling safely. Practically every phase of his life as a cadet, or aviator, (or as a civilian, for that matter) may be materially aided by a knowledge of tumbling. When he first takes "boot" training; when he takes conditioning hikes; when he participates in football, basketball, or any other sports activity, the cadet who can tumble is that much better equipped to save himself from injury caused by falling than one who cannot tumble.

8. The cadet who is temporarily incapacitated by minor injuries may participate in specially selected gymnastics, thus keeping in condition despite his handicap.

9. Gymnastics and tumbling develop body balance which is useful to the individual throughout life. Together with climbing, vaulting and falling, these skills are directly useful in various emergency situations.

10. Gymnastics teaches the cadet how to ascend, descend, and rest on a rope,—skills which are of paramount importance from a practical standpoint.

11. Gymnastics develops a sense of daring and courage, yet discourages foolhardiness.

12. Gymnastics develops attitudes vital to the successful naval aviator: fearlessness, initiative, decisiveness, courage, perseverance, presence of mind, self-confidence, as well as an analytical outlook and the ability to size up a situation quickly.

In summary, then, the objectives of the Naval Aviation Gymnastic and Tumbling program to be achieved through tumbling (falling), vaulting, climbing, balancing, and apparatus stunts, are:

1. To give training in the native sense of balance.
2. To equip the future pilot with strength and skill to extricate himself effectively from emergency situations requiring climbing, vaulting, tumbling and balance.
3. To develop daring and courage.
4. To accustom the cadet to being upside down for extended periods.
5. To teach falling and landing without injury.

CHAPTER III

Facilities, Equipment, Maintenance, Substitutes

INDOOR FACILITIES AND EQUIPMENT

INDOOR GYMNASIUM

The gymnasium for gymnastics should be of adequate size and proportion with dimensions of 100' x 100' x 25' or 30'. At least 25 square feet should be allowed for each cadet. A hardwood floor is desirable; white walls help solve any lighting problem; natural light is preferable and adequate ventilation is essential. The gymnasium should be free from all obstructions. It should be entirely apart from the area being used for basketball, volleyball and other activities, since uncontrolled balls bounding into the gymnastic area, together with the noise and vibrations caused by the players, are not conducive to either effective teaching or performance.

However, if desirable gymnasium space is not available, do not permit that lack to defeat a gymnastic program. The use of any available space is recommended. Make use of an alcove, a hallway for after school activities, or the like.

At a Pre-Flight School, approximately 2,000 cadets can be handled efficiently in gymnastics and tumbling with the listed equipment for the combined purposes of class instruction and the sports program. The equipment permits efficient handling of nine periods a day, six of which are instructional periods for platoons of 40 to 75 cadets, and for three sports programs in which approximately 120 participate at one time. In the summer the sports program is held during one period. The program then takes care of twelve teams of approximately twenty men on each team. Thus a total of 240 cadets are accommodated in a limited area.*

Tumbling Equipment

	<i>Number Suggested**</i>
<i>Mats.</i> —15 square feet for each cadet in class should be allowed.	
1. 5' x 20' x 2"	20
2. 5' x 10' x 2"	10
3. Tumbling mat (50' x 5' x 2")	1
<i>Trampoline.</i> (Spare springs and bounding mats)	2
<i>Safety Belts.</i> (Hand mechanics)	4-6
<i>Semi-Guyed Adjustable Horizontal and Vaulting Bar</i>	4
<i>Floor Horizontal Ladder.</i> —This apparatus is useful for sub-squad work; 100 cadets can get a strenuous workout on two such ladders in 30 minutes.	4

* See Chapter XIII.

** For minimum equipment for the various stages of training see Appendix, p. 366.

PLATE 1. *Indoor Gymnasium**Gymnastic Apparatus*

	<i>Number Suggested</i>
<i>Side Horse.</i> —Vaulting boxes cheaply and readily made could be substituted for vaulting and can be used instead of the side horse and long horse.	4
<i>Bucks</i>	4
<i>Beat Boards</i>	4
<i>Springboards</i>	4
<i>Rings</i>	3 or 4 sets
<i>Adjustable Horizontal Ladder</i>	2
<i>Parallel Bars (10 feet)</i>	6
<i>Low Parallel Bars</i>	4
<i>Long Horse</i>	2
<i>Vaulting Box with 3 Underlifts</i>	4
<i>Suspended Safety Belts (Overhead mechanics)</i>	4
<i>Balance Beams (12" high)</i>	4
<i>Balance Beams (3' 6" high)</i>	2
<i>Chest Pulley Weights</i>	12
<i>Inclined Rope</i>	3

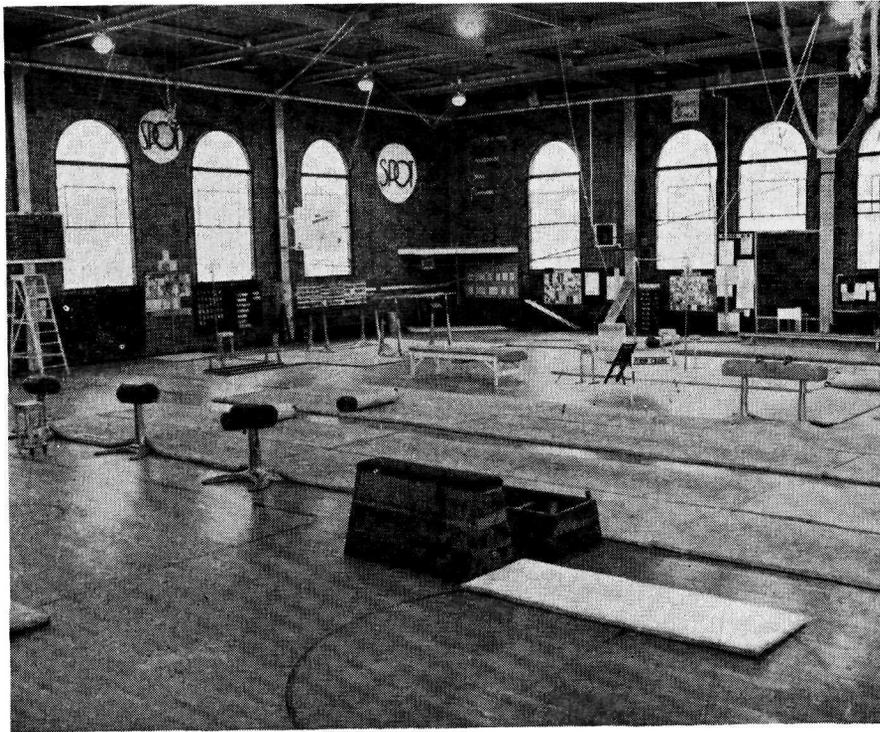


PLATE 2a. *Indoor Gymnasium*

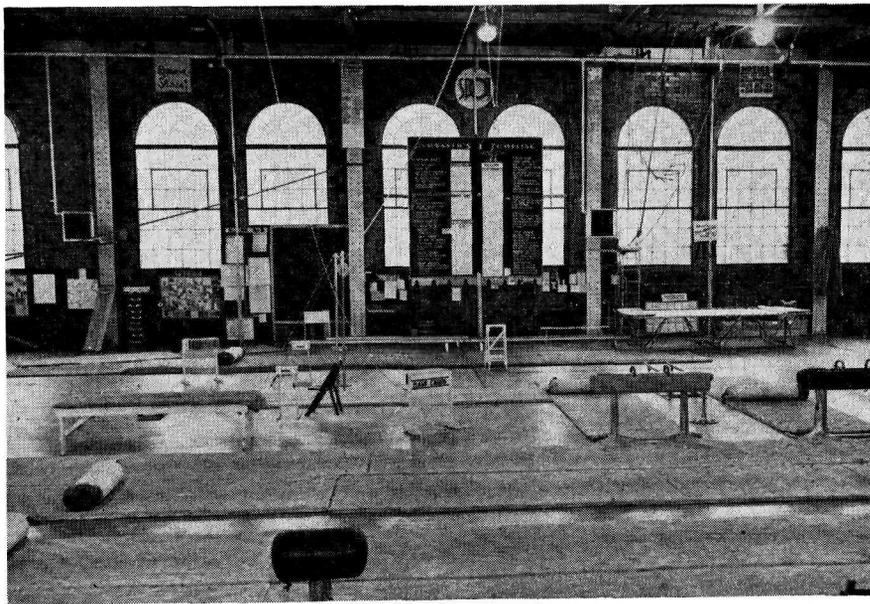
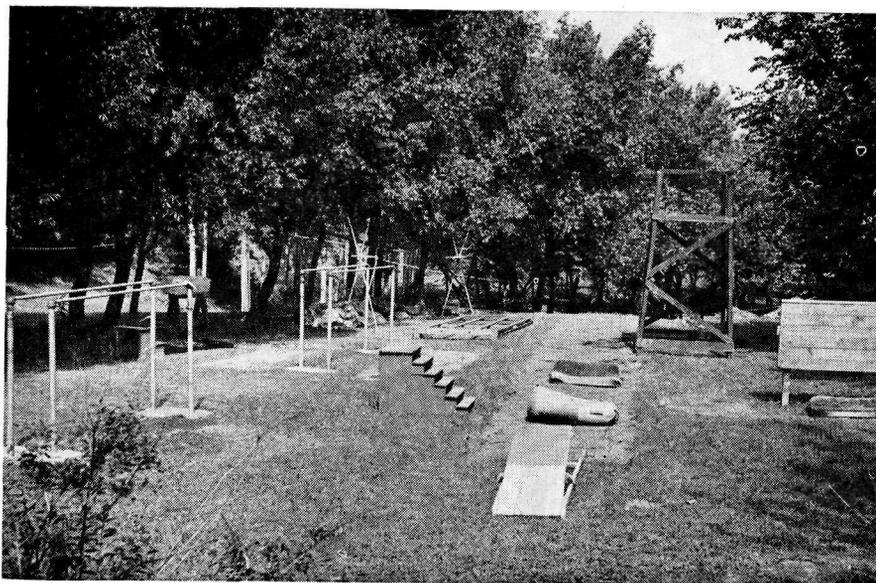


PLATE 2b. *Indoor Gymnasium*

PLATE 3. *Outdoor Gymnasium***Developmental and Corrective Equipment**

	<i>Number Suggested</i>
<i>Section of 3 Stall Bars</i>	6
<i>Adjustable Bar Bell</i>	6
<i>Medicine Ball 8 lb.</i>	12
<i>Climbing Shelf (8' high, 20' long, 4' wide)</i>	2
<i>Inclined Board</i>	4
<i>Wrist Twist</i>	6
<i>Horizontal Ropes</i>	2
<i>Vertical Ropes</i>	8-10

Miscellaneous Equipment

	<i>Number Suggested</i>
<i>Coasters for Relays</i>	8-10
<i>Aerowheels</i>	6
<i>Jumping Platforms for Parachute.</i> —These are 3 step affairs with steps 2' x 4' x 6' high	2
<i>Cargo Nets (if possible)</i>	4
<i>Cabinet (double depth 16½" x 40" x 60")</i>	4
<i>Racks for cadets' gear (25-75) 14'—3 shelves</i>	2
<i>Bulletin Boards (8' x 8')</i>	2
<i>Magnesium Carbonate Resin</i>	
<i>Storm Boards and Agility Pegs, and Swinging Rope</i>	

OUTDOOR FACILITIES AND EQUIPMENT

OUTDOOR GYMNASIUM

An outdoor gymnasium is an asset. Apparatus may be constructed reasonably for permanent use outdoors from scrap pipe lengths and lumber, and left outdoors; or if practicable, apparatus may be moved and used outside if weather permits.

An outdoor gymnasium project, carried to completion at the preflight schools successfully utilized sawdust combinations to take the place of mats. A pit seven inches in depth, filled with sawdust combined with crank case oil and covered with heavy canvas securely held in place proved effective for ground tumbling.

Mats*Suggestions*

1. Sawdust and crank case lubricating oil.
2. Sawdust and sand (mixed) covered with taut canvas. Mixture: Two parts of sand one part of sawdust.
3. Canvas over sawdust pits.
4. Carpet on lawn.
5. Springless mattresses.
6. Homemade mats.

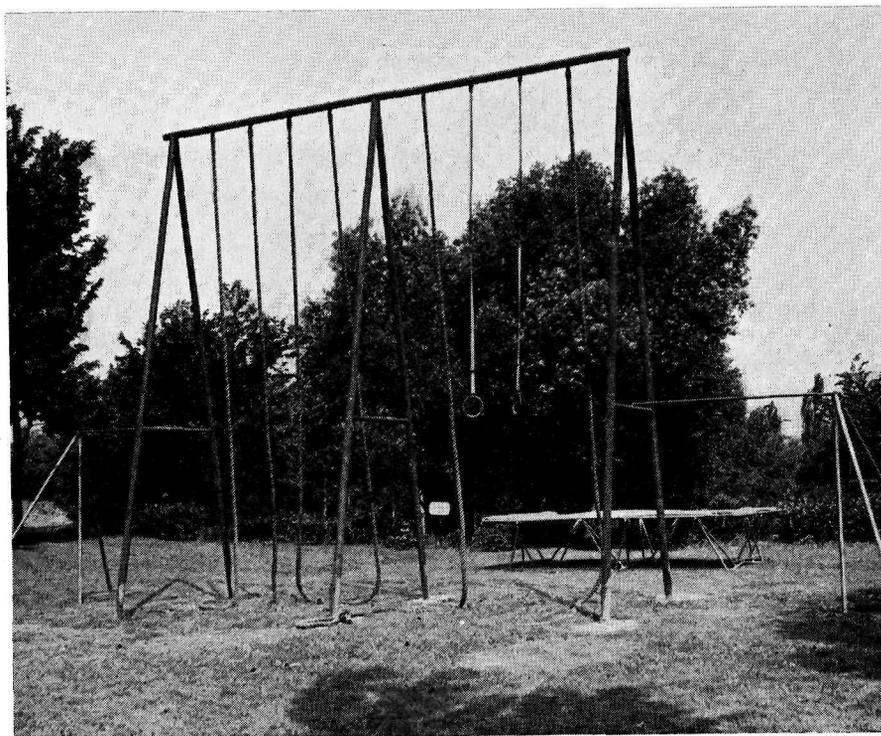


PLATE 4a. *Outdoor Gymnasium*

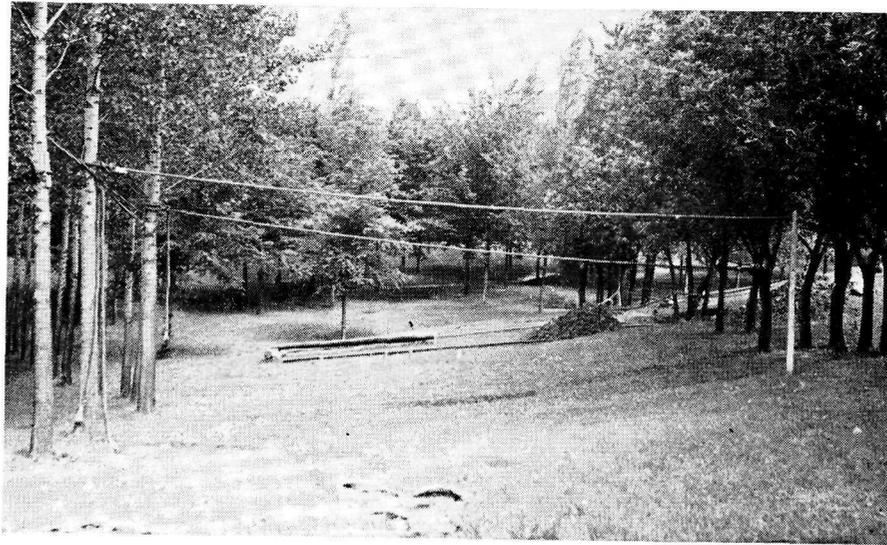


PLATE 4b. *Outdoor Gymnasium*

Parallel Bars

Suggestion (Suitable for permanent outdoor use)

1. Pipe in pipe framework (2").
2. Pipe in wood framework (2").
3. Standard measurements for both types of equipment regarding height and width.

Buck or Horse

Suggestions (For outdoor use)

1. Parallel bars covered with mats; or covered box which must have durable, stable base.
2. Covered pipes arranged between uprights (2"). Perhaps pipes could be arranged between trees.
3. A tree trunk cut to size.
4. A series of bucks or horses may be made by using a long tree trunk.

Vaulting Fence

(A very satisfactory apparatus for outdoors.)

Balance Beam

May be made from a steel rail or board twelve feet long and two inches wide. A tree trunk will also prove serviceable.

Vertical, Horizontal and Inclined Ropes

May be hung without much difficulty.

Springboards

May be improvised from old automobile springs. Automobile cushions are also very serviceable for front somersaults and vaulting.

PLACEMENT OF EQUIPMENT IN INDOOR GYMNASIUM

Stationary equipment should be so located that it will not interfere with movable equipment.

Movable

1. Excessive moving should be eliminated.
2. Equipment should be placed in permanent position if possible. Depreciation is then kept at a minimum.
3. If equipment must be moved, mats should have a definite location for placement while not in use. If they are stacked, the bottoms should be together. The mats should be carried and not dragged.
4. Heavy apparatus should be so located that it may be rolled towards the center or the sides for relays and games.

CARE OF EQUIPMENT

The longevity and usefulness of gymnastic equipment depends almost entirely upon proper maintenance. Equipment is hard to replace and should be taken care of properly in terms of safety, operation and cleanliness. Apparatus in poor condition offers no incentive for its use. It should be inspected closely each week. Below are listed items that should be checked regularly in regard to care of equipment.

General Hints

1. Demonstrate handling and adjusting of the apparatus.
2. Keep apparatus in a permanent location to minimize wear and tear.
3. Handle all apparatus carefully; observe safety rules.
4. Adjust mechanism according to manufacturer's directions.
5. Inspect equipment bi-weekly for loose parts and lubrication needs.

Horizontal Bar

1. Check floor plates.
2. Inspect guy wires closely and replace frayed and rusty cables.
3. Tighten shackle bolts.
4. Lubricate movable parts.
5. Keep bar coated with a film of vaseline or grease, when bar is not in use over a period of time. A bar that becomes rusty will soon become pitted and unfit for use.
6. Keep bar clean. Use emery cloth.

Side Horse, Long Horse, Buck

1. Clean leather with saddle soap once a month.
2. Turn horse on side and tighten screws and bolts.

3. Oil casters and movable parts.
4. Shoe polish will add to the looks and give a frictional surface desired by the better performers.
5. Loose pommels may be corrected by soaking leather in hot water and allowing to dry.
6. Do not allow hard surfaced shoes to be used when performing on horse.
7. Tape pommels of side horse.

Mats

1. Mats are protective devices and should be treated accordingly.
2. Keep mats clean. Wash as often as necessary. Do not let them become too soiled before this is done. If the mat is used while dirty the dirt finally works into the inside padding causing the padding to pack. Special paint is available for mats and has proved very successful. The loss of resiliency of the painted mat is compensated by the ease of quick and effective washing.
3. Always carry a mat or use a mat truck. Do not drag. Mats receive unnecessary wear from this source. Six cadets should carry the large mats and four should handle small mats. A dolly also may be used for this purpose.
4. When not in use stow away from the gymnasium traffic. In stowing mats place tops to tops and bottoms to bottoms. The bottom is the tasselled side of the mat.
5. Do not walk on the mats when in street shoes.
6. Replace torn handles and tufts that have become loose. The tufting keeps a mat in shape and prolongs its usefulness.
7. Repair torn mats immediately.
8. Keep mats dry. If they become damp they should be placed in the sun as soon as possible. Mats should be put in the sun about every two weeks.
9. Tumbling mats should be cleaned on both sides with vacuum cleaner three times a week.
10. Check on footwear before allowing performer to take his position on mats. Clean socks, clean canvas shoes or tumbling boots should be worn.

Parallel Bars

1. Keep bars tight.
2. When adjusting for height or width be sure mechanical appliances are secure and in a locked position.
3. Lubricate casters and movable parts for easy maneuverability.
4. Inspect wooden bars for defects and keep bars smooth. Use sand paper on bars.
5. Do not allow bars to be moved without first raising from the floor. Leather pads on the bottom prevent the bars from sliding. Inspect periodically.
6. Do not use parallel bars for obstacles where rough treatment may break or weaken a bar.

Rings

1. Adjust flying rings 7'-9" from the deck according to National Intercollegiate rules. Fasten ropes securely before using.
2. Inspect ropes and webbing for signs of wear and loose fittings.
3. Check movable parts at ceiling for wear and looseness regularly.

4. If wall type, check wall bracket and securing apparatus.
5. Tape rings.

Trampoline

1. Keep trampoline well tightened.
2. Keep canvas sanitary by washing. Mat covers may be used on the trampoline.
3. Inspect springs and make sure springs are properly inserted.
4. Do not allow practice in street shoes.
5. If necessary to stow away make sure this is done properly and that there is no strain on any section.
6. Do not allow two persons on the trampoline together, unless preparing for a special act.

Miscellaneous Equipment

Keep miscellaneous equipment in cabinets or racks.

ADEQUATE PROVISION FOR SAFETY*

1. Magnesium carbonate should be rubbed on hands before performing on apparatus.
2. Resin, lump or rock, should be used on hands in rope climbing and on shoes or feet in tumbling.
3. Suspended equipment should be inspected bi-weekly to be sure the ceiling attachments of ropes, rings and high bars are secure. Equipment should not be used if there is any doubt as to its safety.
4. The adjusting screws on the high bars and the parallel bars should be checked before each class.
5. The mats should be arranged properly around the apparatus.
6. The deck should be cleared of hazardous objects.
7. Hazards should be eliminated: When class is not in session, the use of previously setup equipment, such as springboards and vaulting braces *must be forbidden*. This policy protects the unskilled performer against attempting stunts beyond the range of his ability. Springboards and trampolines should be locked against the wall and should be used only when competent supervision is available.

WHEN REGULATION EQUIPMENT CANNOT BE SECURED

Mats

Mattresses or canvas bags (stuffed with hay or cottonseed hulls)
For Outdoors.—Shallow pits filled with sawdust-oil combination.

Horizontal Bars

A horizontal bar may be constructed from pipe $1\frac{1}{8}$ inches in diameter to $1\frac{1}{4}$ inches (preferred size) in diameter. About 7 feet long, and 7 feet 9 inches from the deck. (Use 4" x 4" uprights with bottom support and two braces.)

For outdoors a bar may be made out of scrap pipe and placed in concrete, making a permanent fixture.

* Also refer to Chapter V.

Parallel Bars

May be made of unadjustable wooden frame standard height. The hand rails should be oval-shaped, ten feet long and spaced eighteen inches apart. Parallel bars also may be constructed from piping with collars or welding, using floor plate with collar. A wooden frame, with pipe for hand rail, also may be used.

For outdoors.—Either pipe or wooden hand rails mounted on pipe, or wooden structure mounted in concrete.

Vaulting Box

Build a vaulting box on a pyramid form and pad the top. Build in sections so the height (approximately 5'6" from deck) is adjustable.

For outdoors.—A wooden horse may be made of half a log cut lengthwise, cleaned of its bark, and mounted rounded side up on four legs. Height approximately forty-two inches from the deck.

Springboard

The many uses to which the springboard can be put in conjunction with side horse, bucks, parallel bars and jumping standards make it very serviceable. Make the base of hickory and have it rubber shod. Make the top board of narrow hickory strips and cover with cork carpet cemented on with the edges protected by flush wood moulding strips.

Beat Boards

Use with the horse, buck and parallel bars as a take-off. Make the top of narrow ash strips and cover with cork carpet cemented on and have the base rubber shod to prevent slipping on the deck. The edges of the cork carpet are protected by well rounded wood moulding strips on all four sides. Hardwood cross cleats on the underside of the board are fastened by means of wood screws.

CHAPTER IV

Principles of Teaching Applicable to Gymnastics and Tumbling

General psychological principles relative to teaching procedures will not be discussed here. Reference, however will be made to particular teaching principles that are pertinent to gymnastics and tumbling.

Qualifications of the Teacher of Gymnastics and Tumbling

The teacher of gymnastics and tumbling should be able to apply all of the psychological principles of teaching, of which motivation is outstanding. In addition, he should be equipped with:

1. An adequate understanding of the physical and psychological development that is possible through gymnastics and tumbling.
2. A knowledge of the proper gymnastic and tumbling nomenclature.
3. A knowledge of progressively arranged strength-building exercises.
4. The ability to demonstrate various stunts.
5. The ability to detect and correct errors promptly.
6. The ability to maintain firm discipline and to hold the interest of the individual.
7. An awareness of the importance of safety procedures.
8. A sense of the need of economy of time. Every second of the class period should be used to advantage.
9. An appreciation of good form and precise movement.
10. Methods of providing for individual differences. The superior performer should not be required to repeat work if he is ready for advancement.
11. Methods of grading the achievement of the individual. If a grade scale is set up, it should challenge every member of the class.
12. Methods by which problem-solving is encouraged, i.e., thinking through the execution of a stunt.

Squad Leader System

Gymnastics may be taught effectively on a rotating-squad plan. There should be about eight or ten individuals in a squad. Advanced squad members should have been given additional instruction which enables them to act as leaders of a squad. A large class thus can be handled in stations. Each will alternate from the hang to the support activities as he proceeds with his squad from station to station.

The Whole-Parts Method of Learning

The parts method should be used in introducing a new stunt. But the whole stunt, consisting of its many parts, should be demonstrated and described briefly

for the benefit of the individual before he is permitted to make any attempt to master the selected part assigned to him. The learning of the kip on the high bar is a good example of this principle. A challenge is created with the presentation of the whole stunt and the performer becomes eager to learn the numerous, progressively arranged parts that make up a difficult whole. Complete mastery of the whole stunt should follow with relative ease if the stunt is properly presented.

Progression from the Simple to the Complex

Lesson plans should proceed progressively from the simple to the complex. Progressive lead-up activities should be given which contain elements identical with the desired end. Relatively complicated coordinations are part of almost all gymnastic feats, and in order that they may be learned correctly they should be broken down into parts and learned separately. Slowed down movements (slow motion) in which the learner, with assistance, actually experiences the kinesthetic or muscle feel of the trick to be learned, is most helpful.

The Success-Failure Relationship Is Important

Participants should not be allowed to practice too long without some success. It seems best, then, to teach moderately easy lead-ups, as previously mentioned, and in addition to provide an individual mat area (even though small) for each one or two performers. Thus, the inevitable mistakes may be made without attracting undue group attention.

Motivation Is Increased Through Exhibitions and Competition

Motivation through competition and exhibition stimulates interest in gymnastics and tumbling, and provides added interest to the participants.

Building Separate Stunts into Routines

The competent performer should be encouraged to create routines that have continuity and unity instead of learning the set routines of the instructor.

Program Should Be Varied but not Superficial

Types of activity and their difficulty should be varied to obtain well-balanced development and to maintain interest. However, it is equally important to do enough different tricks of the same type to contribute to the desired ends.

Facilities, space, time, number in class and experience of the instructor will decide the selection of material.

Working in Pairs for Safety and Quicker Learning

Partner assistance in learning involves one person as a spotter who supports, guards and lends physical aid to the performer with a view to quicker learning and the relatively assured safety of the performer. Spotting technique must be taught as well as performance technique.

Spotting experience is as valuable as practice experience since the spotter must

be on the alert constantly. Each student should have repeated opportunities to serve both as performer and as spotter. For all but a few of the more dangerous of the elementary tricks, hand spotting without belts or ropes is most effective and a time saver.

Suggested Class Procedure

1. Muster.
2. First day—general explanation of class administration and of the activities to be taught:
 - a. Acquaint class with apparatus.
 - b. Acquaint class with safety procedures.
 - c. Impress class with need of safety measures.
 - d. Give short, comparatively light workout, in order to minimize unduly severe aftereffects of dizziness and stiffness.
3. Warmup before each day's class:
 - a. Limbering routine.
 - b. Ropes and cargo net.
 - c. Rolls (forward and backward) and dives.
 - d. On the apparatus, warmup with some of the stunts that have been presented before.
4. Work in squads in sports program. Rotate squads to different apparatus so that they may work on the hang position and then proceed to the support position. In this way they will use different muscle groups.
5. Instructional work should be on a squad leader basis until they have developed enough strength to work independently and with safety. Emphasis should be given to the need of strengthening the grasps, triceps and abdominal muscles.
6. The class should be assembled in a semi-circular formation on the deck for the introduction of each new stunt.
7. In presenting a new stunt it should be described and demonstrated simultaneously. If the instructor cannot do the stunt, it may be executed by an outstanding student. Talk as little as possible. Teach in a positive manner wherever possible.
8. The class should try the stunt. Give as much individual guidance as possible. Encourage the better performers to help those less efficient.
9. If mistakes are being made, call the group together and make the necessary corrections.
10. Those who are able to execute a stunt in proper form should have it checked for achievement.
11. The better performers should either help others in the class, or work on more advanced tricks.
12. The instruction should be individualized as much as possible. Each one should be encouraged to strive progressively according to his potentialities. The opportunity for individual advancement is lost if the instructor uses the formal method which requires everybody to do the same thing.

A grade scale should encourage the learner to attain his utmost. Skills such as the handspring, and the handbalance should be taught, which the performer will want to practice in his spare time.
13. Frequent short practice periods are much more effective in learning new skills than prolonged periods of practice.

14. If apparatus has to be put away at the close of the period, students should line up for dismissal. Everybody should help to clear the deck. In stacking the mats, place them in pairs with the tops always together—the top is the smoother of the two surfaces; the bottom usually is dotted with tassels. The working surface on top should be kept clean.

In summary, a beginning gymnast may be stimulated to enthusiastic participation in the activity by:

1. The sincere cooperation of competent gymnastic teachers.
2. The use of safe adequate facilities and proper equipment.
3. The feeling of a prestige that accompanies the mastering of a stunt.
4. The presentation of motivating challenges or goals.
5. The desire of the performer to stretch to the utmost of his capacity.
6. The inclination of a "try-try again" spirit.
7. The freedom from injury.
8. The fosterage of courage and of initiative.
9. The correct guidance in the wise use of his time.
10. Capitalize upon the competitive element whenever possible.

CHAPTER V

Safety Methods and Devices

Safety in any sport depends upon wise administration, which takes the following control factors into account in setting up an environment conducive to best results.

Efficient Use of Physical Plant

Factors to be taken into consideration in achieving efficient use of the physical plant are the following: effective use of facilities and equipment; proper time allotment; proper selection and training of personnel; a well-designed gymnasium with adequate lighting and ventilation; regular maintenance, including daily inspection of equipment; proper financial support.

Effective Organization and Supervision

Factors to be taken into consideration in achieving effective organization and supervision are the following: sufficient staff to handle the student load efficiently and safely; development of student leadership to aid in controlling the environment safely; provision for watchful supervision and proper guarding of the gymnasium at all times; removal of all hazards when program is not in operation; rigid enforcement of safety rules:

A "Gymnasium Guard" should be used during free periods.

All hazards should be eliminated.

Lock the gymnasium.

Lock trampolines and springboards.

Suspend rings and climbing ropes by pulleys.

Progressive Conditioning

Factors to be taken into consideration in regard to progressive conditioning are the following: physical fitness (organic vigor) equal to the task required; the development of adequate strength, endurance, power, agility, balance and flexibility; the judicious use of warm ups; an appreciation of the importance of sound physical condition for participation in gymnastic activities.

Effective Instruction

Safety Development Desired. 1. Knowledge of the condition (namely: the strength, ability and aptitude) of the individual and of the group as well as safety procedures.
2. Good habits especially in regard to the overlearning of fundamentals.

3. Skills equal to the task.
4. Worthwhile attitudes, especially self-confidence in the performer.
5. Appreciation of the importance of a well-prepared, conditioned readiness (namely: essential strength, ability and condition) for the task at hand.

Safety Fundamentals for the Instructor

1. Remember that accidents in gymnastics and tumbling never "just happen"—they are caused.
2. Enforce the safety fundamentals as listed for learners.
3. Strict adherence to safety rules.
4. Stress need of individual responsibility toward safety.
5. Daily inspection of apparatus:
 - a. Inspect for faults.
 - b. Inspect for proper adjustment.
 - c. Inspect for obstruction hazards, e.g., people, loose balls.
6. Stress point that a stunt executed by the skilled performer is not easy.
 - a. Progression from the simple to the complex must be recognized.
 - b. A performer should not try a stunt until he is prepared for it.
 - c. Build strength and skill progressively.
 - d. Practice fundamentals until mastered.
7. Strive to develop self-confidence of the performer.

Principles for the Learner

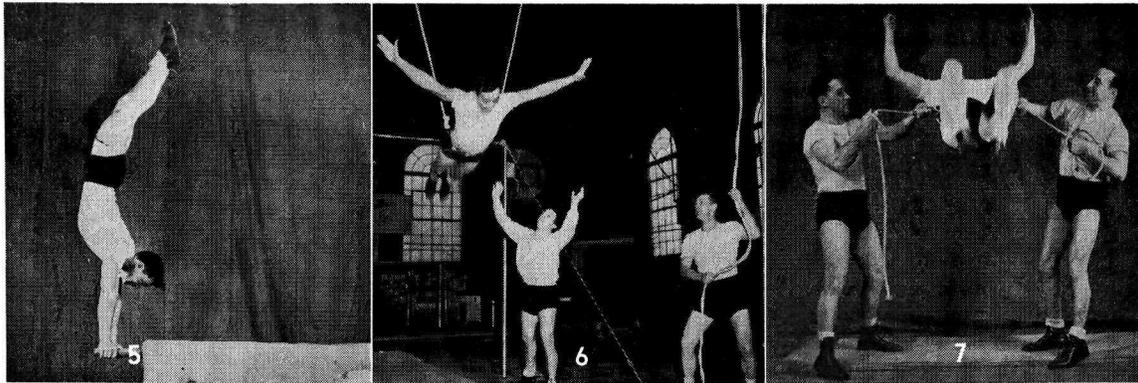
1. An appreciation of the value of progressive conditioning, strength, skill, coordination, and ability in gymnastics and tumbling.
 - a. Warm-up properly.
 - b. Do not attempt a stunt beyond ability.
 - c. Master the fundamentals.
2. The value and necessity of relatively simple, though strength-building activities for the grasps and the triceps (do not swing on the parallel bars until arms are sufficiently strong) and the abdominals.
3. The need to assist each other:
 - a. Master the art of spotting by acting as performer and spotter respectively.
 - b. Support classmate in order that he may experience kinesthetic feel of a new stunt and being supported in turn.
 - c. Assist in manipulating safety belt.*
4. A thorough knowledge of apparatus:
 - a. Be able to recognize faulty apparatus.
 - b. Be able to set up apparatus properly.
 - c. Inspect apparatus each time it is used.
5. Knowledge of proper placing of mats:
 - a. Provide adequate mats around apparatus.
 - b. Place mats on apparatus when helpful, e.g., across parallel bars when learning hand balance. (See plate 5)

* Many instructors do not use safety belts on the assumption that the performer learns to depend upon them too much. If the individual masters lead-up activities to a difficult stunt he will not need a safety belt. In this way the performer learns to depend upon himself and great confidence is developed. Such a policy demands expert coaching.

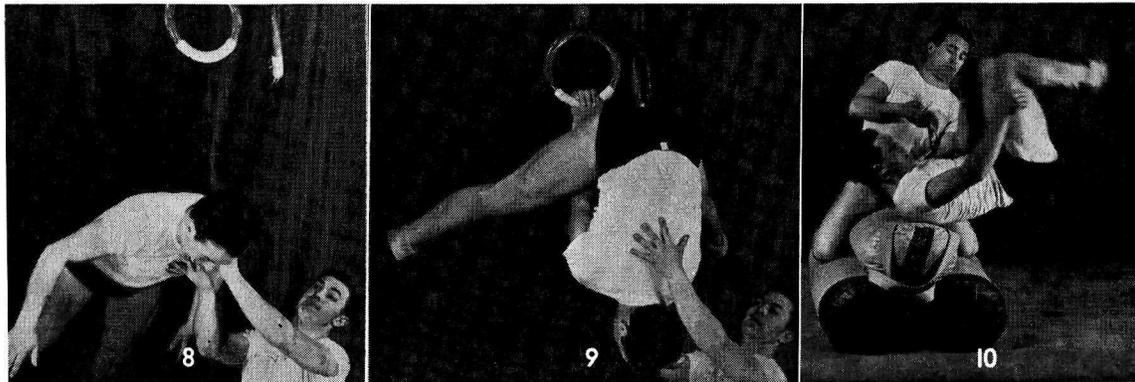
- c. Replace mats to correct position if displaced by force of dismount.
- d. Tie mats together for fast continuous tumbling.
- 6. Ability to dismount properly from high bar and rings.
 - a. Dismount on back end of swing when in extended position.
- 7. Ability to fall properly.*
- 8. Wise use of magnesium carbonate (mag.) and resin.
- 9. "No "horse play."

THE ART OF SPOTTING OR GUARDING THE PERFORMER

HINTS FOR INSTRUCTOR

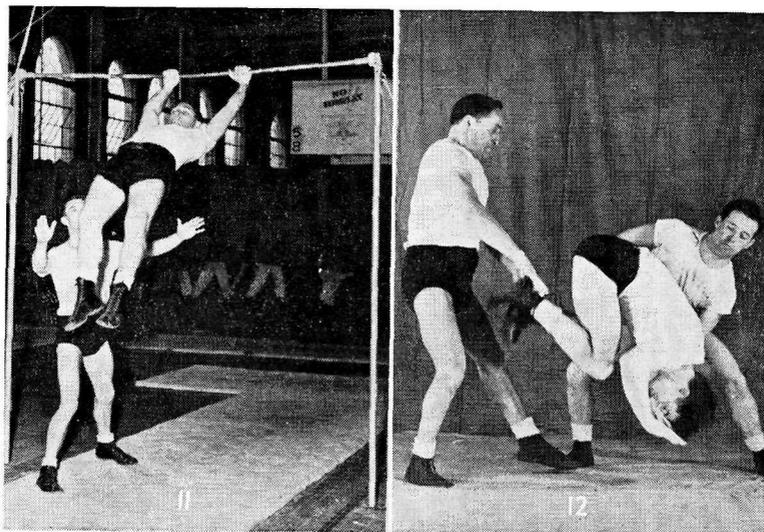


- 5—The placing of mats across the apparatus to prevent injury.
- 6—Using the suspended safety belt.
- 7—Using the hand safety belt.



- 8—Pushing the performer.
- 9—Holding the performer.
- 10—Lifting the performer.

* See Illustrations Nos. 9-33.



- 11—Taking a position of readiness to assist. Do not actually assist unless the need arises!
- 12—Teach and demand that performers spot each other effectively.

Spotting and Guarding Cues for the Performer

1. Be sure to have a spotter for a new trick!
2. Do not depend entirely upon mat protection!
3. Analyze the mechanical details of the stunt and have a spotter wherever a fall might occur!
4. Do not be foolhardy!
5. Do not jest with the performer until he has dismounted!
6. Never change your mind in the middle of a stunt!

TUMBLING AND STUMBLING

Importance of Learning to Fall Safely (Breakfall)

Tumbling, perhaps, does teach literally how to "tumble" or fall without sustaining injury. The crew on board ship in a rough sea or on combat duty, the paratrooper who must attempt to alight safely, should know how to "break" a fall.

The teaching of handsprings, necksprings, handsprings, round-offs, back handsprings, cartwheels, somersaults, and other highly specialized skills should be supplemented with practical instruction in the art of tumbling or stumbling without injury. Athletes in specialized sports may prevent serious injury through mastery of tumbling or "breakfalling."

The Breakfall Is Important

From the safety point of view, the breakfall, a simple but necessary part of training, is the most important single skill in athletics; yet, it is one of the most neglected areas of directed learnings. The viewpoint seems to have been taken that the art of falling will take care of itself. Falling is a part of all types of sports as well as everyday activity and, therefore, should be regarded as a necessary fundamental in the training of every individual. Practically every sport is hazardous; certainly gymnastics may be considered so if it is not properly taught.

Principles of Breakfalling

Several principles should be remembered while practicing the art of breakfalling:

1. Give with the fall in a kind of controlled relaxation.

"It is . . . a well-known fact that a blow of a given strength on a muscle will result in a rupture of the muscle if it is under tension, but will result in a fracture of the bone if the muscle is relaxed, and since fractures are, in general, more serious than ruptured muscles, it can be seen that there is greater incidence of fractures when muscles are in a relaxed condition. Muscles under tension, therefore, act as a protection or splint for the bone, and by taking the injury themselves prevent more serious bone accidents."¹

2. The use of arms or legs to reduce the momentum of the fall.
3. Cushioning the fall.
4. Making use of "rolling."
5. Falling forward, if possible, by turning head and shoulders.
6. Keeping fingers pointed forward and chin on the chest when falling backward.
7. Keeping chin to the side when falling forward. It is suggested that the cadet:
 - a. Practice falling with each principle in mind until mastery of all has been obtained.
 - b. Devote ten minutes every day to breakfalling as a part of a warm up, and overlearn it until it becomes automatic.

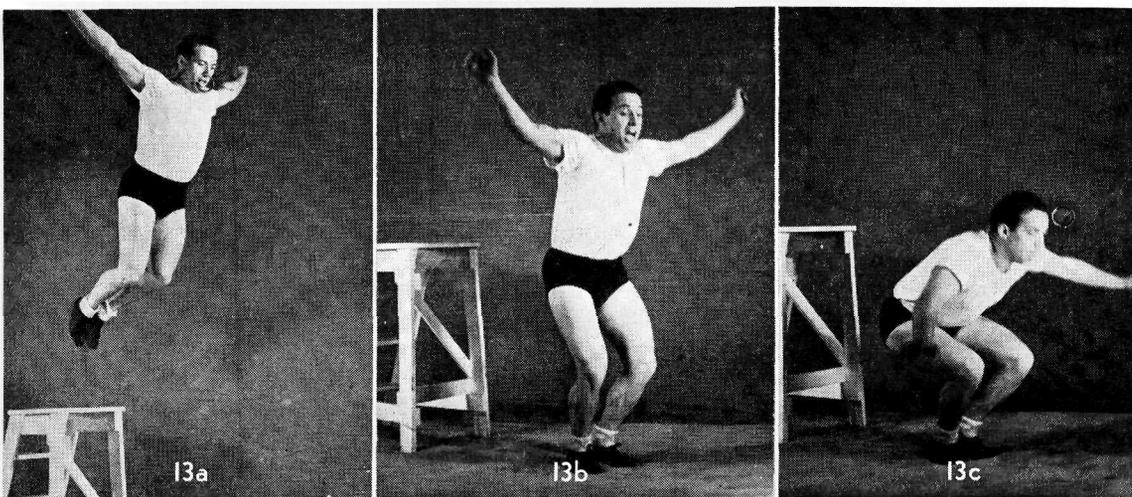
Types of Breakfalls

Everybody, civilians and members of the armed forces alike, should know how to prevent injury when jumping, or landing feet first from a height; when falling forward from four different positions, namely:

1. Head first.
2. Parallel to deck in an extended position.
3. Feet first with forward momentum.
4. Hands and feet together.

when falling sideward, and when falling backward.

¹ From *Control of Football Injuries* by Marvin A. Stevens and W. W. Phelps, Copyright 1933, by A. S. Barnes and Company, Inc., P. 15.



13—*Jumping or Landing Feet First from a Height.*—(a)—Keep the head up—Keep the back straight, lean slightly forward—Keep the arms extended sideways, palms up—Use the arms for balance; (b)—Land on the balls of the feet; (c)—Bend at the knees to cushion the shock of landing!

Variation.—The breakfall may be varied by executing one-half turns in the air, and by jumping off the trestle backwards, followed by backward rolls. Falling forward head first with hips high permits the execution of a tuck and forward roll only if the hips are high enough.

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14.—*Falling Forward, Head First with Hips High.*—(a) Keep the tongue in—Keep eyes open; (b) Trail with the feet—Land with the arms straight; (c) Bend at the elbow—Tuck the chin on the chest and lower the nape of the neck to the deck—Give with the fall!

If falling headfirst with legs directly overhead, the *head must be forced upward* to avoid breaking the neck.

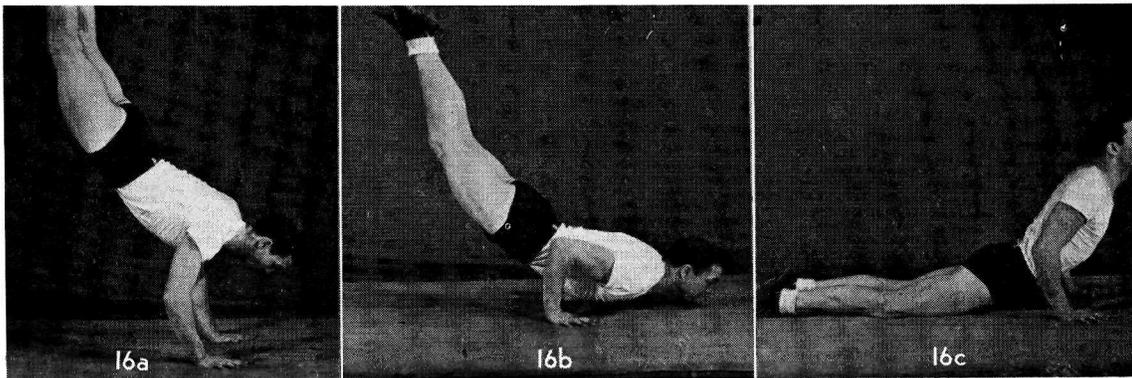
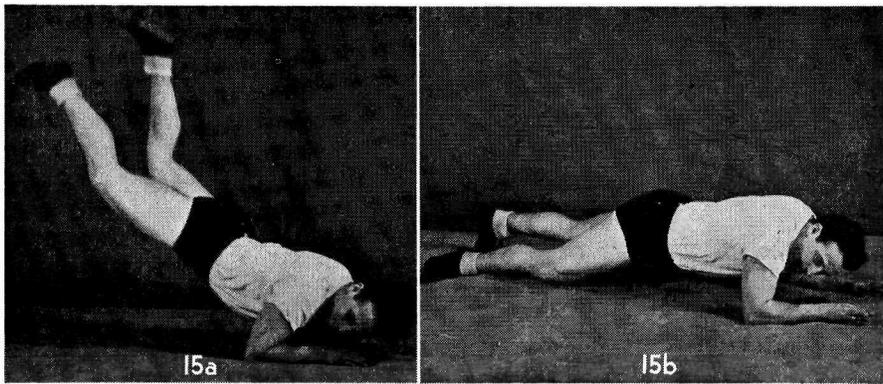
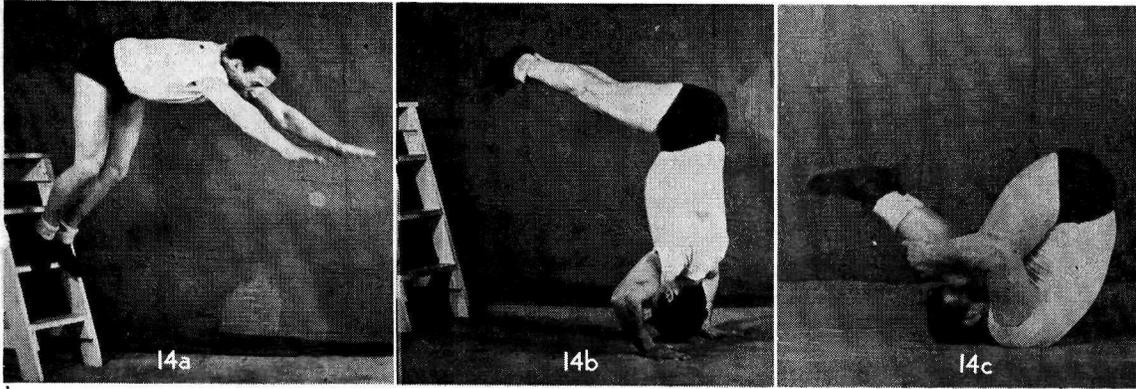
If the individual trips while running at full speed, he must resort to the slapping principle of falling often called the "Football Fall."

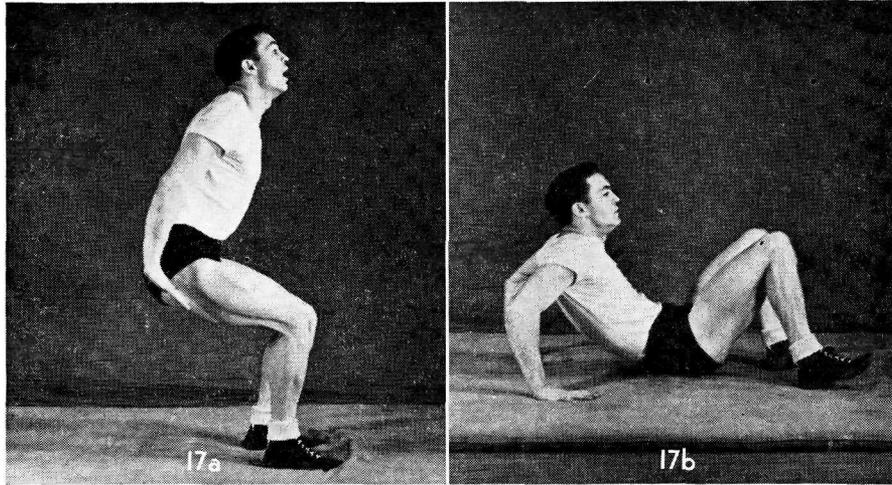
15.—*Falling Forward, Parallel to the Deck in an Extended Position.*—(a) Keep tongue in—First bring forearms down vigorously—Cushion the rest of the body to the deck; (b) Turn the head to one side to protect the chin—Cushion the rest of the body to the deck!

A well-trained performer may catch himself on his hands, bend the arms at the elbows, and lower himself in an arched position. The chest first will make the contact with the deck followed by the abdominal region and then by the entire front of the body. By forcing the shoulders forward, the back should be arched, the toes pointed.

16.—*Variation—Falling Forward in an Extended Position.*—(a) Keep the arms straight and land on them first; (b) Then bend at the elbows; (c) Keep the back arched!

Pull back hard with the head and chest and attempt to swing the feet down and under the body.





17—*Feet First with Forward and Downward Momentum.*—(a) Use the slapping principle; have the feet absorb the shock; (b) Fingers pointed forward—Lean backward to counterbalance forward momentum—Keep the chin on the chest—Cushion the body to the deck!

When falling from a height and the lean is too far forward for landing on the feet alone, and not quite enough to do a dive and roll, the performer lands on feet and hands at the same time.

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18—*Hands and Feet Together.*—(a) Lean backwards to counterbalance the forward momentum; (b) Fingers pointed forward—Flex the legs and arms simultaneously upon landing!

If the momentum is in a sideward direction, for example, a football or a basketball player may reach for a loose ball he should tuck and execute a sideward roll.

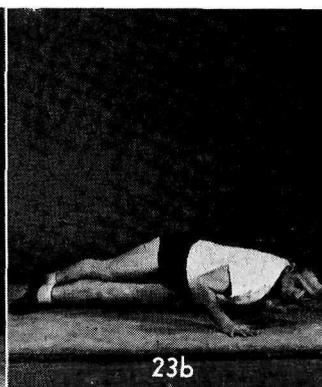
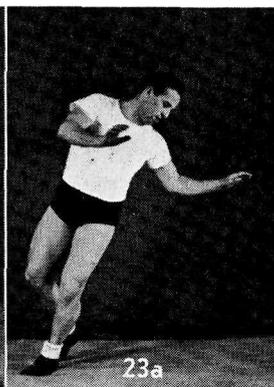
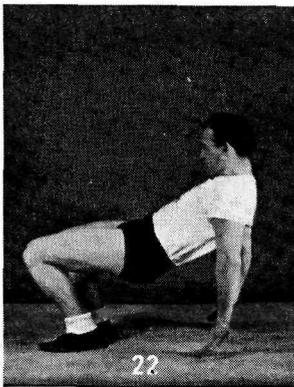
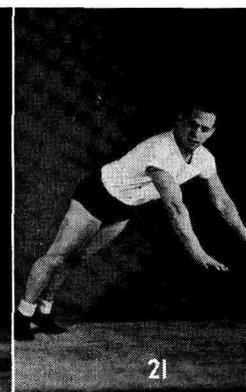
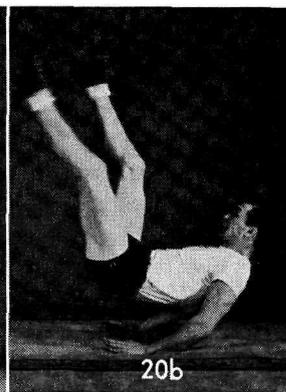
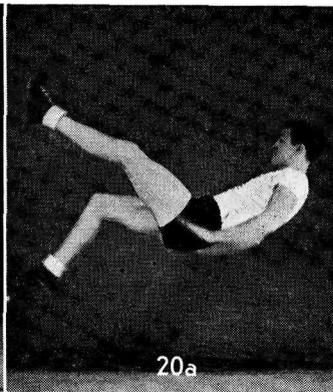
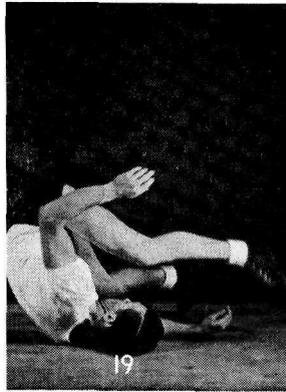
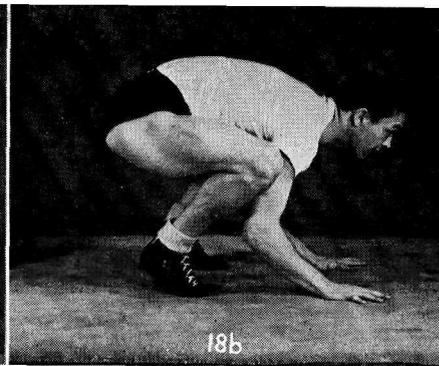
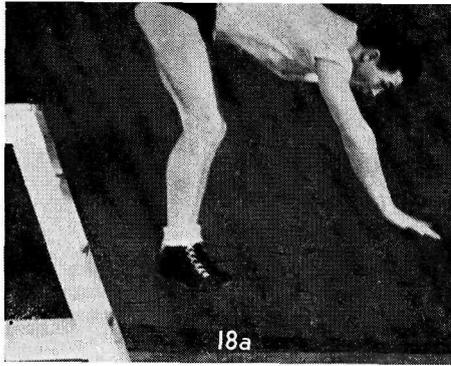
19—*Falling Sideward, Tuck and Sideward Shoulder Roll.*—Start roll low rather than high—Throw extended arms across chest—Roll on shoulders rather than small of back—Keep tucked all the time!

If falling with the back to the deck, try to turn about in the air and face the deck. Cushion the fall with the hands, and at the same time roll sideward or forward. If it is impossible to land on the feet, land on all fours, and cushion the body to the deck. The arms should be straight at the elbow and in a forward oblique position. Slap the arms to the deck as hard as possible, thus cushioning the body to the deck. The chin should be on the chest and the feet slightly in front of the head. A neck injury could result if the feet were beyond the vertical position. The "stage" breakfall, as it is called, is used effectively in breakfall acts on the stage.

20—*Falling Backward from Height.*—(a) Chin on chest—Feet just short of the vertical position; (b) Fingers pointed forward—Arms straight and forward oblique—Slap the arms to the deck as hard as possible to cushion the fall!

Elementary Learning Activity for the Breakfall

21—*Fall Forward.*—Fingers pointed forward—Head to the side to protect the chin—Cushion the body to the fall by flexing arms.

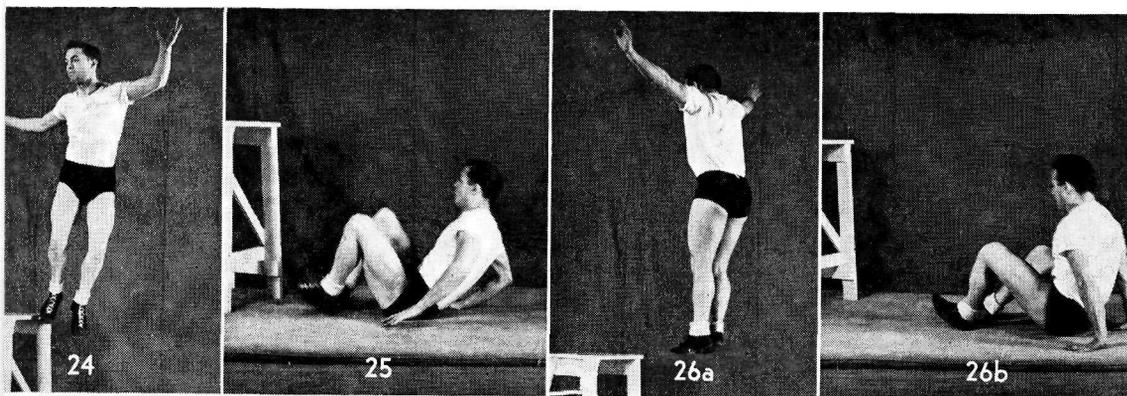


22—*Fall Backward*.—Chin on chest—Hands slightly behind hips—Fingers pointed forward—Hands hit deck before body!

Teaching Procedure.—It is advisable to first practice with a spotter who supports the performer's weight with one hand on the neck. He places the performer's hand on the deck, slightly behind the hips, the fingers pointing forward. The heel of the hand should hit the deck first.

23—*Backward Roll, One-half Turn, Forward Breakfall*.—(a) Do not stop before turn—Turn while momentum is still backward; (b) Land on hands first!

Teaching Procedure.—This activity should stress the point that the attempt should be made to fall forward rather than backward.



- 24—*Jumping Forward from a Height, Feet First.*—Jumping forward from a height with one-half turn and backward roll.
- 25—*Jumping Backward from a Height and Backward Roll.*—Lean inward toward the fall—Keep leaning forward on backward roll!
- 26—*Various Kinds of Jumps, Turns, and Rolls from a Graduated Platform.*—
 (a) Lean inward toward the fall; (b) Keep leaning forward on backward roll!

Summary

In summary, a well-functioning program of gymnastics and tumbling may be conducted with a minimum of accidents if the following are emphasized:

1. The importance of spotting or guarding in the gymnasium.
 - a. The performer should understand clearly that it is his own responsibility to be sure that he is spotted properly.
 - b. The performer should not be foolhardy.
 - c. The performer should never change his mind in the middle of a trick.
2. The grasps, triceps, and abdominals of the performer should be built up through progressive strength-building exercises before he tries swinging tricks.
3. The important principles of falling safely should be overlearned by the performer.
 - a. Slapping the mat with the arms.
 - b. Slapping the mat with the back of the leg below knee, if necessary.
 - c. Fingers pointed forward if falling backward.
 - d. Cushioning the fall by bending the knees upon alighting.
 - e. Tuck and roll forward, sideways, or backward whenever possible.
 - f. Turning forward and face the fall if possible.

The breakfall is of decided value in all sports or activities in which injury from falling may occur.

APPLICATION OF TUMBLING AND JUMPING ACTIVITY TO
PARACHUTE TRAINING*

Much of the material taught in gymnastics and tumbling may be applied directly or indirectly to parachute training. For example, rope climbing (See p. 168), the "trainasium," high bar, and many other training devices all contribute to the development of upper body strength. Excellent training could be supplied by the flying rings. An individual could be pushed in such a manner that he would acquire a crooked swing which he would be forced to straighten out. Such training would develop the muscles needed by the paratrooper to prevent oscillation of the chute during descent. (See Plate 27a) The traveling rings, too, could be used for this purpose.

In actual parachute training, the paratrooper must master the art of: (1) Landing and falling safely; (2) Jumping from platforms and correctly learning to absorb the shock of landing; (3) Jumping from a 200 foot tower while suspended in a harness; (4) Jumping from a tower free; (5) Sliding speedily down an inclined beam to adjust to horizontal velocity. (Nos. 1-5 inclusive prove need of tumbling training.); (6) Controlling the chute in descent and when he is being dragged by a wind machine. (This proves the need of upper body strength.)

In parachute landing, it is necessary to maintain the sitting position with the knees bent and relaxed rather than attempting to keep an upright position. Emphasis should be made to fall and roll, release and give in all types of falls. Under no consideration should you fight the fall.

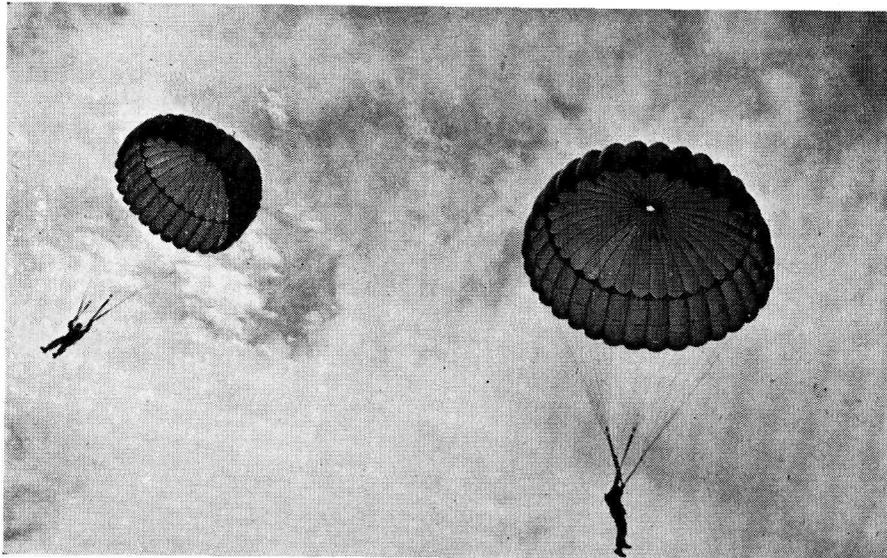
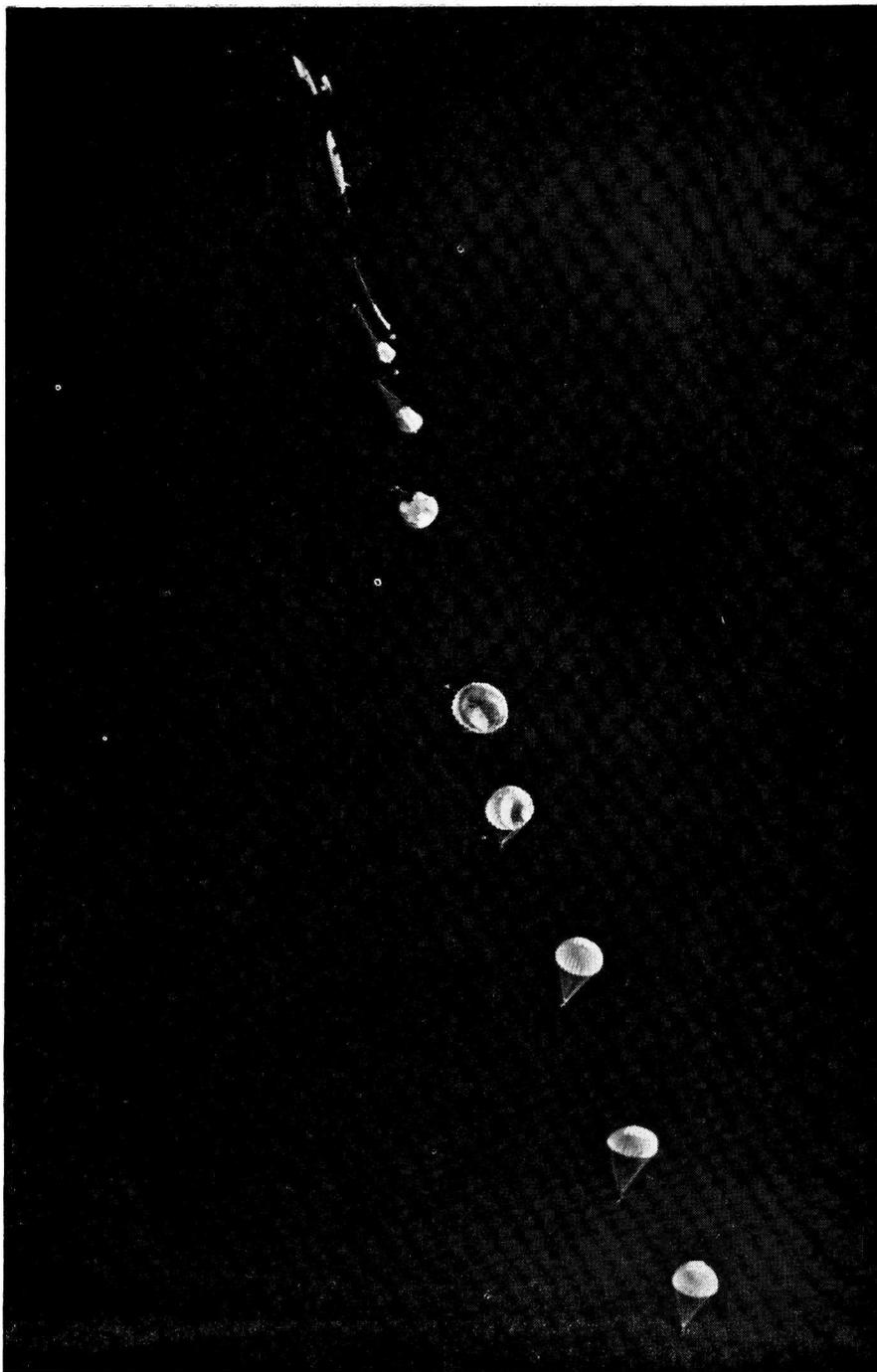


PLATE 27a

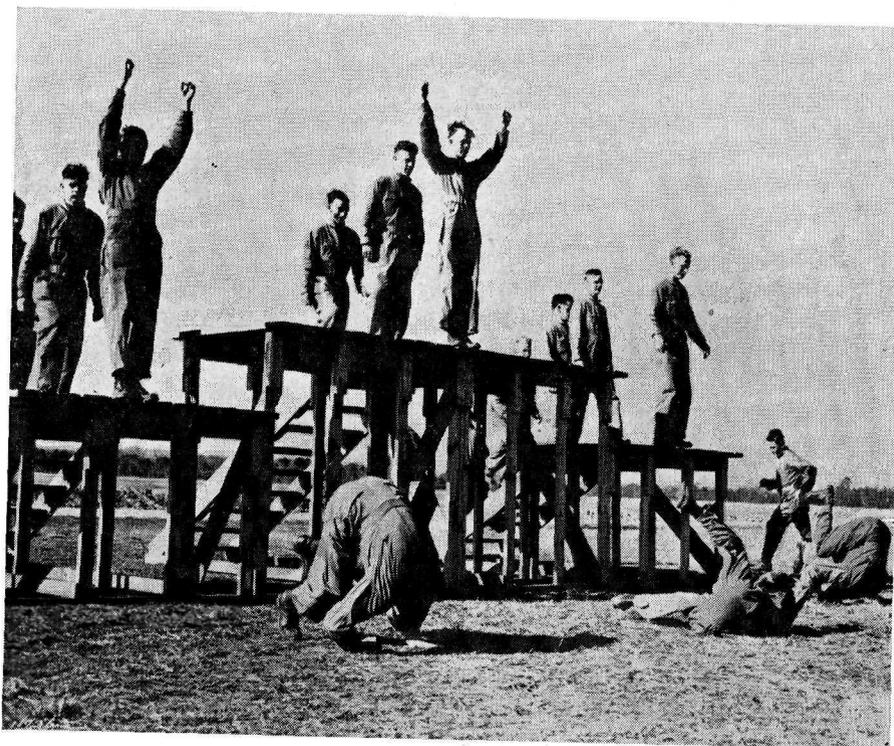
* Also refer to 16 mm. Film on Marine Parachute Activities NN-18.



27b—*Paratroopers in Action.*—Practice jumps are usually made from a height of about 1000 feet but when in combat, jumps are made from a much lower height.



28—*The Importance of Leg Conditioning.*—The all out effort activities in the gymnastic program include development of leg exercises. The squat jump in particular, which is a core requirement for every aviation cadet, represents one of the best leg developers.



29—*Platform Jumping.*—Platform jumping and various rolls indicate the need of tumbling versatility. The same type of tumbling is given to cadets early in their training. This teaches them to tumble and fall in all possible body positions without injury. Body control and a sense of direction are required while in the air.



30—*Backward Jump*.—The jump pictured here is similar to a backward jump from any height. The cadet is taught to bend the upper trunk forward; use the arms and head to control upright balance while in the air; look towards the deck; land on the balls of the feet with the legs slightly apart to insure a well controlled landing.

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31a—*Backward Parachute Roll*.—This roll requires the mastery of the following tumbling skills: (1) The controlled backward jump from a platform at a prescribed height; (2) The backward shoulder roll; (3) Falling flat in a prone position. Excellent control of the body is essential during the jump as well as the ability to respond in a well coordinated way while revolving through an inverted position.

31b—*Shoulder Roll on Right Shoulder*.—The landing is made forcefully on the balls of the feet, knees bent. The body is in a tucked position. The arms are close to the body and the chin turned to the right and tucked to the chest. The standing position is assumed as quickly as possible on completion of the roll.

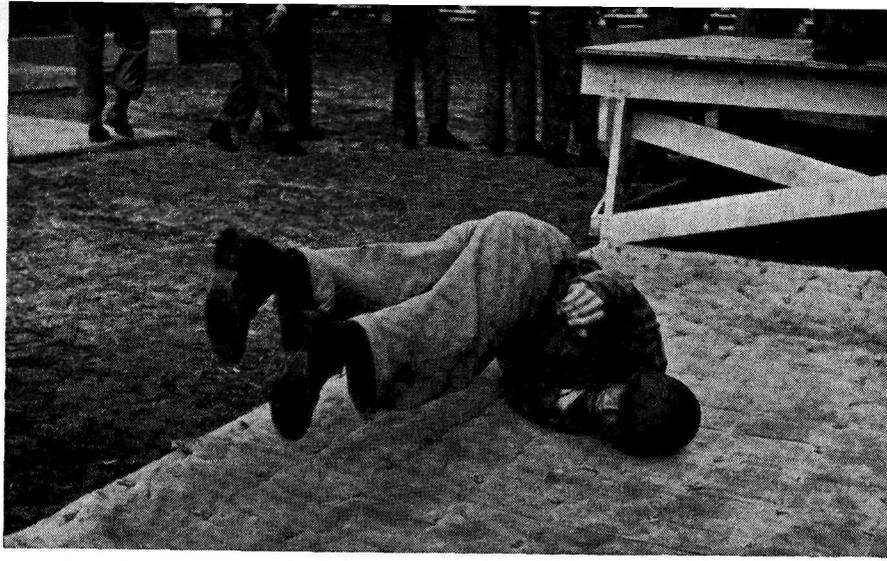


PLATE 31a



PLATE 31b



31c—*Group Work in Tumbling.*—This backward roll to the side and over the shoulder shows the tucked position of the body and the equal distribution of body weight on the side of the head and shoulders. The hands, in some cases, are used to help balance and equal weight distribution. However, the principle involved is a roll without the use of the hands. The completed roll (not shown) ends by keeping the hands clear of the deck, extending them to the front and at the same time clapping them together. This will control the arms and prevent injury to the elbows and arms.

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32—*Rolling Parachute Landing.*—The coordination of rolling while in a chute gives the second progressive stage of a backward shoulder roll. Notice the following: (1) The body assumes a tucked position. (2) The roll is executed on the right shoulder. (3) The chin is kept close to the body. (4) The arms are pulled toward the chest.

33—*Rolling After Parachute Landing.*—The necessity of correct procedure in falling and rolling backwards is illustrated. (1) The feet have hit the ground. (2) The body has been eased down by knee flexion. (3) The arms are held close to the body and have not been used to break the landing shock. (4) The combined action of leg flexion and a backward shoulder roll complete a safe landing.

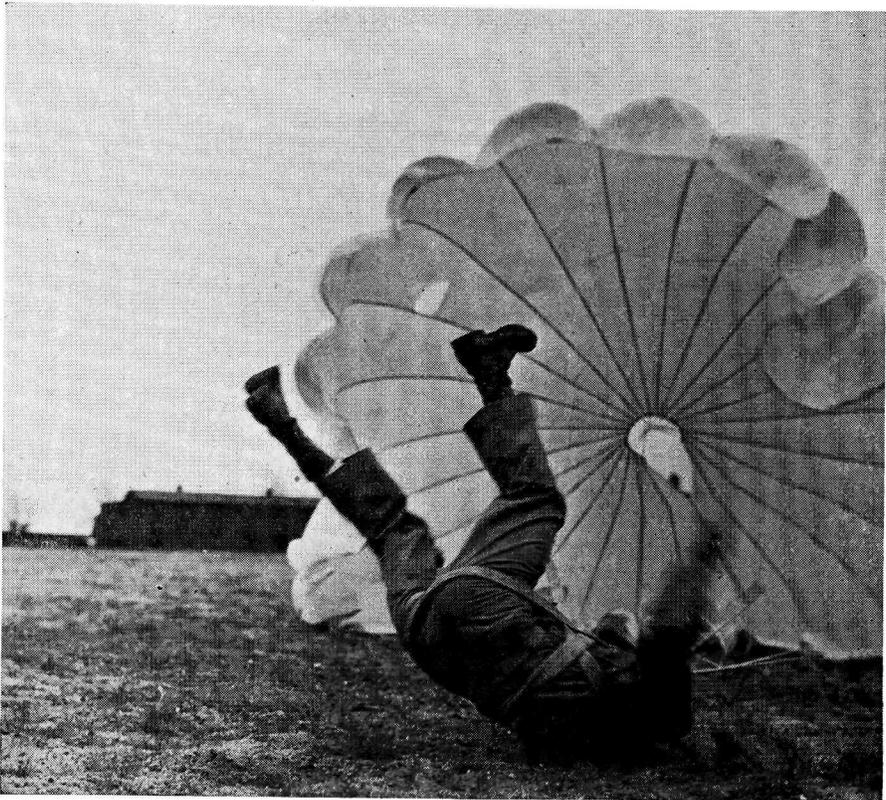


PLATE 32

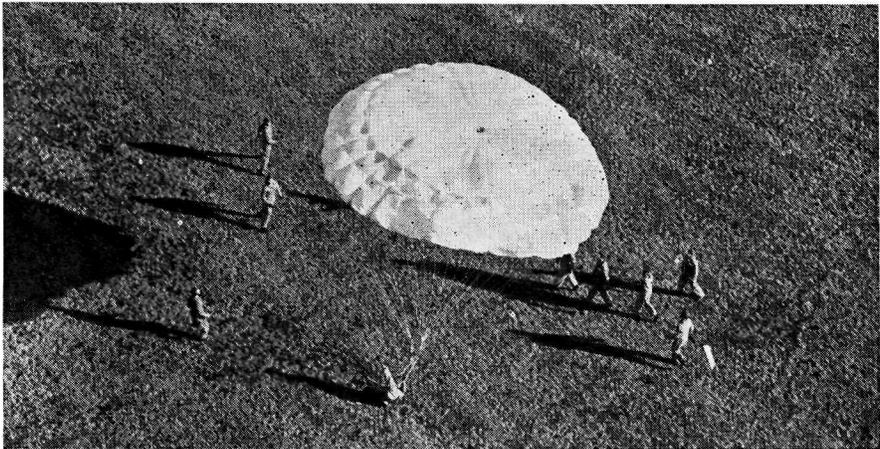
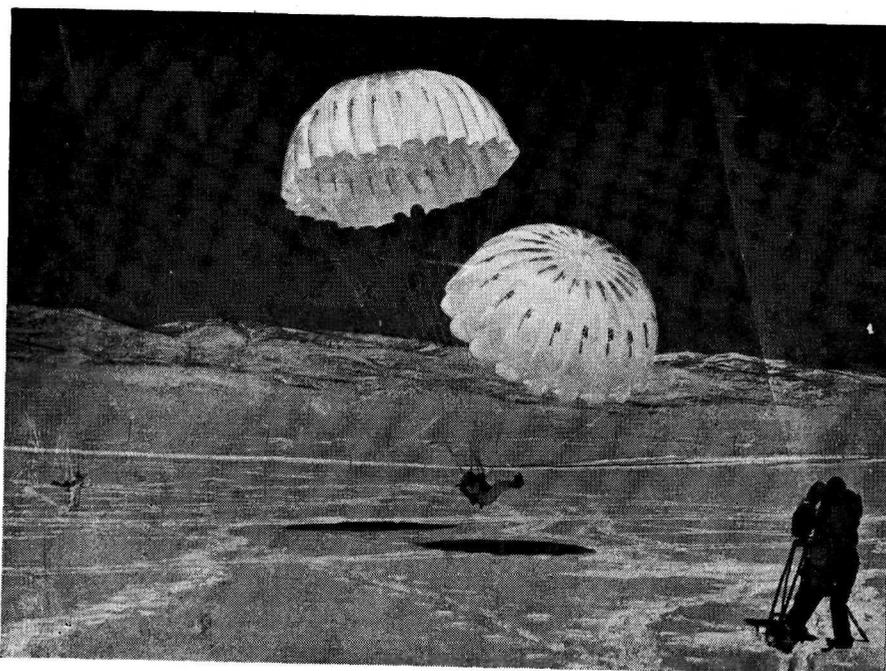


PLATE 33

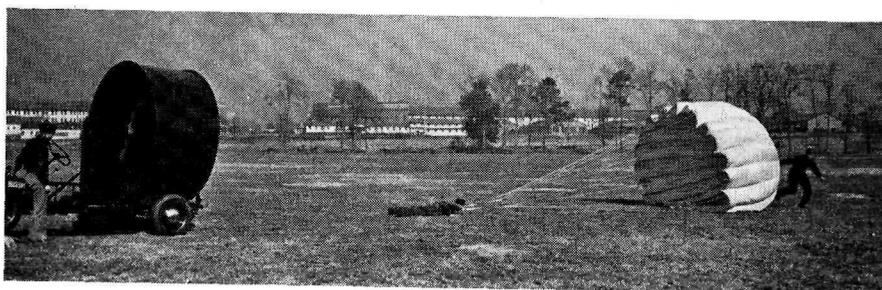


- 34 *Backward Roll in Parachute.*—Perfect control of the body and excellent upper body strength are needed to successfully control the chute or complete the landing illustrated. The training received by cadets in tumbling, vaulting and climbing contributes to agility, body control, and upper body strength factors required in safe parachute landing.

**Don't Fight
the Fall!**



35—*Preparing to Roll on Landing.*—This is an unusual illustration showing an approaching landing by the use of a second and emergency chute. The body will hit the ground in a seat or foot drag position. The action of the chute will cause the body to be pulled backward. The fall should be broken by the action of the knee flexion and bend. The body then tucks and a follow through is executed by the legs as the body goes into a backward roll.



36—*Foot Drag.*—The completed foot drag fall is shown. The body has been pulled off balance by the chute and the shock of hitting the deck has been taken up by the hands and bent arm position. Dragging the feet is a method of slowing down the fall and getting the body ready to absorb the landing shock. Usually there is not time enough to twist, tuck or roll.

CHAPTER VI

Warm Up and Conditioning

A brief explanation of warm up and conditioning will be presented in an advisory manner rather than in a detailed capacity in the following chapter.

One factor that cannot be stressed too emphatically is the *need for a warm up previous to participation in any activity*. A warm up for vigorous exercise is needed to prepare the muscles, the joints and the entire organism for strenuous activity. It is body preparation for immediate activity.

Conditioning

Conditioning is a state of body tonus. It is a prerequisite to the desired end of optimum efficiency in the execution of any activity that demands the effective physical and mental fitness of each participant.

Once the cadet has conditioned himself to the sport in which he expects to participate, a thorough, progressive warm up assures responsive qualities of pliancy, flexibility, suppleness, limberness of muscles and general adaptability of the organism. An effective warm up invigorates, stimulates and prepares a person for further more vigorous activity. It insures him against pulled muscles, and muscular strains.

If an individual ceases active participation during competition and has to await his turn between events, he should maintain the body warmth that he had acquired by putting on a sweatsuit or by wrapping himself in a blanket. This precautionary procedure maintains the body heat established by the warm up. The muscles may then go into immediate action when the time comes to continue the activity or the event.

Following strenuous activity, the judicious performer manifests as much care in the tapering off process as he did in the warm up. When he is ready for the showers, he proceeds to them immediately and does not loiter, or subject himself to draughts or a sudden drop in body temperature. The cadet who uses both the warm up and tapering off procedures is likely to be the one who will require fewer visits to the training room or to the infirmary.

WARM UP PROCEDURES

Free Exercises

Free exercises or calisthenics as a means of limbering up are indispensable as a warm up procedure. The type used will depend on the background of the instructor and may be allied to any particular sport or activity.

A combination of Danish and German free extension exercises is recommended. These total body movements executed rhythmically are conducive to stretching the large muscle groups as well as the smaller fundamental muscle groups so necessary in the execution of gymnastic stunts.

A lesson plan for conditioning exercises is as follows:

1. *Arms* (extension of arms and shoulders).
2. *Trunk Turning* (for waist).
3. *Leg Raising* (for pelvic region) or *Balance*.
4. *Trunk Sideward Bending* (for extension of side of trunk).
5. *Neck and Chest* (for loosening neck and chest).
6. *Trunk Forward Bending* (for extension of lower back and thighs).
7. *Heavy Leg* (for legs).
8. *Trunk Lowering*.—Trunk straight from head to hips (for postural effects).
9. *Abdominal* (for abdominal muscles).
10. *Correctional*.—Include work where there is noted deficiency in strength (usually support work or abdominals).
11. *Stepping* (for legs, rhythm, balance, and agility).
12. *Breathing* (for tapering off in effort and relaxation).

The following body positions should be used in all warm up actions:

Standing.

Kneeling.

Sitting.

Lying.—Prone and Supine.

The conditioning routine should be given a name such as "Gopher Conditioner"; "Illini Eleven" or "Navy Needfuls." The exercises, too, should be given names to save time for actual exercising instead of wasting time giving a lot of commands.

Coordination and Agility Drills

The instructor gives brisk commands demanding quick reaction and response of group. The class assumes these designated positions and accomplishes the movements as fast as possible for alert execution.

Executory commands may be used as follows:

1. *Run!* (Running in place lifting knees high.)
2. *Squat!*
3. *Belly to Deck!*
4. *Back to Deck!*
5. *Stand!*
6. *Head to Deck!*
7. *Forward Roll!*
8. *Backward Roll!*
9. *Fall Forward—Sit Through!*
10. Instructor adds others as he considers advisable.

Limbering Exercises

Body stretching, twisting, bending, knee bending and running in place are activities that may be employed. These exercises may be executed in a limited area and at will.

PRINCIPLES INVOLVED IN LESSON PLANNING

Selection of Appropriate Exercises

The development of the big muscle groups, namely trunk, chest, abdominals,

arms and back, should be emphasized. For the legs, additional running in place or squat jumps should be prescribed.

Totality of Musculature Included in Lesson

The entire musculature should be included. No one part should be exercised to the neglect of another.

Unity of Lesson

The lesson plan should proceed with logical continuity with the energy curve in mind.

Progression or Change in Lesson

The introduction of new exercises maintains interest and individual desire to produce better results. Obvious weaknesses and deficiencies for gymnastics, for example, the abdominals and the triceps, should be remedied by means of special work.

The Principle of the Energy Curve

The exercises should proceed from the relatively easy to the strenuous and complex and upon reaching the peak of the energy curve, tapering off in effort should follow.

ELEMENTARY TRAINING OR CONDITIONING

The beginner must learn that the specifics for gymnastic success are:

1. *Upper Body Strength, Power, Flexibility, Balance and Agility.*
2. *Strength.*—Strength may be developed by: Push Ups, Chins, Dips and the like.
3. *Grasps.*—Grasps must be strengthened: A tight grip should be stressed at first. The beginner should strengthen progressively the ordinary, the reverse, and combined grasps.
4. *Body Positions Should Be Mastered.*—Stand—Hang (Ordinary)—Hang (Inverted) on the hands—On the head—Hanging from knees with head down.
5. *Stunts as a Warm Up.*—Stunts may be used as a warm up as preparation for performance on apparatus. Such a procedure may be accomplished best by using simple fundamental stunts. Instructional material from the lesson of the previous day may be used effectively for the warm up.
6. *Progression in Gymnastic Skill.*—All-round physical development should be encouraged: The cadet should be trained adequately both in the hang and in the support position.

Thorough knowledge of elementary stunts: Effective advancement from the simple to the complex should be obtained by means of proper mastery of elementary stunts.

Building of gymnastic routines: Routines should be built from separate stunts as they are mastered.

7. *An Awareness of Safety Measures.**

* See Chapter V.

ADVANCED TRAINING OR CONDITIONING

The individual gymnast usually develops a conditioning schedule of his own under competent supervision.

During the first month, practice sessions should be of short duration and should include calisthenics and light workouts on the apparatus. Flexibility, organic power, agility and endurance must be built up; the hands must be toughened gradually.

Each team member should be required to practice on each piece of apparatus, regardless of individual preferences.

Individual competition leads to winning. Winning is important but the prime purpose of any physical activity is to fully promote general all-round development. Specialization on a particular piece of apparatus to the exclusion of others hinders such a purpose of all-round achievement.

After each team member has advanced in all-round ability and skill, time can be devoted to specialization. However, it is a sound policy to encourage gymnasts to work on at least three pieces of apparatus in a meet.

After the first month of practice, each member should make up a tentative optional routine of stunts on at least three pieces of apparatus. No matter how simple these activities are they should be practiced every day. The first part of each practice should be spent on the optional figures, which will be composed of stunts already mastered. Constant repetition of the figures will build endurance and improve form.

The second part of apparatus practice should be devoted to the learning of new stunts. When mastered, they can be included in the optional routine that has been tentatively planned by the performer. Thus a gymnast is never at a loss as to what he will do in a meet.

Practice sessions should be held every day, but different apparatus should be used on alternate days. Thus, interest is maintained and sore hands and staleness are prevented.

If a required combination is to be part of a competition, it should be practiced every day together with the tentative optional routine.

One month before the first meet, a weekly practice meet should be held in order to brush up on the finer points of competition.

The conditioning of the hands is of utmost importance. Regular workouts with progressively longer practice periods should condition the hands adequately. Whenever the hands feel tender and sore, practice should be stopped. The bar should be kept clean at all times. (See Illustration No. 37)

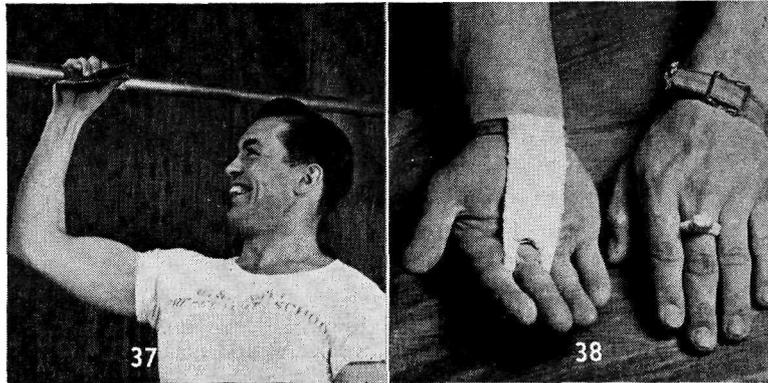
Avoid ripping the hands. Calluses should be pared periodically by the trainer with a razor blade. They may then be smoothed off with emery cloth or sandpaper.

The hands should be washed thoroughly after practice and all magnesium carbonate and resin should be removed.

The hands toughen more quickly and effectively by working on various pieces of apparatus. Soreness caused by working on the high bar may be relieved by practice on the horse or the parallel bars. A specialist is forced to discontinue practice should his hands bother him. The hands may be toughened gradually by spacing practice sessions on alternate days on the same apparatus. Application of tincture of benzoine to the palms after practice should help toughen the hands.

A protecting hand guard may be worn. (See Illustration No. 38) Make it out of lamp wick $1\frac{3}{4}$ " x 6", one end of which is slit, through which the middle finger is

slipped, while the other end is attached to the wrist and held secure by means of a strap. Also from the standpoint of protection, rings should never be worn in practice.



37—Cleaning the bar.

38—Protecting hand guard.

After the competitive season is under way, efforts should be directed toward perfecting routines rather than learning new tricks.

Hints to the Competitor Concerning Continuity of a Routine

1. Use only those stunts which have been mastered completely.
2. Avoid intermediate or extra swings.
3. Keep routine reasonably short.
4. Relax in all negative movements; but maintain good form even though certain muscles are relaxed.
5. Grace of movement rather than strength should be emphasized. Rhythmical and swinging tricks are much more difficult and rate a higher score.
6. A good start and finish to a routine makes a very favorable impression on judges. Plan a smooth and spectacular mount and dismount.
7. Let proper approach to the apparatus and retreat become habitual.

CHAPTER VII

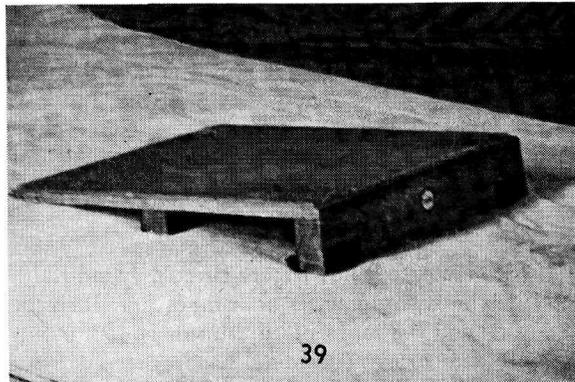
Gymnastic and Tumbling Nomenclature

The terminology in gymnastics is confusing to the novice due to the fact, perhaps, that so many sources have contributed to gymnastics. Any attempt to coordinate the different nomenclature into one acceptable to all has proved to be a difficult task.*

GYMNASTIC APPARATUS AND THEIR PARTS

Gymnastic apparatus upon which stunts may be executed are stationary, for example, climbing ropes; or movable appliances, for example, side horse. Positions and movements are usually described in relation to the apparatus upon which they are performed. (See pp. 59-68)

Regular Apparatus (and their parts):



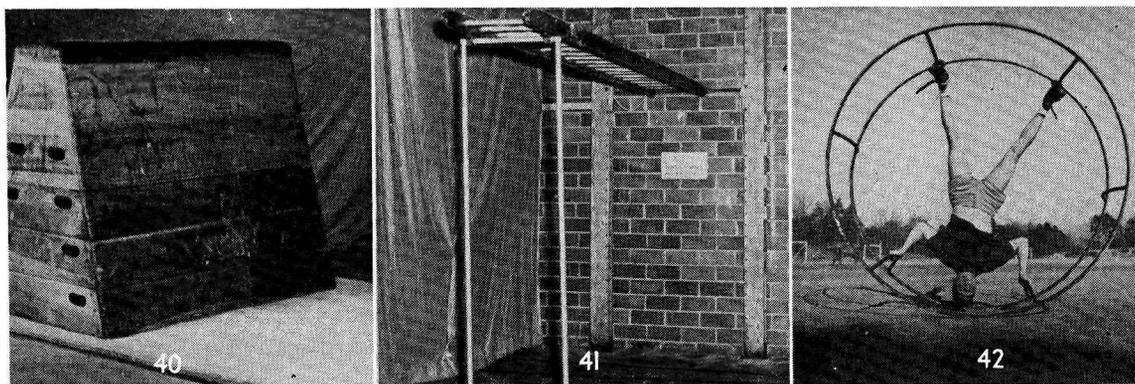
39—*Beat Board*.—An inclined board approximately 30" x 25" covered with a cork carpet or rubber shod used for take off in connection with long horse, buck and tumbling. The inclined plane is four inches.

Buck.—(See Plate 335a) Range of adjustment is 36" to 57". Similar to the side horse except the body is about two feet long. The buck was invented by Eiselen. Exercises described in *Turmtafeln*, 1837.

Climbing Ropes.—(See Plate 466) Ropes made of four strands of selected and durable long fiber, manila (about 1½" in diameter) especially designed for climbing. Ropes generally arranged in vertical, horizontal or inclined positions in reference to the deck surface. Knotted climbing ropes have knots braided around and through the rope, eight inches apart, to aid the beginner. The rope and rope ladder were used first at Basedow's

* To avoid duplication which would make this manual unnecessarily lengthy; reference is made to plates which appear elsewhere, when a plate does not precede each definition.

- Philanthropinon, 1774. The oblique rope was the invention of Ling and his followers.
- Flying Rings*.—(See Plate 322c) (7" to 10" across and one inch in diameter) Leather covered or rubber covered rings attached to strong, adjustable webbing straps are suspended from ceiling, and hang about 20" apart. Often called the Roman rings, which probably indicates they were originated in Italy. The rings were described by Spiess (*Turnlehre*) in 1842.
- Horizontal Bar*.—(See Plate 146a) (High Bar; Turning Bar; Chinning Bar; Vaulting Bar) A steel or wood bar parallel to the deck, adjustable for height, suspended from ceiling by wire guys or held firm by pipe uprights. Bar 1" diameter, 7' length. Adjustable vaulting bars are adjustable from two to seven and one-half feet. The horizontal bar is one of the oldest pieces of gymnastic apparatus. Jahn made popular its use. By the middle of the Nineteenth Century the steel bar replaced the wooden bar.
- Long Horse*.—(See Plate 386) A side horse without pommels, one end of which is raised for vaulting.
- Low Parallel Bars*.—(See Plate 515) Bar 7' long, 15" high, 18" wide for practicing balances, usually hand balances.
- Mats*.—(See Plate 701b) Substantial canvas covered pads with filling of 2" felt, or kapok. Manufactured in assorted lengths, widths and grades. Mats were first mentioned by Nachtegall in 1804. In all probability, they were used when vaulting was started over the horse.
- Parallel Bars*.—(See Plate 70) Standardized, adjustable, parallel hand rails made of finest grained hickory connected to the uprights. The uprights are connected by pressed steel rails oval in shape. The rails pass under the uprights and are secured entirely within the base. Range of adjustment is from 3'9" to 5'3" in height and from 15" to 18" in width (shoulder width). The parallel bars were invented by Jahn and used in his playground in 1812.
- Side Horse*.—(See Plate 369a) A leather covered cylindrical body about 14" in diameter, having two pommels or handles near the center. The height may be adjusted and the range of adjustment is 36" to 57".
- Pommels*.—(See Plate 375c) The raised handles on a horse. The horse was originated by the Romans. It was used extensively on Jahn's playground.
- Spring Board*.—(See Plate 728b) An inclined board approximately 6' x 22" extending over a fulcrum about half of its length. Constructed of ash, light in weight, rubber shod and upper end covered with cork carpet. Used for springing in connection with tumbling, horse, buck and parallel bars.
- Spring Beat Board*.—An inclined board approximately 4' x 20" designed to give less spring than the regular spring board. The spring board was used by Jahn and described fully in Eiselen's *Turnkunst*, 1847.
- Trampoline (Bounding Table, Bounding Bed, Tramp, Recreation Bouncer)*.—(See Plate 742) A resilient table of strong canvas, supported by springs attached to a pipe or wooden frame. Stands on inclined legs attached on the bottom about three feet high.
- Vaulting Bar*.—(See Horizontal Bar, Plate No. 152.)



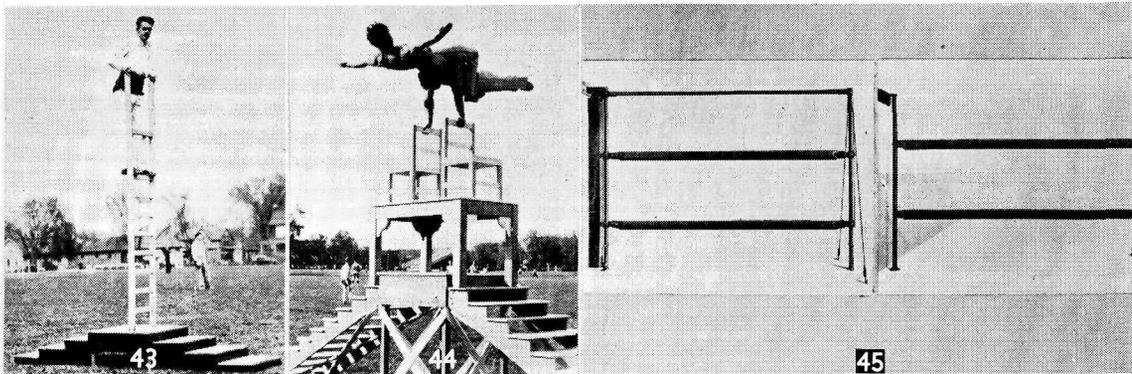
40—*Vaulting Box (Box)*.—Made of light, strong wood, the top padded with hair felt and covered with leather. Includes four lifts for adjustment of heights. Used for vaulting. Total height 49", width approximately 54". The vaulting box was originated by Ling and his followers.

• *Supplementary Apparatus*

41—*Adjustable Ladders*.—Three different sized ladders attached to each other. (1) a 16' vertical; (2) a 15' inclined or horizontal adjustable; (3) a 7' ladder. Folds against the wall when not in use. Guts Muths and Father Jahn used the oblique ladder. Vertical ladder exercises were described by Eiselen (*Turntafeln*) in 1837. Eiselen first used the horizontal ladder which was later used by Spiess as the main apparatus for girls.

42—*Aero Wheels or Rhon Rods*.—A large, wheel-like, double frame made of circular 1" piping, frames spaced about 2'6" apart. The performer places feet in footrests within frame and grasps opposite sides of frame to attempt to revolve the aero wheel.

Balance Beam or Board.—(See Plate 645) Single steel rail or board usually 12' x 2" upon which performer walks in balancing. Balancing upon a beam has been used for almost a century. Basedow, Guts Muths and Vieth emphasized balancing upon a beam.



43—*Balancing Ladders*.—Ladders on which the rungs are about 6" apart. As the performer climbs, he jiggles ladder to keep it relatively erect, striving to reach top without falling off.

Balancing Stairs.—(See Plate 44) A small set of stairs about four to six steps built at a low angle used for hand balances and handwalks.

44—*Balancing Tables and Chairs*.—Tables and chairs durably built for building pyramids.

Benches.—A backless seat which may be used in connection with stall bars to obtain effective leverages. Benches are also used for partner work.

45—*Boom (Swedish Boom)*.—An adjustable rail about 10' x 2½" x 8". The boom was invented by Ling.

Cargo Net.—(See Plate 480) One or two standard cargo nets lashed together and suspended to provide climbing practice.

Climbing Poles.—(See Plate 491) Usually made from Oregon pine, 18' or less in height and 1½" in diameter. Piping may be improvised for this purpose.

46—*Climbing Shelf*.—A heavily constructed horizontal platform projecting from the bulkhead braced by "L" supports. Approximately 8' to 9' in height, 10' in length and 4' in width. Used for mounts and dismounts in climbing technique.

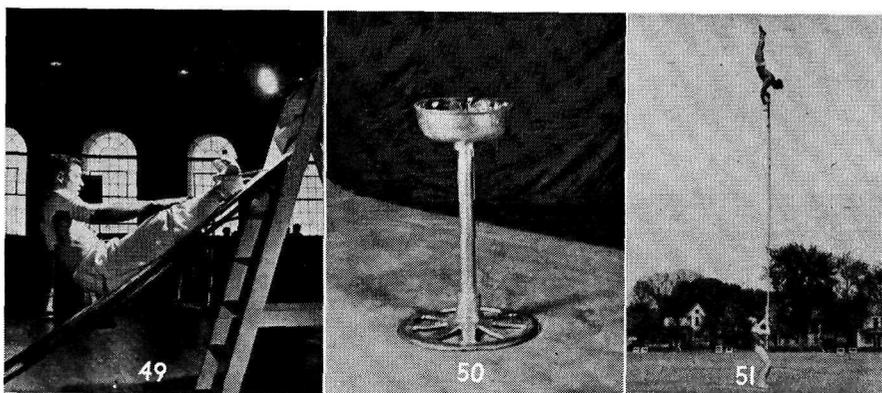
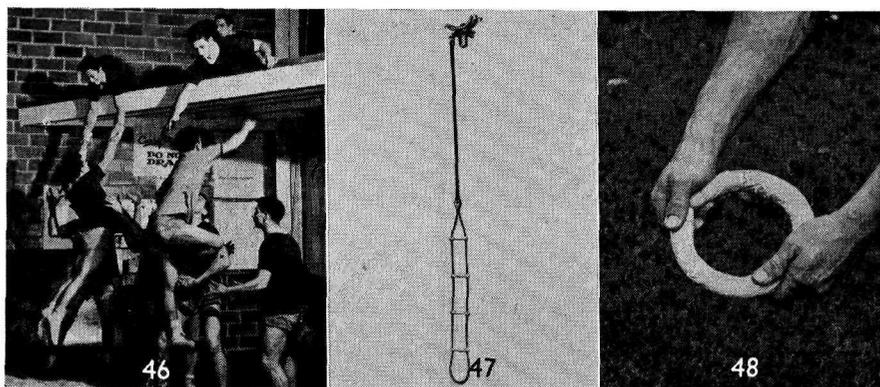
Caster (Dolly).—(See Plate 842) A small carriage for moving trampoline or mats. May also be used for relays.

47—*Giant Stride (Merry-Go-Round; Flying Course)*.—Six or eight rope ladders attached to a switch. A Giant Stride was first described by Elias (*Gymnastik*) in 1819.

48—*Grommet (Doughnut)*.—A padded circular ring 4" to 6" in diameter used for free head balances.

Horizontal Ladder.—(See Adjustable Ladders, Plate 41)

Hoops.—A circular loop which may be used for drills or for tumbling or tight wire novelty acts.



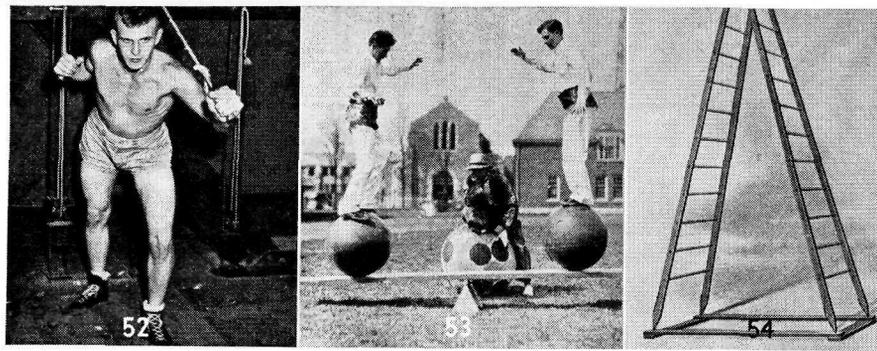
49—*Inclined Board*.—A slanting board secured to bulkhead which is used for increasing the load for sit-ups.

50—*Magnesium Container*.—Small stand with oval container on top for holding magnesium carbonate.

Medicine Ball.—(See Plate 824) A ball consisting of an outerlaced leather cover or inner sewn cover keeping a center filler intact and free from dust.

Peg Board.—A vertical board with holes about 6" apart for climbing. The climber grasps a peg in each hand, inserting them in holes as high as he can reach. Removing one peg, thus leaving his entire weight supported by the one grasp, he pulls himself up to insert the peg into the next hole, 6" higher; he proceeds, alternating the pegs as he climbs. He descends in reverse order.

51—*Perch Pole*.—A pole twenty to thirty feet in height balanced by an under-stander. A topmounter performs on top of the pole.



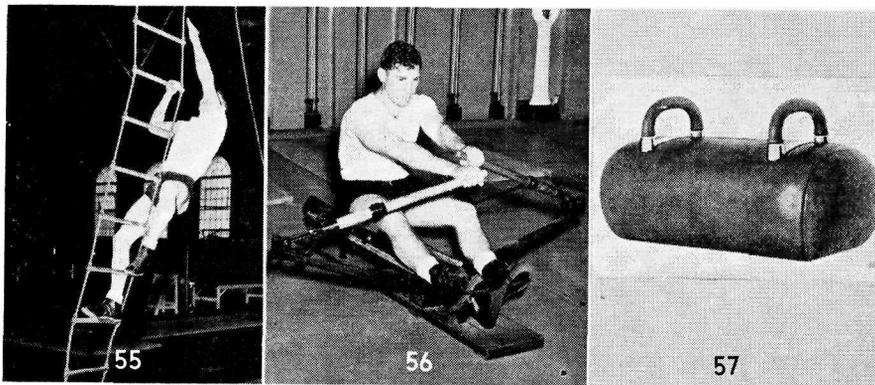
52—*Pulley Weights*.—A noiseless and self-lubricating exercising machine. Equipped with double set of pulleys, rods, weights, and so on. Used for developmental and corrective purposes. Modern pulley weights machines and other hydraulic resistance machines were invented by Sargent.

Rails.—The two side bars on a ladder.

53—*Rolling Globes*.—Large globes about 18" to 24" in diameter upon which performer stands erect; used for balancing.

Rolls, Mat (Football Dummies, Football Rolls).—(See Plate 695) Round football rolls 4' long 1' in diameter. Used in teaching handsprings, and the like.

54—*Roman Ladders*.—Two ladders used for pyramid building; smaller at top than at base; fitted with handles at the top.



55—*Rope Ladders*.—Maple rounds are worked into the side ropes which are usually four strands. They are usually 18' or less in height.

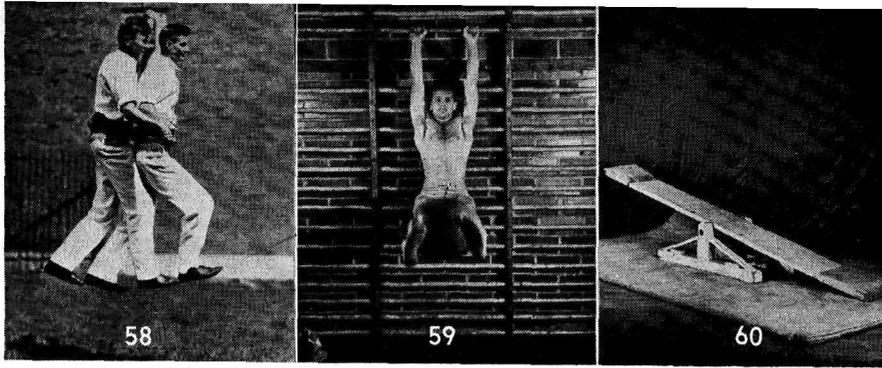
56—*Rowing Machine*.—A mechanical appliance which permits the motions of rowing a boat.

Rungs.—The cross pieces on a ladder or stall bars.

Safety Belt (Lunge Strap or Mechanic).—(See Plate 6) A strong leather or webbing belt having ropes attached to its sides by swivels. Lunge ropes may be held by individuals or side ropes carried over pulleys on the ceiling to a large single rope, which is held by instructor or cadet squad leader.

See Saw.—(See Teeter Ladder, Plate 61)

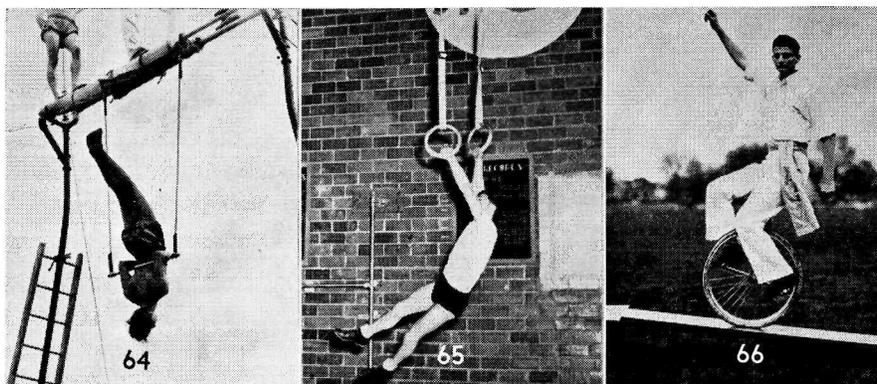
57—*Short Horse*.—Buck with pommels attached.



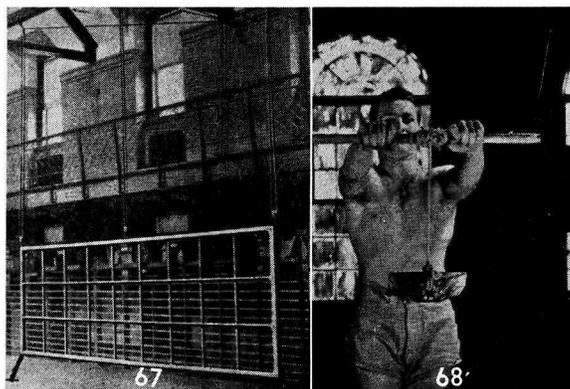
- 58—*Slack Wire*.—A securely anchored, but loosely strung wire, used for balancing on hands and walking on feet.
- 59—*Stall Bars*.—A series of polished hard wood maple bars, $1\frac{1}{2}$ " in diameter and ranging from the deck to a height of approximately 8' or more; 5" space between bars. 2" x 4" uprights, mounted against wall hold bars in place. For developmental and corrective exercises.
- 60—*Teeter Board*.—A board about 8' to 9' x 12" wide used for double pitches. Performer A jumps on one end forcing Performer B from the other end high into the air where he may execute tricks.



- 61—*Teeter Ladder* (See *Saw*, *Whipple Ladder*, *Balance Swing*).—A 10' horizontal ladder which may rock up and down as well as rotate in a circle. The work upon it may be done in the sitting or in the standing position. Guts Muths first placed a board over two poles. Eiselen arranged it for work in a standing position by placing the board over a horizontal bar. Spiess set it up in its present form.²⁶
- 62—*Tiger Stretch*.—A low-lying appliance in which the individual pushes a bar against pressure for the development of the back of the legs. He starts in a squat stand position and pushes the bar out until his body and arms are in a fully extended position. This appliance may be improvised from an old rowing machine.
- 63—*Tight Wire*.—A securely anchored, tightly strung wire used for balance.



- 64—*Trapeze*.—A horizontal bar, two feet long and about one inch in diameter suspended by two ropes. The trapeze was probably used by ancient acrobats. Introduced into the physical education program and named by Amoros in 1806.
- 65—*Traveling Rings*.—A row of four to six rings suspended about six feet apart and 7'6" from the floor.
- 66—*Unicycle*.—A vehicle having one wheel.



- 67—*Window Ladder (Swedish Ladder)*.—A climbing apparatus built in square sections. The climber is able to ascend the ladder threading his body in and out of the squares. The window ladder is nine spaces long and three spaces wide. The overall dimensions are 16'6" long and 5'9" high. The ladder may be used in horizontal or vertical positions. The window ladder was invented by Ling and his followers.
- 68—*Wrist Twist*.—Round stick 1½' long with weight attached to a 4' rope. Hold stick out at shoulder height; arms straight; turn wrists; wind all the rope on stick.

GYMNASTIC NOMENCLATURE OR STANDARD TERMINOLOGY

NOMENCLATURE (TERMINOLOGY)

Gymnastic nomenclature is a system of names used to describe all phases of gymnastics and tumbling. This refers to all stunts, systems of gymnastics, apparatus, and methods of teaching.

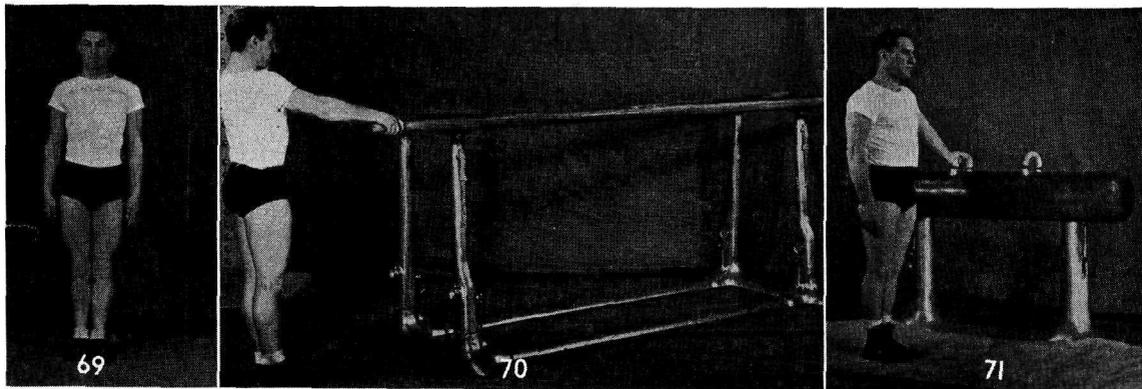
Gymnastics is a system of educational physical activities including activity:

(a) Without apparatus, (b) With light apparatus, (c) On heavy apparatus. *Stunts (Tricks, Exercises, Self-testing Activities)*.—The term "stunt" is preferred as it embraces sound educational and psychological principles from the standpoint of effective learning. Any gymnastic or tumbling activity that is included in the gymnastic and tumbling progression is a stunt.

METHOD OF ESTABLISHING UNIFORM DESCRIPTIONS IN RELATION TO APPARATUS

Establishment of Axes

Establishment of Axes for the performer and for the apparatus is shown in the following illustrations:



69—*Breadth Axis (Body Axis)*.—The breadth axis refers to a line drawn from shoulder to shoulder.

70—*Long (Longitudinal) Axis*.—This refers to an imaginary line running through the length of the apparatus.

Short Axis.—(See Plate 217a) A line through the center of the apparatus at right angles to the long axis.

Relative Position

Tricks or positions are described by the relationship of the breadth axis of the performer to the long (longitudinal) axis of the apparatus, i.e., cross rest or support. (See Plate 217b)

71—Tricks or positions are described whether the body is facing inward or outward; also in relationship to the apparatus. Facing in or frontways, and facing out or rearways, e.g., cross stand sideways.

Cross.—Any position in which the breadth axis of the performer is at right angles to the long axis of the apparatus. (See 217b)

Side.—Any position in which the breadth axis of the performer is parallel to the long axis of the apparatus, e.g., side leaning rest. (See 270a)

A Cross or Side Position may also be described:

Frontways.—When the performer is facing the apparatus.

Rearways.—When the back of the performer is toward the apparatus.

Sideways.—When the side of the performer is toward the apparatus.

Description of Direction

Back (Rear).—(See Plate 266c) Denotes that the back of the body is toward the apparatus.

Front (Face).—(See Plate 369a) Denotes that the front of the body is toward the apparatus.

Side (Flank).—(See Plate 280) Denotes that the side of the body is toward the apparatus.

Left.—A movement toward the left of the performer. Also a movement to the side of the apparatus to the left of the performer, e.g., Flank Vault Left. (See Plate 274)

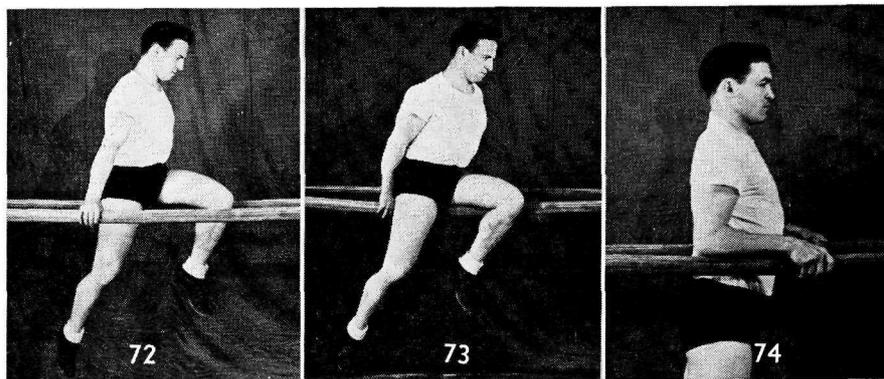
Right.—A movement toward the right of the performer. Also a movement to the side of the apparatus to the right of the performer, e.g., Front Vault Right. (See Plate 345)

Forward.—A movement in which the face or the front of the body leads. (See Plate 259b)

Backward.—A movement in which the feet or back lead. (See Plate 188b)

Right Circle.—A circle is right when it is clockwise, e.g., Left Leg Half Circle Right. (See Plate 375c)

Left Circle.—A circle is left when it is counter clockwise. The circles may be half or full, e.g., Right Leg Half Circle Left. (See Plate 376c)



72—*Inside.*—The inner part of the apparatus or part of the body, e.g., Inside Cross Riding Seat Left.

73—*Outside.*—The outer part of the apparatus or part of the body, e.g., Outside Cross Riding Seat Right.

Description of Fundamental Positions

The fundamental positions on the apparatus are the Stands, the Supports or Rests, the Hangs and the Seats. These positions then may be described as front or side depending upon the relationship of the breadth axis of the performer to the long axis of the apparatus.

Ordinary Stand.—Stand refers to an active erect standing position of the performer before he begins to execute stunts, tricks, or exercises. Thus the stand can be frontways or rearways; it also may be side or cross, depending upon his relationship to the apparatus.

Support or Rest.—An active position by the performer in which he supports himself by the arms, with the elbows and trunk above the hands.

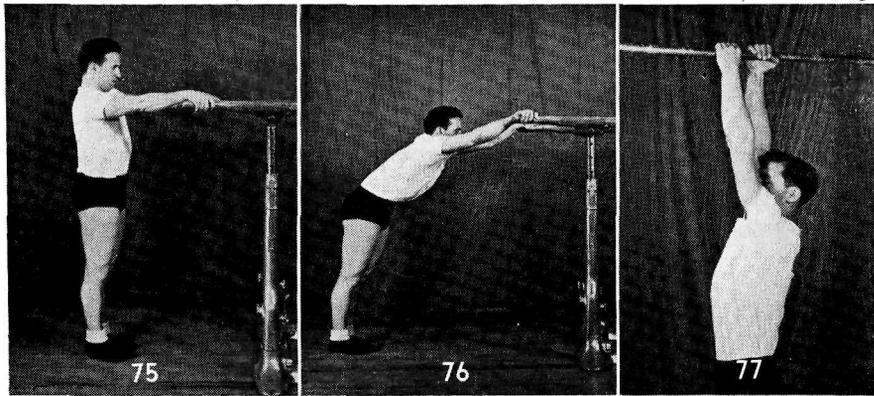
Cross Support or Rest.—A support is cross when the body axis is at right angles to the longitudinal axis.

Astride Left (Right) Arm Support.—A support (rest) with one hand between the thighs. (See Plate 373c)

Bent Arm Support (Rest).—Any support on which the elbows are flexed to their fullest extent. (See Plate 220a)

74- *Elbow Support (Rest).*—Weight of body supported on the forearms.

Side Support (Rest).—When the breadth axis of body is parallel to the longitudinal axis of the apparatus. (See Plate 155)



75—*Support-Stand (Leaning Rest).*—The stand and the support may be combined to form a support-stand which is a combination of an ordinary stand and a support or rest.

76—*Support Lying.*—A combined support and lying position with most of the weight supported by the arms.

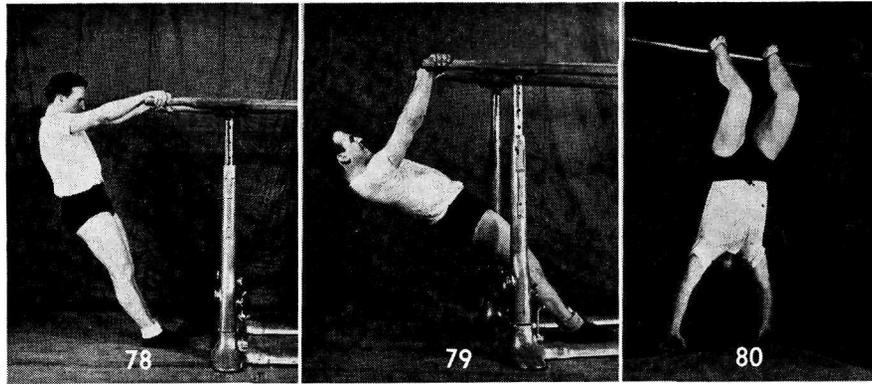
Hang.—Hanging in a fully extended position with the weight below the point of support. Thus the hang may be also cross or side, depending on the relationship of breadth axis and longitudinal axis of the apparatus. (See Plate 146a)

77—*Cross Hang.*—A hang in cross position.

Side Hang.—A hang in side position. (See Plate 146a)

Bent Arm Hang.—A hang with the arms flexed. (See Plate 283)

Inverted Hang (Hang with Head Down).—A hang with the legs extending upward. (See Plate 287a)



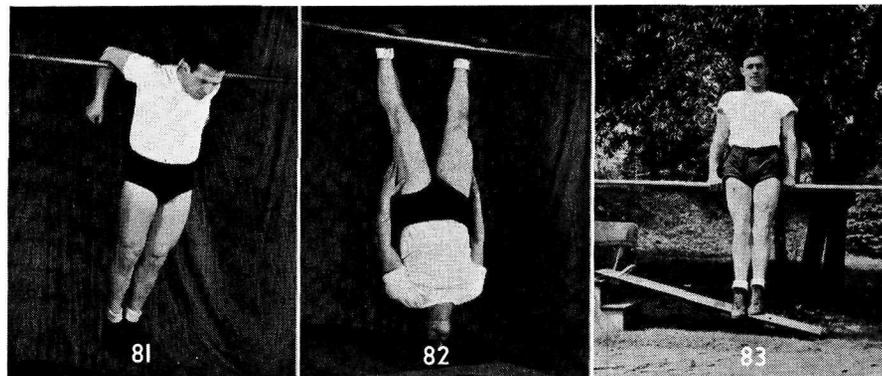
78—*Hang-Stand (Leaning Hang)*.—Similarly the hang may be combined with the stand to form a hang-stand. The hang-stand may also be forward or backward, cross or side.

79—*Hang Lying*.—A combined hanging and lying position, with most of the weight suspended from the hands.

Knee Hang (Hock Hang).—A hang from one or both flexed knees. (See Plate 164a) For Hock Hang. (See Plate 191a)

80—*Heel Hang*.—A hang by one or both heels.

Nest Hang (Crow's Nest, Back Side Hang).—A hang by the hands and toes with body arched and belly down. (See Plate 288b)



81—*Elbow Hang*.—To hang from flexed elbows.

Upper Arm Hang.—To hang from the upper arms with or without the hands. (See Plate 244a)

82—*Toe Hang*.—A hang by the toes.

Knee Stand.—A stand on the flexed knees. (See Plate 342a)

Seat.—A sitting position on the apparatus on which most of the weight is supported by the thighs and buttocks.

Cross Seat.—A seat in cross position with the weight supported by the inside of the thighs. (See Plate 238a)

Riding Seat.—A seat astride the apparatus.

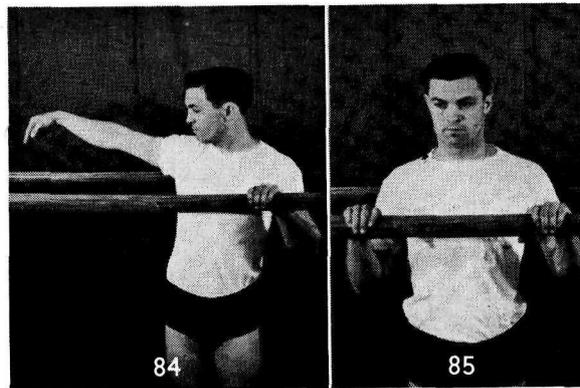
Cross Riding Seat (Straddle Seat).—A riding seat in cross position with weight supported by inner sides of thighs. Such a seat may be outside or inside, and right or left.

83—*Side Seat.*—A side riding seat with left (right) thigh forward.

Side Riding Seat.—A riding seat in side position with weight supported by the front of one thigh and the back of the other. Such a seat may be outside or inside; and right or left.

Left (Right) Side Riding Seat.—A side riding seat with left (right) thigh forward. (See Plate 370c)

Description of Relationship of Performer to Parts of Apparatus



The following illustrations are on the Parallel Bars.

84—*Back Bar.*—The bar behind the performer when he is standing between the parallel bars facing the other bar.

85—*Front Bar.*—The bar in front of the performer when he is standing between the parallel bars and facing one bar.

Near Bar.—The bar of the parallel bars closest to the performer. (See Plate 281)

Near End.—The end toward the approach. (See Plate 247a)

Near Side.—Side of the apparatus from which the approach is made. (See Plate 282)

Far Bar.—The bar of the parallel bars farthest from the performer. (See Plate 267a)

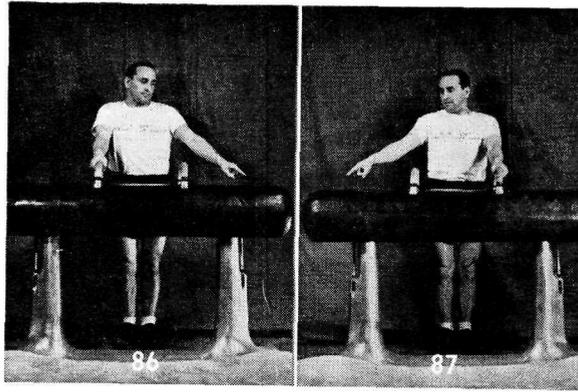
Far End.—The end remote from the approach. (See Plate 263c)

Far Side.—Side opposite the side of approach. (See plate 266c)

Right Bar.—The bar on the right-hand side of the performer. (See Plate 217a)

Left Bar.—The bar on the left-hand side of the performer. (See Plate 217a)

The following illustrations are on the Side Horse:



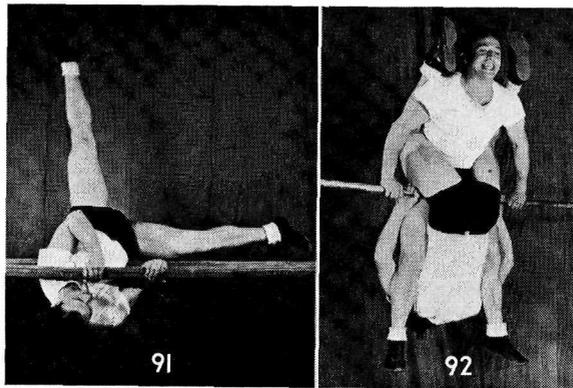
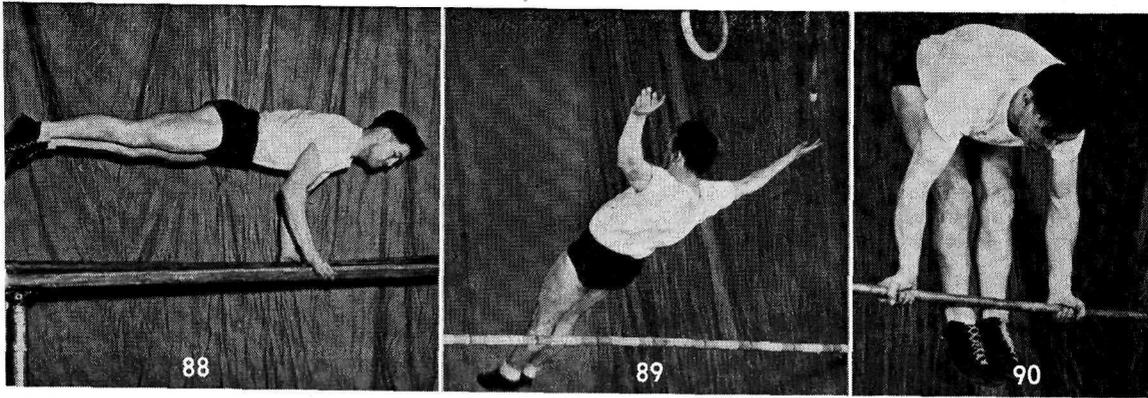
- 86—*Neck Pommel (Left Pommel)*.—The pommel to the left of the performer when he faces the side horse.
- 87—*Croup Pommel (Right Pommel, Tail Pommel)*.—The pommel to the right of the performer when he faces the side horse.

Description of Movement

- Mount*.—A movement that the performer might use in mounting any piece of apparatus from the deck. This could refer to a knee mount, etc.
- Knee Mount*.—To mount to a seat on the horizontal bar by swinging on one or both knees. (See Plate 163b)
- Needle Mount*.—To mount to a riding seat on the saddle of the horse by passing the leg around the arm and through the saddle. The other leg follows over the same end of the horse. (See Plate 373c)
- 88—*Vault Mount*.—The use of a vaulting movement for a mount.
- Straddle Mount*.—The use of a straddle vault to mount the apparatus. (See Plate 234a)
- Dismount*.—A movement that the performer might use in jumping or landing on the deck from the apparatus.
- Drop*.—A movement from a position on the apparatus to the mat. (See Plate 333b)
- 89—*Pendulum Drop or Vault*.—A drop from end of the forward swing from the rings over standard or cross bar.
- Circle*.—A movement in which parts of the body travel around a point of support. These movements are usually done around a bar, e.g., hip circles, knee circles. If a complete circle is not executed it is referred to as a turn, a turn-over or a swing-up.

Illustrations of Circle on High Bar

- Hock Circle (Hock Swing)*.—A circle on one or both knees without the use of the hands. (See Plate 203b)
- Knee Circle*.—Grasp the bar and circle the bar with one or both knees, forward (reverse grasp) or backward (ordinary grasp). (See Plate 182b)



Sole Circle (Foot Circle).—Grasp the bar and circle with the soles of feet on bar, forward (reverse grasp) or backward (ordinary grasp.) (See Plate 214a)

Heel Circle.—Grasp the bar and circle the bar with heels hooked over the bar forward (reverse grasp) or backward (ordinary grasp). (See Plate 202b)

90—*Toe (Instep) Circle*

91—*Lazy Man's Roll.*—Roll forward between parallel bars with feet apart.

92—*Double Hip Circle*

Illustrations of Circle on Side Horse

Leg Circle.—A circular movement over the point of support by one or both legs. (See Plate 383b)

Screw Circle.—A movement from a support or seat from one part of the apparatus to another by a leg circle and a turn of the body. (See Plate 382a)

Turn.—(Turn-overs, Swing-up, Turn-over forward or backward, Knee Swing-

up). A turn may be executed around the breadth axis of the performer or to the left or right around the length axis of the performer.

Vault.—This refers to any method that performer might use in springing from deck over any apparatus to deck in any single movement.

Vaults may be:

<i>Squat.</i> —(See Plate 341)	<i>Stoop (Buecke).</i> —(See Plate 400c)
<i>Straddle.</i> —(See Plate 337)	<i>Sheep (Hecht).</i> —(See Plate 402)
<i>Wolf.</i> —(See Plate 356b)	<i>Fencers.</i> —(See Plate 154)
<i>Front.</i> —(See Plate 359)	<i>Thief.</i> —(See Plate 361b)
<i>Rear.</i> —(See Plate 357a)	<i>Scissors.</i> —(See Plate 404)
<i>Flank.</i> —(See Plate 360)	<i>Back Straddle.</i> —(See Plate 347b)
<i>Screw.</i> —(See Plate 432)	

Vaults may be described: By the part of the body which passes over the apparatus. By the direction, i.e.,

Front Vault.—When front of body passes over apparatus. (See Plate 359)

Flank Vault.—When side of body passes over apparatus. (See Plate 360)

Rear Vault.—When back of body passes over apparatus. (See Plate 357a)

Right Vault.—Performer goes over apparatus to his right. (See Plate 358a)

Left Vault.—Performer goes over the apparatus to his left. (See Plate 416)

Vaults are described in respect to the portion of the horse vaulted.

Neck.—The left-hand side of the horse. (See Plate 375a)

Pommels.—The handles which the performer grasps. (See Plate 375a)

Saddle.—The center of the horse between pommels. (See Plate 375a)

Croup.—The right-hand side of the horse. (See Plate 375a)

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93—*Dive.*—A head-first leap over the apparatus landing on the hands with arms straight followed by a forward roll.

Swing.—A movement in which the body describes an arc about the point of support.

Forward or Front.—Straight ahead in the direction the performer is facing. (See Plate 185a)

Backward or Back.—In the direction toward the back of the performer. (See Plate 199b)

Drop Swing.—Starting from a front rest the insteps are brought to the bar as the body drops down. (See Plate 197a and b)

Intermediate Swing.—An extra swing.

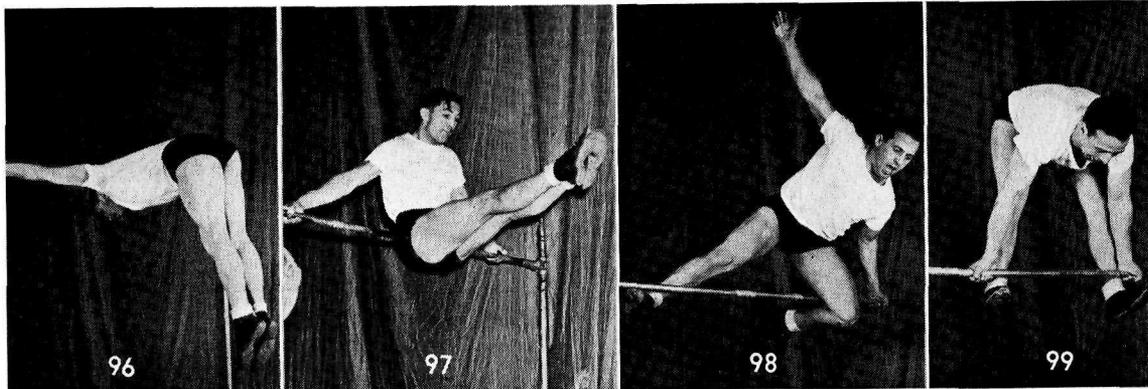
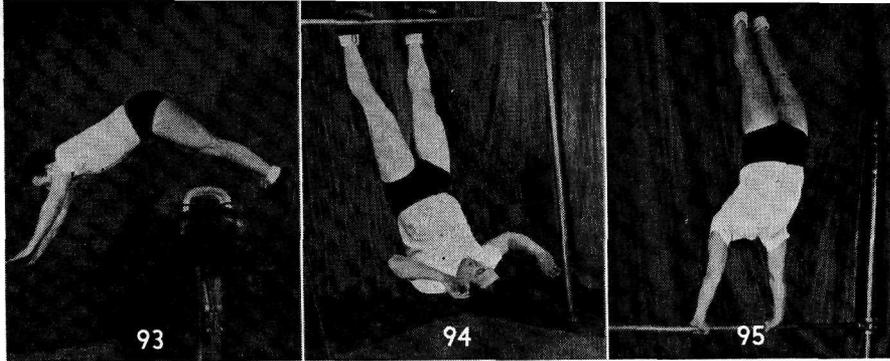
Long Underswing.—The individual swinging below the bar with extended body and straight arms. (See Plate 194b)

Short Underswing.—A drop swing from a front support and the legs are extended forward as the body swings down. (See Plate 194a)

Hock Swing.—A swing in the hock hang. (See Plate 189b)

94—*Toe Swing.*—A swing in the toe hang.

95—*Giant Swing (Circle).*—Forward or backward. (Reverse or Ordinary). The performer swings completely around the bar in a forward or backward direction with arms and body extended.



96—"L" *Giant Swing*.—Performer swings completely around bar in a forward direction with an "L" grasp.

Reverse Giant Swing.—From a sitting position on bar ordinary grasp throw feet backward over head and return to a sitting position on top of bar.

Vault Swing.—The performer vaults over one part of the apparatus and swings to another part. (See Plate 233d)

97—*Eagle Swing*.—From a seat on the high bar and a reverse grasp the performer throws the feet forward and upward. At the peak of his upward motion he dislocates at the shoulder and completes the swing.

98—*Flying Angel*.—With left hand in reverse grasp swing around the high bar with the left knee and right instep hooked around the bar.

99—*Double Angel*.—With reverse grasp swing around the bar with both insteps hooked.

Grasp (Grip).—Refers to the hold of the performer on the apparatus by one hand or both hands.

Grasps on the High Bar:

Ordinary (Front).—When the performer grasps the bar shoulder width, fingers away from the face and thumbs around the bar; this is a close ordinary grasp when the hands are close together. (See Plate 146b)

Close Ordinary (Narrow Grasp).—When the performer grasps the bar closer than shoulder width. (See Plate 146a)

Wide Ordinary.—When the grasps are farther apart than shoulder width. (See Plate 146c)

Reverse or Rear.—When the performer grasps the bar with the fingers toward the face and thumbs around the bar. (See Plate 147b)

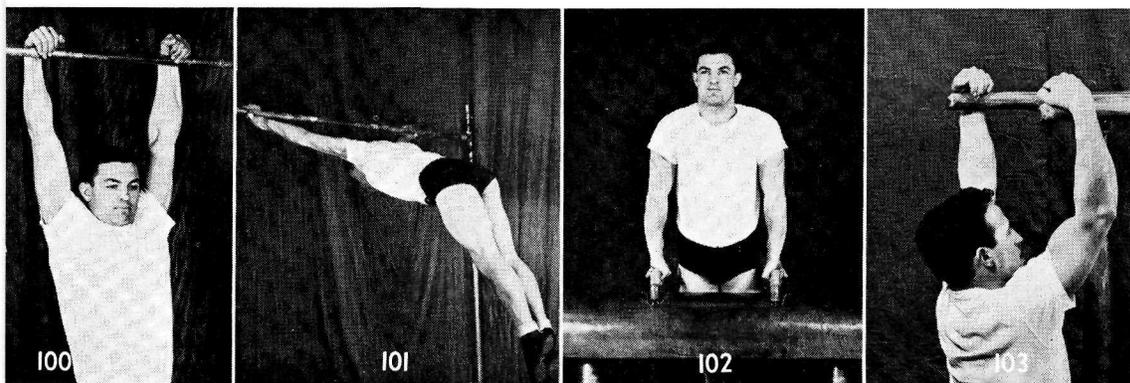
Close Reverse.—When they are close together. (See Plate 147a)

Wide Reverse.—When they are wider than shoulder width. (See Plate 147c)

Combined (Mixed) Grasp.—When one hand is in the ordinary grasp and one hand is in the reverse grasp, thumbs around the bar. (See Plate 147d)

Cross Grasp.—When the hands are crossed, fingers away from the face, thumbs around the bar. (See Plate 146d)

Hook Grasp.—Used by professionals and used also on a wooden bar. The performer does not put thumbs around the bar. All preceding grasps may be used with the hook grasp, i.e., Ordinary Hook Grasp; Close Hook Grasp; Wide Hook Grasp; Reverse Hook, either Close or Wide; Combined Hook; Cross Hook.



100—*Over Grasp (False Grip).*—Hold on the bar by the heels of the hands.

101—*“L” Grasp.*—Twist the arms inward in complete turn and grasp the bar from underneath.

Grasps on Side Horse:

Ordinary.—Palms turned toward each other. (See Plate 369a)

102—*Reverse.*—Palms turned away from each other.

Grasps on Parallel Bars:

Cross Position.—Same as side horse. (See Plate 217b)

Side Position.—Same as horizontal bar. (See Plate 270a)

103—*Over Grasp (False Grasp).*—The entire hand is above the bar at right angles to the wrist with the weight supported on the heel of the hand.

Grasps on Rings:

Over Grasp (False Grip).—Holding on to the rings by the heels of the hands and rings passing between thumb and forefinger. (See Plate 300a)

MISCELLANEOUS GYMNASTIC TERMS

Acrobatics.—A series of stunts or tricks performed on various pieces of apparatus, including trapeze, tight rope, etc.

Arch.—A backward bending of the region of the lumbar spine.

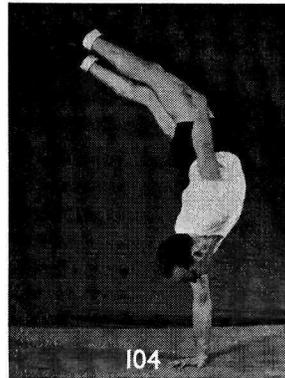
Balances.—Positions in which equilibrium is maintained.

Head Balance (Head Stand).—An inverted stand on the head. Hands in front of head on mat. (See Plate 499)

Elbow Balance.—An inverted stand on the elbows and hands. Head is on the mat. (See Plate 504)

Forearm Balance (Tiger Balance, Forearm Stand).—An inverted stand on the forearms, head clear of the mat. (See Plate 505)

Hand Balance (Hand Stand).—An inverted stand on the hands, arms straight. (See Plate 506)



104—*One-Arm Balance (One Hand Balance).*—An inverted stand on one arm.

Shoulder Balance (Shoulder Stand, Upper Arm Balance).—The weight of the body is supported on one or both shoulders with the legs extended upward. (See Plate 240b)

Belly Grinds (Hip Swingup).—This is another term applied to hip-circles performed on the horizontal bar. By using an ordinary or reverse grasp on the bars curl the body up and over the bar. Come to a momentary support and repeat. (See Plate 167c)

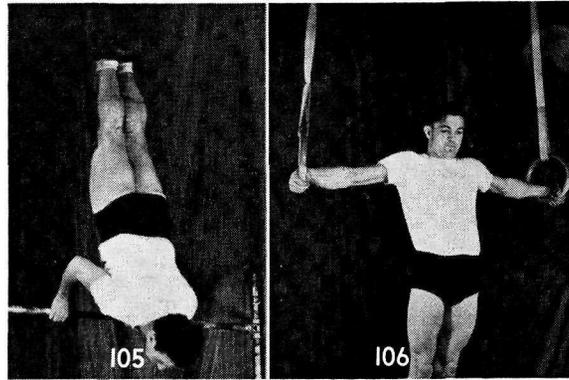
Calisthenics.—Exercises that stress posture and flexibility of the individual.

Chinning.—Hanging with legs and arms fully extended raise body until chin is above level of the apparatus. Upon lowering the body make sure arms are extended full length. Ordinary or reverse grasp may be used. (See Plate 283)

Circle.—A movement in which parts of the body travel around a point of support. Circle can be around hands, knee, heel, hock, sole, hip, etc.

Circles on the high bar:

Giant Swing (Giant Circle, Reverse or Ordinary).—Performer swings completely around the bar in a forward (See Plate 210c) or backward (See Plate 207b) direction with the arms and body extended.



105—*Half Giant Swing*.—The performer swings half-way around the bar in a backward direction coming to front rest above the bar.

Hip Circle (Forward and Backward).—A movement in which the body rotates in a forward (See Plate 187c) or backward (See Plate 186b) direction with the thighs near the bar.

Free Hip Circle.—A movement in which the body rotates in a forward or backward direction without the thighs touching the bar. (See Plate 188c)

Circles on the side horse:

Giant Hip Circle.—Supported by arms, swing legs all the way around the horse, over both pommels. (See Plate 384a and b)

Leg Circle.—A circular movement in which one or both legs travel around the hands.

Half Leg Circle (Right or Left).—One or both legs are carried from one side of the apparatus to the other in a clockwise or counter-clockwise direction.

Full Leg Circle (Right or Left).—In a clockwise or counter-clockwise direction. (See Plate 374b)

Conditioning.—This suggests relative permanency (in contrast to the temporary quality of the warm up) and is a prerequisite to optimum efficiency in the execution of an activity that demands effective physical and mental fitness.

106—*Crucifix (Cross)*.—A difficult suspended position on the rings in which the performer supports himself by holding both arms horizontal.

Curl.—Hold a barbell with a reverse grasp at the full arm's length in front of body standing erect, abdomen in and chest out. Curl or lift the weight to the chest. Inhale slowly as the weight is lifted and exhale slowly as weight is let down slowly.

A gymnast pulls in belly, hunches shoulders and curves his back.

Cut Away (Cut-off).—A straddle downward from the apparatus in which the performer cuts away one or both of his grasps.

Back Cut Away.—A cut away from a hang, with a backward body circle. May be from stationary or swinging. (See Plate 334)

Front Cut Away.—A cut away executed from a hang by flexing the hips to a straddle position over the arms and cutting away the grasp. (See Plate 330)

Cut and Catch.—A cut away followed by regrasping the apparatus again behind the thighs. (See Plate 321c)

Day's Order.—Refers to a prepared plan of procedure in teaching a class in gymnastics.

Dips.—Dips are performed between bars on end of the parallel bars. The performer jumps to a cross-rest and flexes the arms by a series of dips and presses. (See Plate 220a)

Dismount.—A movement from the apparatus to the deck. The dismount is right if it is to the right of the performer and left when it is to his left.

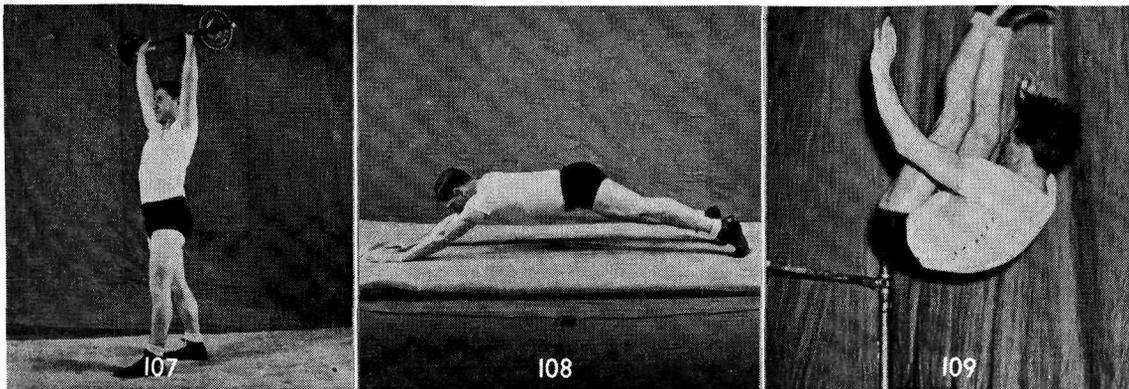
Double.—A movement involving both the arms and the legs.

Drop Swing.—Starting from a front rest the insteps are brought to the bar as body drops down. (See Plate 197a and b)

Erect.—Upright; straight.

Extend.—To stretch the whole body.

Extension.—The act of extending, enlargement, expansion.



107—*Extension Press.*—Standing erect, abdomen in and chest out, hold a barbell with an ordinary grasp, bring the bar to chest and then extend at full arm's length over the head, return in same manner.

108—*Extension Press-Up.*—Lie prone on deck, arms outstretched, palms down, legs together and straight. Head held down and shoulders kept low. Press forward with toes so that body is raised from the deck.

Feint.—A movement usually on the side horse in which the performer carries part of his body to a certain point and returns it to the starting point without pausing. It is done in order to obtain momentum for a trick. (See Plate 382a)

Finish.—The last part of a routine.

Flexion.—The process of bending.

109—*Flyaway.*—A somersault dismount from the arms at the front or back end of a swing.

Form.—The way in which the parts of the body are used in a single trick or in a series of tricks.

Giant Swing.—(See under *Circle*)

Grasp.—To grip or to hold.

Grasshopper Walk (Bent Arm Support Walk).—A term applied to the position of a performer on the parallel bars. The performer grasps the bars and flexes the arms so that the arms are in a flexed position. The performance is completed by walking forward with the hands in this position to end of the bars. (See Plate 227)

Hang.—A position in which the body weight is below the point of support.

Upper Arm Hang.—To hang from the upper arms with or without the hands. (See Plate 244a)

Inverted Hang (Hanging with Head Down).—A hang with the legs extended upward. (See Plate 287a)

Hang Lying.—With most of the weight suspended from the hands, the performer is in a partly hanging and partly lying position.

Hang Stand.—With most of the weight supported by the feet, the performer is in a partly hanging and partly standing position.

Hock Swing (Hock Circle).—A circle on both knees without the use of the hands. A swing in the hock hang. (See Plate 189b)

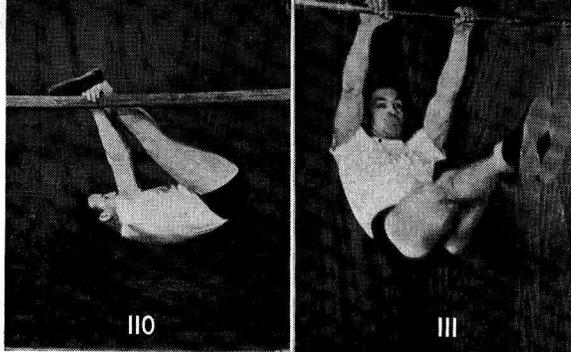
Hock Swing Dismount.—(Hock Drop; Knee Drop; Snapoff) From swinging in a knee hang position the performer dismounts on the front or back end of the swing. (See Plate 189c)

Hop.—Springing from one foot and landing on the same one.

Jump.—Springing from both feet and landing on one or both feet.

Kip.—A forward movement of the body from the hips that pitches the body from a hang, with the trunk flexed and the legs raised overhead, to a support. This can be performed at the end of the forward swing, also from a still-hang with a short forward swing. It may be done on any piece of apparatus that will allow moving from a hanging position to a support. (See Plate 177c)

**Emphasize the Arch
on Front End of Swing
in Teaching the Kip**



110—*Kip Between the Bars*.—A kip between the bars of the parallel bars ending in a cross rest.

Back Kip (Upstart).—The performer comes to a back rest position by passing the feet between the arms on front swing. He swings backward in back hang position and kicks forcefully downward as he pulls with the arms near the end of the next front swing. (See Plate 200c)

Drop Kip (Upstart).—A kip from a drop swing. (See Plate 197c)

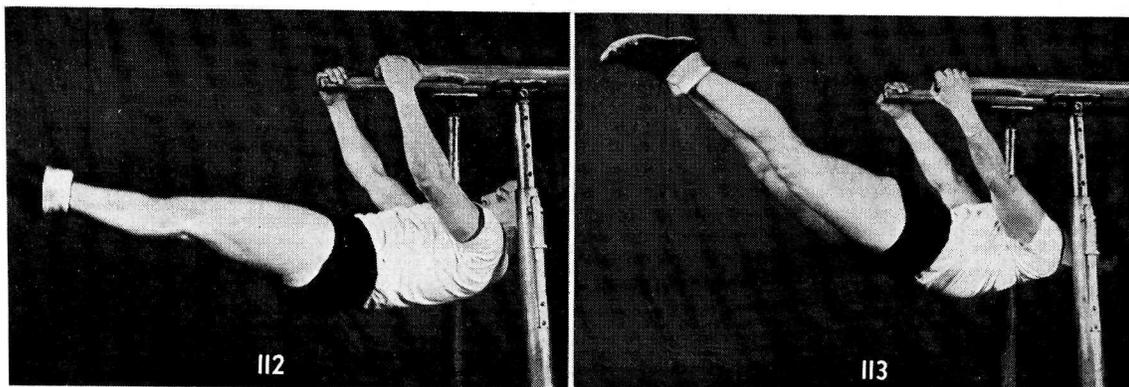
Kick Upstart (Top Kip).—From a cross support drop back to a kip position above the bar and kick back to a cross support. (See Plate 246b)

111—*Circus Kip (Quick Upstart, Chest Heave)*.—Jump to the bar with an arched back. As the feet come forward, press down hard on bar and rise to a front rest position.

Hollow Back Roll.—Forward or backward from an upper arm hang the performer executes a circle forward or backward with the body extended. (See Plate 248b)

Leap.—Springing from one foot and landing on both feet.

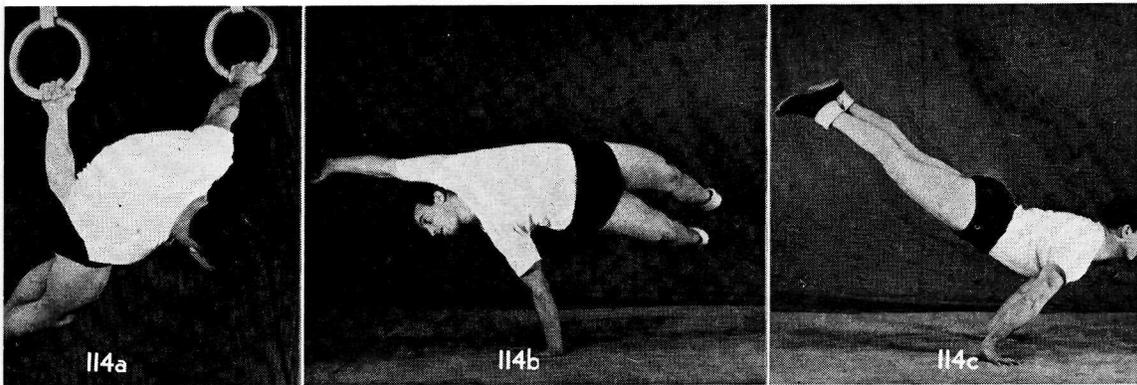
Lever.—A position in which the extended body or the body at right angles is held parallel to the deck. The lever can be done in the support or the hang position. It can be front, back, side, full and half.



112—*Front Lever*.—Front of body toward apparatus.

113—*Back Lever*.—Back of body toward apparatus.

Half Lever.—From a hang or a support position flex at waist and hold legs at right angles to trunk. (See Plate 285)



114a—*Side Lever*.—Side of body toward the apparatus.

Elbow Lever.—A front lever on the floor or on the apparatus with the trunk resting on one or both elbows. (See Plate 207a)

Lion's Crawl.—Similar to the "Grasshopper Walk" instead of short hand walks, the hands on each step forward reach out as far as possible, then from this flexed position the arms are extended. (See Plate 230a)

Long Underswing.—The individual swinging below the bar with extended body and straight arms.

Mount.—A movement from the deck to a position on the apparatus. The movement is right when it is to the right of the performer, and left when it is to his left.

Knee Mount.—To mount to a seat on the horizontal bar by swinging on one or both knees. (See Plate 164b)

Needle Mount.—To mount to a riding seat in the saddle of the horse by passing the leg around the arm and through the saddle. The other leg follows over the same end of the horse. (See Plate 369b)

Vault Mount.—The use of a vaulting movement for a mount. (See Plate 233a)

Movement.—The arc or path that the performer takes from one position to another.

Natural Gymnastics (Trench Gymnastics).—Elementary conditioning exercises given before routine gymnastics or tumbling program. Such activities are kangaroo jump, frog jump, etc.

Physical Fitness.—That condition of the human body necessary for the efficient carrying on of activities pertaining to the preservation of life and liberty; strength, endurance, agility, flexibility, balance and power are terms expressing conditions of physical fitness. Complete physical fitness embraces integrated physical, mental and emotional factors.

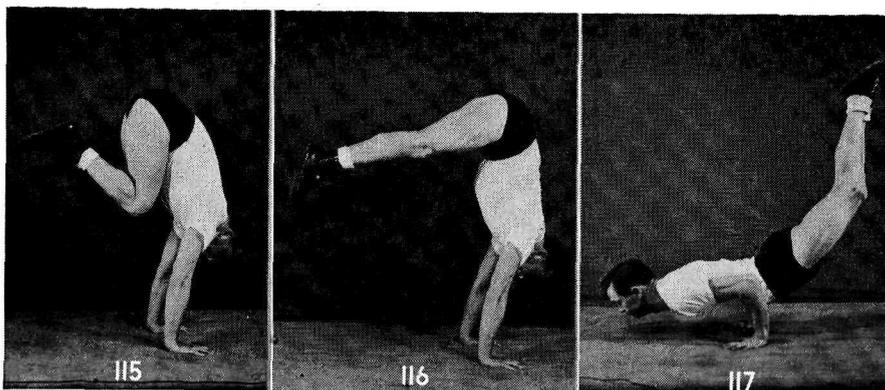
114b & c—*Planche*.—One Arm & Two Arm—Horizontal Extended Lever on one or two arms.

Point toes.—Extend the ankles and toes.

Position.—A static position of the body without movement. Stance of the performer.

Presses (Muscle Into Press Up, Push Up).—Methods of getting into a hand balance using muscles only without a throw or kick.

Straight Leg Press.—Muscle into a hand balance keeping the legs straight, bend the arms only. (See Plate 518)



115—*Straight Arm Press.*—Muscle into a hand balance keeping arms straight, bend only at waist.

116—*Straight Leg, Straight Arm Press.*—Muscle into a hand balance keeping arms and legs straight, bend only at waist.

117—*Dead Press.*—Prone position; hands at side on mat. Arch back, push body into hand balance keeping body in full arch position.

Progression.—Any graded group of stunts or tricks leading from the simple to the complex.

Prone.—Lying full length with face downward.

Pumper.—The performer bends forward, flexes both legs to a crouch position, grasps barbell and pulls bar to chest, and lets down with pumping motion.

Remedial Gymnastics (Adaptive Sports).—Specialized gymnastics or sport activities advocated by trained physical directors for overcoming disabilities. All activities take individual differences into consideration. Remedial gymnastics should be prescribed in close cooperation with the medical department.

Roll.—To turn over while in a tucked position.

Saddle.—The space between the pommels of the side horse.

Seat.—A sitting position on the apparatus in which most of the weight is supported by the thighs and buttocks.

Scissors.—Both thighs are crossed simultaneously past the median line of the body as the body executes a quarter or a half turn. (See Plate 379b)

Short Underswing.—A drop swing from a front support and the legs are extended forward as the body swings down. (See Plate 170b)

Short Underswing Dismount.—A drop swing from a front support and the performer dismounts as the legs are extended forward. (See Plate 170c)

Short Underswing for Distance.—Same as above but the performer endeavors to land as far forward as possible.

Single.—A movement working one arm or one leg.

Spotting (Guarding, Assisting).—The proper position assumed by an individual assisting a performer in order to prevent injuries.

Step.—Moving the weight from one foot to the other in a forward, backward or sideward direction.

Straddle.—A position in which the legs are separated sideward.

Supine.—Lying on the back.

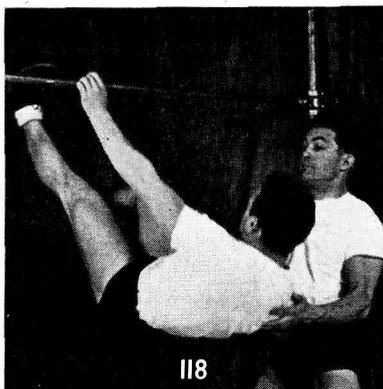
Swing.—Movement in which the body describes an arc of a circle. Swings may be forward, or front; backward, or back; hock; toe.

Forward or Front.—Straight ahead in the direction the performer is facing.

Backward or Back.—In the direction toward the back of the performer.

(Refer to pp. 64 and 65 for the various swings.)

Take Off.—The start of the leap or the jump in executing a vault.



118—*Toe Drop.*—From hanging by the toes drop without a swing.

Toe Swing.—A swing in the toe hang. (See Plate 118)

Travel.—To make progress from side to side on the horse. (See Plate 381d)

Triples Balancing.—A balancing activity in which three cadets work together in an endeavor to accomplish an act.

Turn.—To practice or perform gymnastic stunts or routines.

Turner.—Gymnast.

Upstart.—See Kip.

Uprise.—A direct rise to a support from the end of the front or back swing on the parallel bars; done also on the back swing on the high bar. (See Plate 199b)

Drop Back Uprise.—Drop back to an upper arm hang at end of backward swing and an uprise on forward swing.

Vault.—A jumping or leaping movement over an obstacle from the deck to the deck. The body is supported momentarily on one or both hands.

Squat Vault.—A vault in which the flexed knees pass between the arms. (See Plate 153)

Straddle Vault.—A vault in which the legs in straddle position pass on the outside of the arms. (See Plate 152)

Cross-Legged Straddle Vault.—Same as above with legs crossed. (See Plate 355)

- Wolf Vault*.—The inside leg is in the squat position and the outside leg is in the straddle position as the performer passes over the apparatus. (See Plate 356b)
- Thief Vault*.—The performer takes off from one foot, throws both feet over apparatus and pushes with hands after legs are over. (See Plate 361b)
- Front Vault (Right or Left)*.—The front of the body with back arched passes over the apparatus to the right or to the left. (See Plate 358a)
- Rear Vault (Right or Left)*.—The back of the body with hips low passes over the apparatus to the right or to the left. (See Plate 357)
- Flank Vault (Right or Left)*.—The side of the body with hips low passes over the apparatus to the right or to the left. (See Plate 343b)
- Fencer's Vault*.—A side vault with a one foot take off and using one hand. It resembles a high jump using one hand. (See Plate 154)
- Scissors Vault*.—A vault starting with a straddle but crossing the legs in the air. (See Plate 355)
- Back Straddle*.—The left (right) leg passes over the right (left) side of the apparatus and the other leg is swung around so that the performer faces in the opposite direction. (See Plate 347a)
- Screw Vault*.—A continuous three-quarters turn of the body. The supporting right hand is placed to the left side and the legs clear the right side of the apparatus. (See Plate 432)
- Stoop Vault*.—Flex at the waist and pass over the apparatus with legs straight. (See Plate 409)
- Sheep Vault*.—A vault with the back arched and the knees flexed. (See Plate 401)
- Swan Vault*.—A vault with the back arched, legs straight (as a Swan Dive). (See Plate 402)
- Hecht Vault*.—A vault with straight body and straight legs. (See Plate 402)
- Warm Up*.—A warm up for vigorous exercises is needed to prepare the muscles, joints and the entire organism for strenuous activity. It is body preparation for immediate activity.

TUMBLING AND BALANCING NOMENCLATURE

Tumbling (Acrobatics).—A series of controlled big muscle movements, consisting of somersaults (flips), rolls, springs, falls, dives, twists, etc., performed on mat, deck or ground.

SINGLES

Mat Deck, or Ground Tumbling Stunts

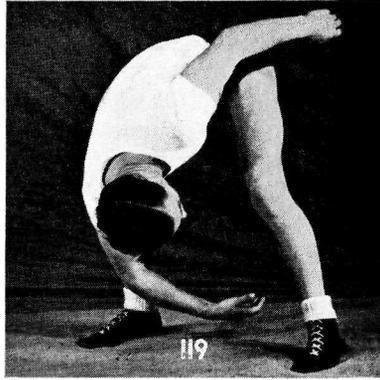
- In Mat or Ground Tumbling Stunts the body does not leave the mat.
- Chest Roll*.—Roll down on to the chest from a hand balance position. (See Plate 16b)
- Dive*.—A headfirst leap into the air from a running start and finish with a forward roll. (See Plate 683b)
- Dive to Chest*.—Leap into the air from a running start and finish on chest rolling downward with back arched. (See Plate 16a)

Rocker.—A rocking motion while on the belly with back arched. (See Plate 16c)

Rolls.—To turn the heels over the head in a tucked position, forward, backward or sideward.

Forward.—Place chin on chest, nape of neck on mat, roll over onto shoulders keeping a tucked position. (See Plate 681b)

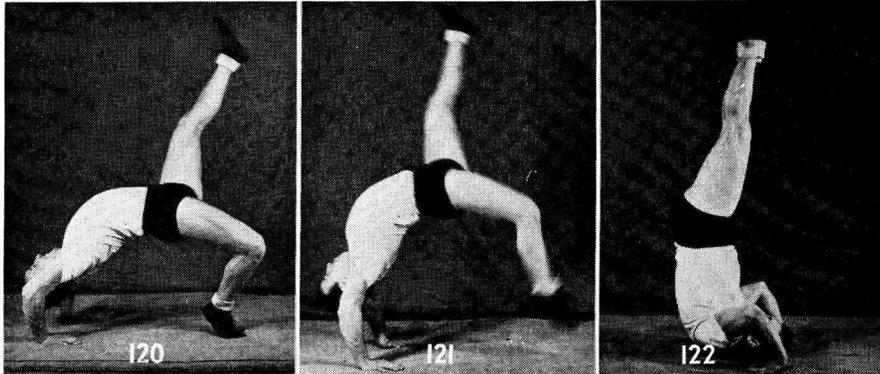
Backward.—Roll over backward, bring the heels over the head. (See Plate 685c)



119—*Sideward (Shoulder, Football).*—A sideward roll, forward or backward, over one shoulder.

Semi-Aerial Tumbling Stunts

Semi-Aerial Tumbling Stunts are done from the feet to the hands to the feet.

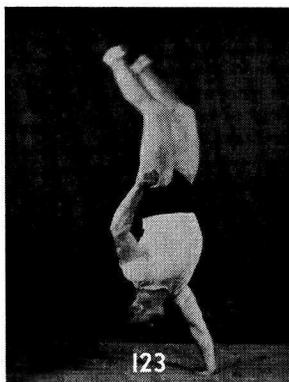


120—*Front Over (Walk Over).*—Lean forward, place hands on mat, and bring feet and body over to a stand.

121—*Back Over.*—Arch over backward until hands touch the mat. Bring the feet slowly over to a stand.

Backward Roll to Momentary Hand Balance and Snap Down.—(Extension Roll, Backward Roll Up). A backward roll to a momentary hand balance and snap down to a stand. (See Plate 687c)

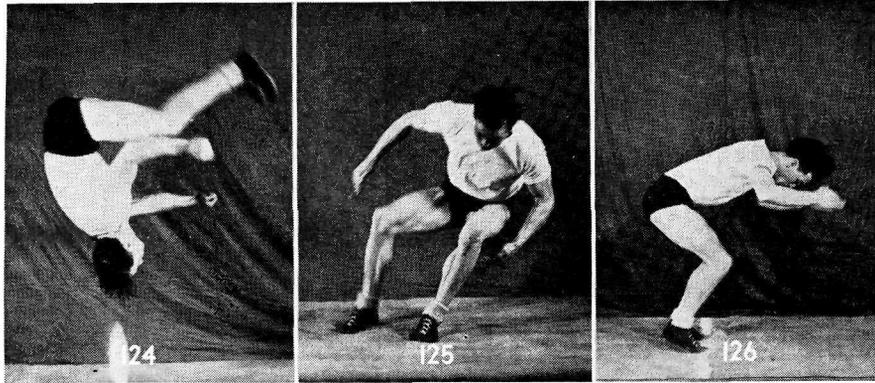
- Barrel Roll*.—Hold arch, fall forward to knees, belly, chest and hands and push to a hand balance and forward roll.
- Cartwheel*.—Sideward revolution of body from feet to hands to feet. (See Plate 691b)
- 122—*Cradle Rock*.—Roll back to the back and shoulders after a snap up, and repeat.
- Fish Flop (Egg Roll)*.—Backward roll to momentary head balance and force the shoulders forward rolling down to chest, belly and finish in a stand. (See Plate 16b)
- Round Off*.—Method of converting forward momentum into backward momentum by making a half turn inward. (See Plate 693b)
- Rock up to a Hand Balance*.—From a stand, arch the back and roll down to the knees, belly, chest and hands and push up to a hand balance. May also be done from the mat. (See Plate 16b)
- Snap Down*.—To whip the legs vigorously to a stand from a hand balance position. (See Plate 687c)
- Springs*.—Stunts that are done from feet to hands to feet.
- Front Handspring*.—A forward running spring from hands to feet. (See Plate 702b)
- Leaping (Diving, Arabian) Handspring*.—Dive or spring from both feet, land on hands and finish on feet with a handspring. (See Plate 704b)
- One Arm Handspring*.—A forward running spring from one hand, landing on feet. (See Plate 703b)
- Head Spring*.—A forward spring from hands and head to feet. (See Plate 695b)
- Neck Spring (Shoulder Spring)*.—High forward spring from back of neck to feet. (See Plate 699b)
- Snap Up (Nip Up, Kip Up from Mat)*.—Same as neck spring starting from supine position. (See Plate 699b)
- Back Handspring (Flip Flop, Flip Flap)*.—A backward spring from feet to hands to feet. (See Plate 710b)



- 123—*One Arm Back Handspring*.—Land on one arm, then feet.
- Tinsica*.—A front handspring with a cartwheel action. One hand ahead of the other. (See Plate 713b)

Aerial Tumbling Stunts

Aerial Tumbling Stunts are those that are done from the feet to the feet in a forward, backward or sideward direction.



124—*Brandy (Baroni)*.—A roundoff without the use of the hands.

Butterfly.—A cartwheel without the use of the hands. Body in horizontal position. (See Plate 712b)

Flip (Somersault).—A complete turn over from feet to feet. May be done from standing or running start.

Front Flip (Front; Front Somersault; Front Airspring; Aerial).—A complete turn over from feet to feet in a forward direction. (See Plate 705b)

Front Flip with Half Twist.—Same as above with a half twist.

125—*Side Somersault (Side; Side Flip; Side Airspring)*.—A complete turn over from feet to feet in a sideward direction.

Back Flip (Back; Back Somersault; Back Airspring).—A complete turn over from feet to feet in a backward direction.

126—*Spotter*.—Backward or forward somersault landing on approximately the same spot after the execution of the trick.

★ ★ ★

127—*Cutaway*. Front. Landing behind the take off spot.

128—*Gainer*. Backward somersault landing ahead of the take off spot after execution of the trick.

129—*Layout*.—Body extended with back arched.

Tuck.—Pulling knees close to chest. (See Plate 708c)

130—*Whipback*.—A somersault with the same action as a back handspring.

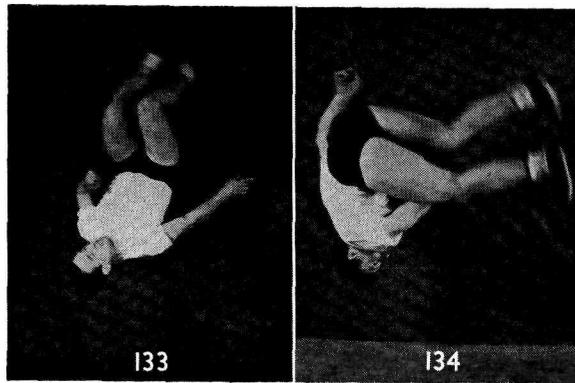
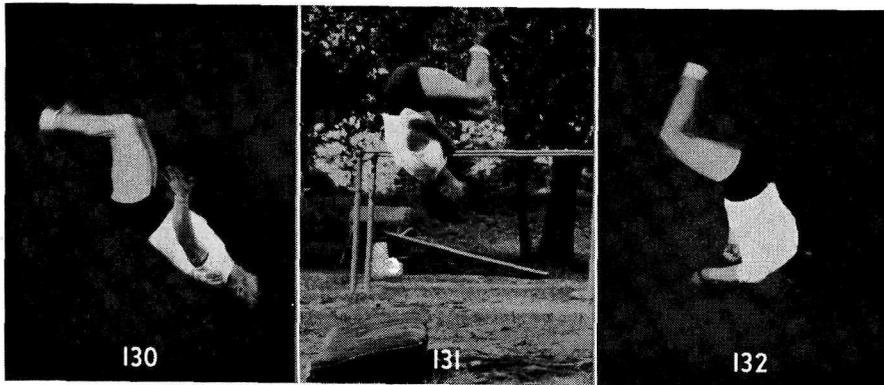
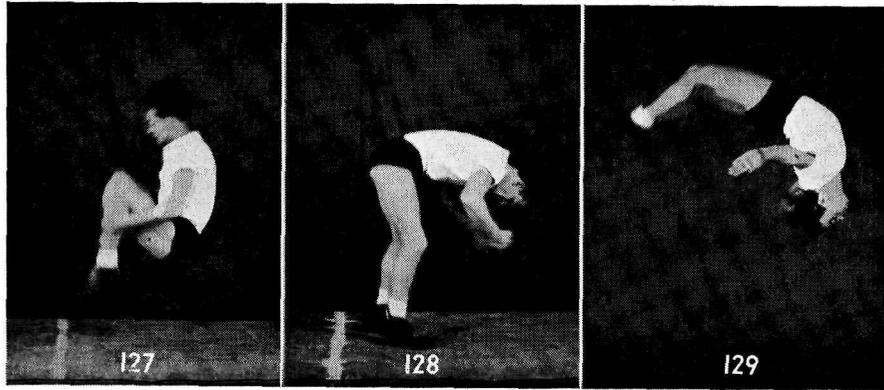
131—*Bounders*.—A series of somersaults bounding from one into the next.

Alternates: A series of back handsprings and back somersaults.

132—*Twist*.—A complete turn of the body about its long axis. While in the air, a twist may be a half, full, full and a half and a double full twist.

133—*Half Twist*.—A turn of 180°.

134—*Rudolph*.—A brandy with a full twist.



DOUBLES AND TRIPLES

Doubles (Companion; Partner; Couples; Combined) and Triples stunts are those in which two or three participate. (See pp. 312)

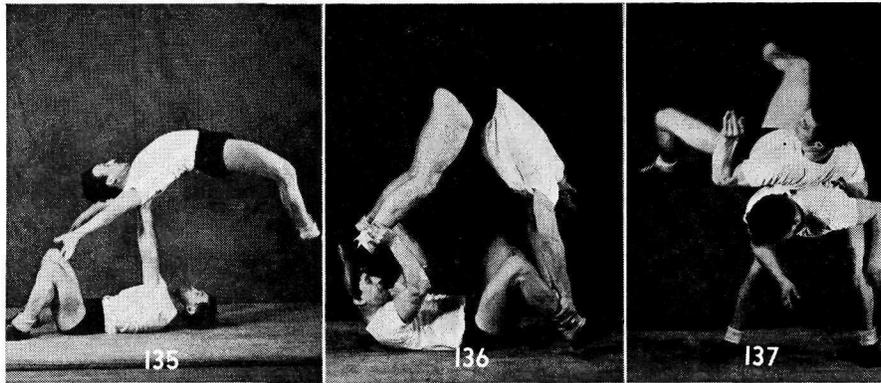
Back to Back Over.—Performers stand back to back with fingers interlocked. B* leans forward while A executes a backward roll over his back. (See Plate 718b)

Elbow Lock and Roll (Wringer).—Performers stand back to back with elbows interlocked. B leans forward while A executes a backward roll over B's back.

Elephant Walk.—B bends over and walks on hands and feet. A locks feet around B's waist and then puts shoulders between his legs. A supports himself on B's ankles. (See Plate 829)

Flyer.—The performer in a double tumbling or a trapeze act who is thrown.

Handspring from Ankles (Belly Pitch).—B lies supine; places feet against A's belly. A grasps B's ankles. (See Plate 721b)



135—*Handspring from Knees (Knee Handspring; Knee Roll).*—B lies supine. A executes a handspring by placing hands on B's knees.

136—*Monkey Roll (Double Roll; Eskimo Roll).*—A roll executed forward or backward in which A grasps B's ankles.

Neck Lift.—B bends over and puts his head between A's legs. B then lifts A into a backward somersault.

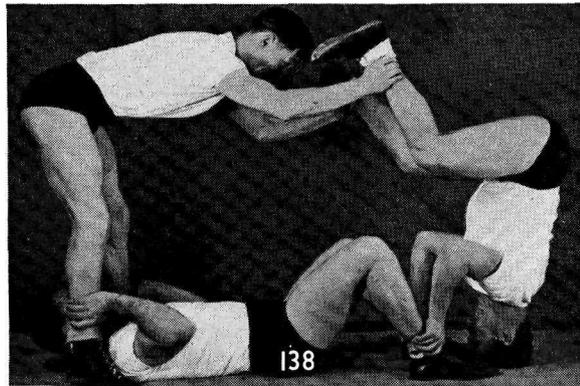
Pitch.—To toss or throw a performer in the execution of a doubles stunt. (See Plate 722b)

137—*Roll over Back.*—B bends over and A executes a forward (or sideward) roll over his back.

Spotter or Assistant.—A helper who guards the performer against injury.

Thrower.—The performer in a doubles tumbling or a trapeze act who throws his partner.

* B indicates Bottom Man; A, Top Man.



138—*Triple Roll*.—A forward roll or backward roll executed by three performers when they hold each other's ankles.

MISCELLANEOUS TUMBLING TERMS

Acrobatics.—This term is often used interchangeably with tumbling.

Arch.—A backward curve or bending of the lumbar spine needed in numerous gymnastic and tumbling stunts.

Balance.—To maintain equilibrium.

Beat.—Refers to the timing of the body swing on the rings or the trampoline.

In tumbling it refers to the timing of the arm and leg action.

Bed.—Surface of the trampoline performed upon.

Bed Set.—Tautness of the canvas or bed of the trampoline.

Bend.—To turn the body forward or backward from the vertical position.

Bounce.—The bounce controls the landing and take off on the trampoline.

Straight.—Feet to feet bouncing.

Free.—A straight bounce used for preparation for a trick on the trampoline.

Break (Breaking).—Halting or "killing" the rebound. (See Plate 747a)

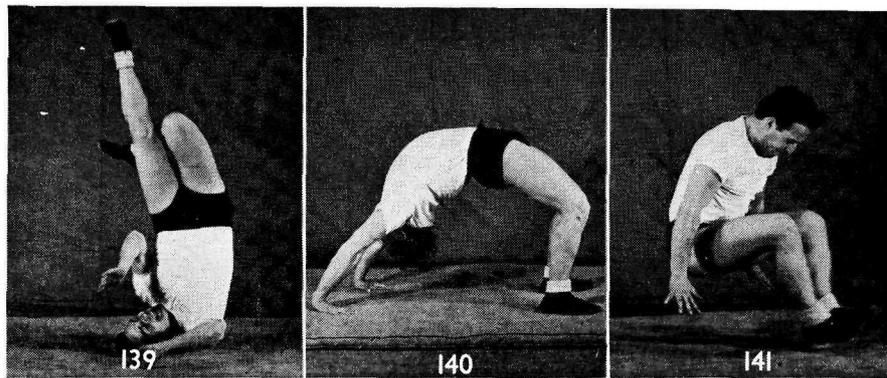
Break Fall (Safe Fall).—The ability to check a fall without injury.

Cast.—A term describing the uneven tension of the springs of the trampoline.

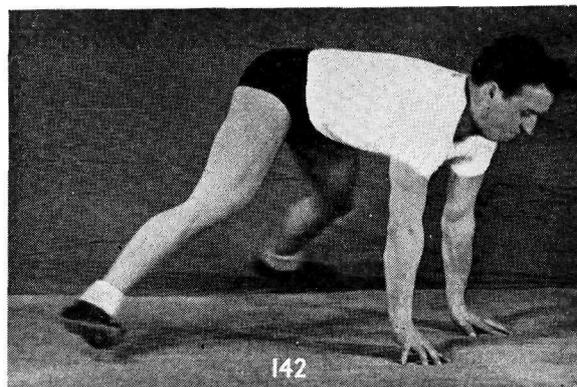
Such faulty alignment causes the performer to be thrown crooked.

Check (Checking).—Halting or slowing revolution.

Come Out.—Extending and checking preparatory to landing. (See Plate 768c)



- 139—*Corkscrew*.—A complete turn of the body about its long axis with the head on the mat. It might also be described as a backward roll with a half twist.
- 140—*Crab*.—An arched back position with hands and feet on mat with buttocks raised, belly thrust upward, and head backward.
Fall Backward.—To fall backward to a supine position on mat checking the fall with the hands. (See Plate 17b)
Fall Forward (Fall Out).—To fall forward to a prone position on mat or deck checking the fall with the hands. (See Plate 21)
- 141—*Fall Forward, Squat Through (Jump Between Arms; Sit Through)*.—Fall forward to a prone position and followed by a jump squat between the arms to a sitting or supine position on the mat.



- 142—*Fall Forward, Straddle*.—Same as above, except straddle the legs around arms instead of bringing them between arms.
High Lift.—A finish in which the body is raised high in the air by means of a push up or a snap down. (See Plate 687c)
Kick Out.—Extending from tuck to pike position. (See Plate 762b)
Layout.—Body extended with back arched.
Lead Up (Build Up) Tricks.—Tricks that are relatively simple but which contribute to the learning of more difficult stunts.
Novelties.—Stunts which cannot be listed logically under tumbling.
Pike.—A position with legs straight and hips flexed. (See Plate 761a)
Pitch.—To toss or throw a performer in the execution of a doubles stunt.

Progression.—Any graded group of stunts or tricks leading from the simple to the complex.

Routine (Combination).—A grouping of more than one stunt into a continuous series.

Safety Belt (Hand Mechanic; Lunger).—A belt with side swivels and rope handles used for teaching more advanced tricks. (See Plate 6)

Spot (Guard; Assist).—To assume a position of readiness to safeguard against injury.—(See Plate 11)

Spotter.—One who safeguards or assists a performer.

Spring.—Tumbling stunts that are done from feet to hands to feet.

Take Off.—The start of the leap or the jump in executing a stunt.

Tramp.—Abbreviation for trampoline.

Triples.—Any stunt in which three tumblers participate.

Tuck.—Pulling knees close to chest.

Turnover.—Any part of a somersault from any take-off position on trampoline.

Twist.—A complete turn of the body about its long axis while in the air.

Whip (Snap; Kick).—A vigorous powerful drive with a part of the body, usually the legs, to get sufficient force to execute the stunt.

BALANCING

Singles

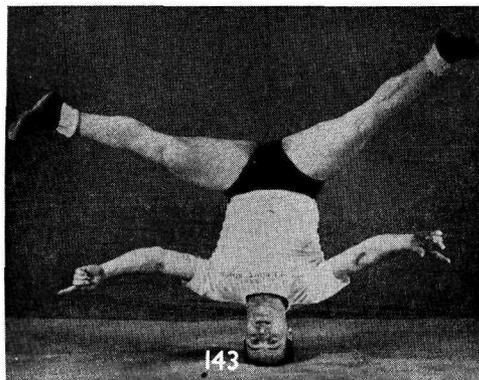
Balancing refers to stunts or activities participated in by one or more individuals and involving the maintenance of body equilibrium.

Singles Balancing is a balancing activity for a single individual.

Squat Head Balance (Frog Head Balance).—From a squat stand position place head on mat and balance on head and hands. (See Plate 497)

Squat Balance (Frog Hand Balance).—From a squat position balance on the hands, pushing the knees against arms for entire support. (See Plate 498)

Head Balance (Headstand).—Spread fingers and thumbs wide. Form an equilateral triangle with the head and the hands. The weight is back on the hands. (See Plate 499)



143—*Free Head Balance.*—A head balance without the use of the hands for support. The hands may be folded or extended sideward or extended downward.

Elbow Balance (Elbow Stand).—Clasp the hands together and make a cup with the hands. Form an equilateral triangle with the hands and the elbows. Place the head into the cupped hands and balance on the forearms and head. (See Plate 504)

Forearm Balance (Tiger Balance; Forearm Stand).—Balance on forearms with feet extended, back arched and head back. The performer should endeavor to make a right angle between the upper arm and lower arm in order to keep the chest high. (See Plate 505)

Hand Balance.—To balance on the arms only with the hands on the deck. The performer keeps the shoulders over the hands, head back, back arched, and heels in line with the back of the head (See Plate 506)

One Arm Hand Balance.—Balance on one arm with one hand on deck and the other free. The free hand may be on the hip or extended side-ward or extended downward. (See Plate 104)

Doubles (Partner; Couples; Companion or Combined)

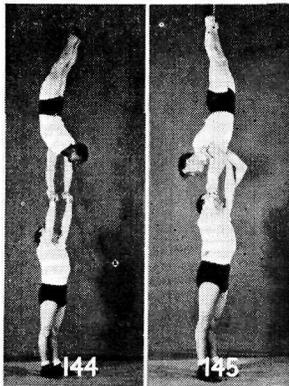
Doubles Balancing is an activity of balancing for two.

Topmounter "A" (Top Man): The one of two partners who performs on top of the other or understander. Usually lighter in weight than bottom man.

Understander "B" (Bottom Man; Under Man): The one of the two partners who supports the other or topmounter. Usually heavier in weight than top man.

Belly Balance.—B lies on back with feet upraised. A balances on his belly on B's feet. (See Plate 521b)

Hand, Knee, Shoulder Balance (Shoulder Balance).—A places his shoulders on B's hands and his hands on B's knees. He then kicks or presses into a balanced position. (See Plate 519)



144—*Hand to Hand.*—A hand balance by A on up-raised hands of B. B may be in a supine, sitting, kneeling or standing position.

Foot to Foot Balance.—B lies supine with feet raised and knees braced. A stands on B's feet. A may step from B's buttocks to the feet or he may jump to the feet direct. (See Plate 531)

Mount.—To take a position on top of another performer.

Shoulder Mount (Shoulder Stand).—A mount in which A stands on B's shoulders. (See Plate 557)

Shoulder to Shoulder.—A balance by which A and B grasp each other's upper arms. B then throws A into an inverted balance position.

Low Shoulder to Shoulder.—B lies on deck and supports A in a shoulder to shoulder balance. (See Plate 520)

145—*High Shoulder to Shoulder.*—B stands and supports A in a shoulder to shoulder balance.

Swan.—B supports A with his hands or his feet from a supine or standing position. A forms an arch in his back with head back and arms extended sideward. (See Plate 521b)

Triples (See pages 194-197)

Triples Balancing stunts are those in which three individuals participate.

Pyramids (See pages 198-211)

Pyramids are groups of performers arranged into symmetrical figures. Pyramids may be either

- (a) Ground and Deck
- (b) On the Apparatus

COMPETITIVE TERMINOLOGY

Approach.—The manner in which the gymnast walks toward the apparatus to start his routine.

Continuity.—Continuity is unbroken smoothness of the routine. One trick leads directly into another without a break in the rhythm.

Difficulty.—A stunt is difficult if it is relatively complicated and dangerous.

Flash Cards.—Sixteen cards about 8" x 10" in size upon which are printed numbers from 1/2 to 15, inclusive. Used by judges to indicate individual performance score. A small cabinet may be made for the flash cards. The cards are made of wood with handles attached. The handles then fit into slots on the cabinet.

Form.—Form involves correct body control during the execution of tricks.

Judge.—An official at a meet who evaluates the performance routine of a competitor.

Junior Class.—A competitor who has not won a Senior A.A.U. title.

Novice Class.—A competitor who is a beginner or novice at the sport.

Optional.—A routine that is arranged by the performer himself.

Routine (Figure; Combination, or Exercise).—A group or series of stunts or tricks done without a rest. A gymnastic routine is judged on the basis of difficulty, form and continuity.

Senior Class.—A competitor who performs advanced and difficult routines.

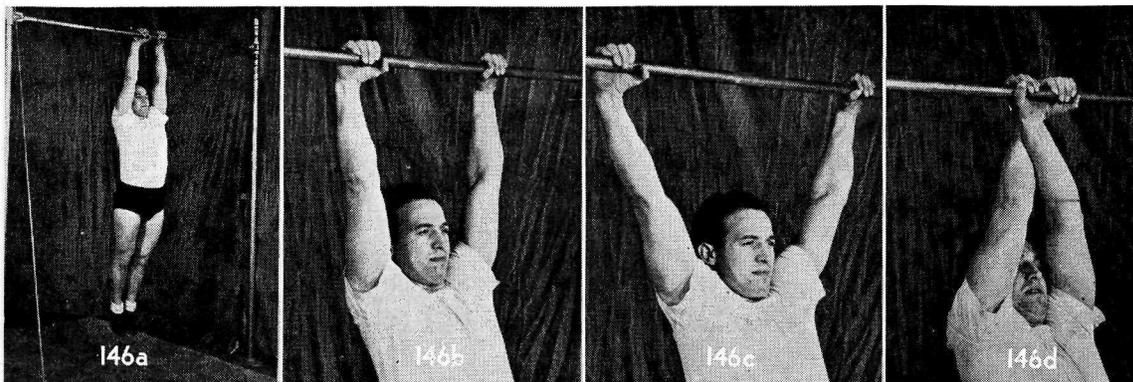
Set (Required Routine; Required Set; Compulsory).—A routine that is arranged in advance and which is required of all performers.

CHAPTER VIII

Gymnastic Apparatus Activities

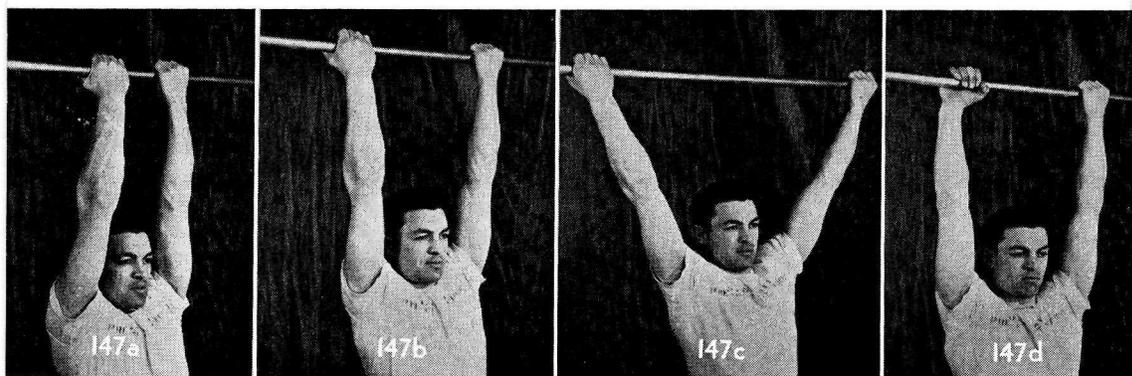
Fundamentals, Variations, Class Procedure and Safety Hints*

HORIZONTAL BAR GRASPS (IN SIDE HANG)



146—*Ordinary or Front Grasp.*—(a) (Close); (b) (Ordinary); (c) (Wide); (d) (Cross)

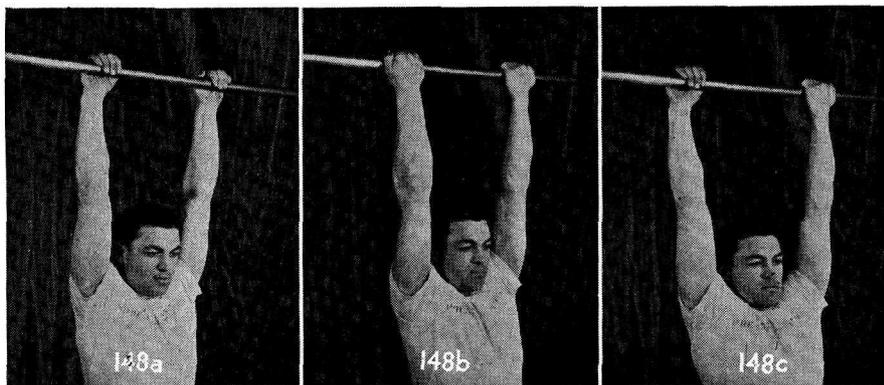
SAFETY HINT.—Thumbs under the bar! (On opposite side of fingers)



147—*Reverse or Rear Grasp.*—(a) (Close); (b) (Ordinary); (c) (Wide); (d) (Combined or Mixed)

SAFETY HINT.—Thumbs under the bar!

* For additional material on apparatus stunts refer to articles by Hartley Price in the *Journal of Health and Physical Education* and the *Athletic Journal*.



148—*Hook Grasp*.—(a) Ordinary; (b) (Reverse); (c) (Combined)

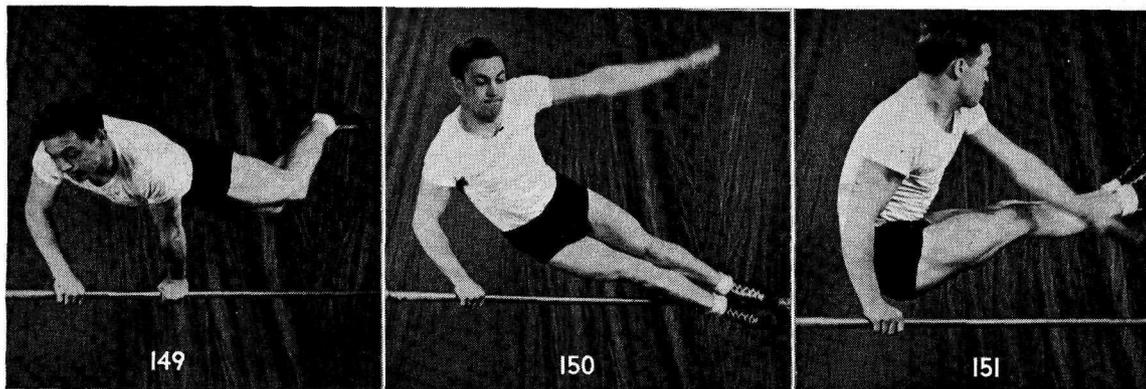
SAFETY HINT.—This grasp should only be used on a wooden bar.

Hook Grasp With Combinations.—Use hook grasp on wooden bar.

SAFETY HINT.—What is the correct grasp to use? For the majority of stunts the ordinary grasp at shoulder width is used. Always follow the thumbs! In the *mixed cross grasp or grip* the changing hand regrasps bar in a reverse or under-grasp position. This grasp is used in rear vault regrasp stunts. The *reverse under grip or eagle grip* is an important grip in dislocate swinging tricks.

LOW BAR

General Hints on Low Bar Vaulting.—Hold head up—Take off from both feet—Push with arms—Land on balls of feet—Bend the knees upon alighting!

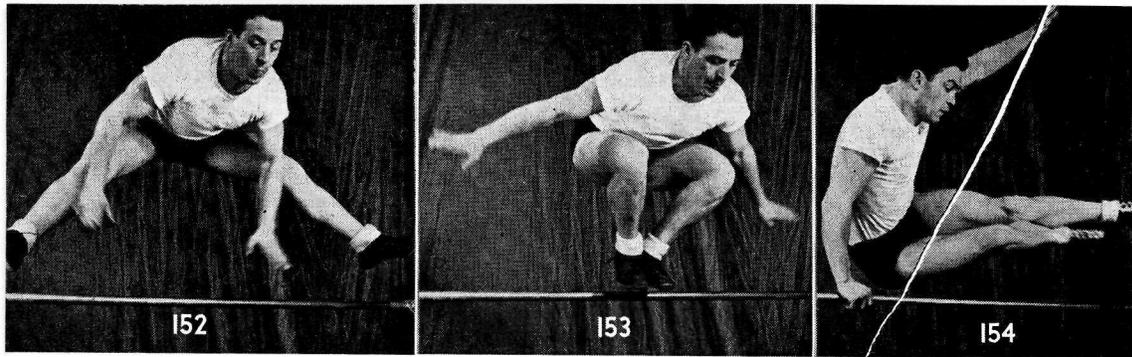


149—*Front Vault.*—Hold head up—Arch the back—Try to get the body in a 45° angle—Land on the balls of the feet—Bend the knees upon alighting!

150—*Flank Vault.*—Shift balance well over supporting arm—Keep supporting arm straight—Body parallel to bar—Legs and trunk in a straight line!

Variation Flank Vault.—Hold on to bar with both hands.

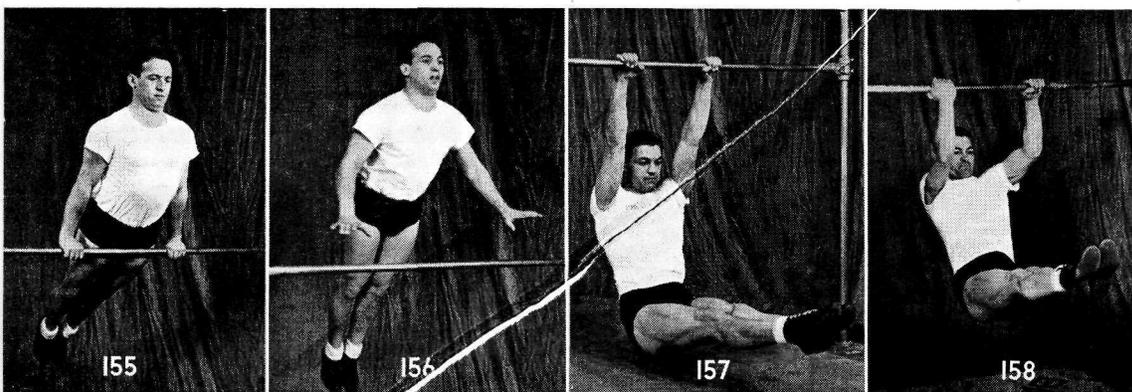
151—*Rear Vault.*—Both feet over one side—Keep hips low—Regrasp with inside hand! Turn inward to regrasp.



- 152—*Straddle Vault*.—Keep head up—Push hard with hands before upward momentum stops—Straddle legs wide!
- 153—*Squat Vault*.—Head up—Push hard with hands—Pull knees toward chest!
- 154—*Fencer's Vault*.—Take off from one foot—Kick free foot hard—Lift hard with free hand!

The preceding vaults may now be performed on a bar at chest height. Later the bar may be raised to chin height.

SAFETY HINTS.—Use a spotter on each side of bar—Do not hold onto the bar—Do not stop in the middle of a vault!



- 155—*Front Rest Support*—(*Jump to a Front Rest*).—Stress correct position: Head back—Chin in—Back slightly arched—Arms straight—Shoulders slightly ahead of hands—Legs straight—Toes pointed!

- 156—(*Push off Backward to Mat*).—Swing legs slightly forward before pushing off with the hands—Land on the balls of feet!

Use the same Vaults and Dismounts with turns.

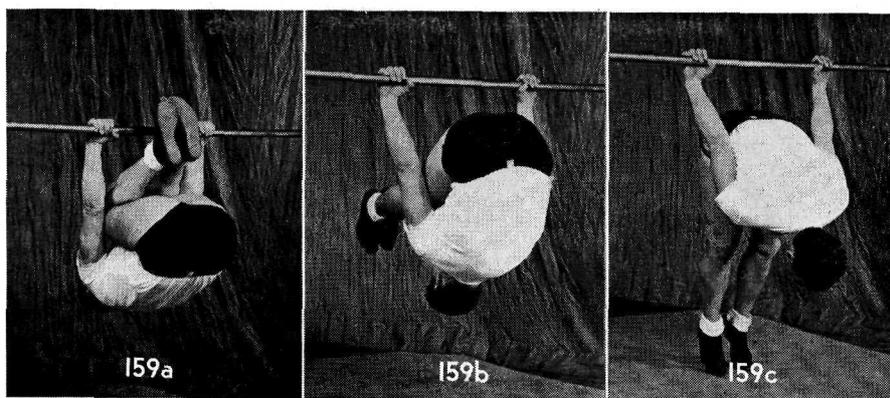
- 157—*Half-Lever Position (Hang)*.—Work with one leg until strong enough to hold both legs in position—Keep arms straight—Use abdominal muscles—Hips back!

Variations.—Do at first with knees at chest—Next, one leg out—Next with both legs out—Combine with chins.

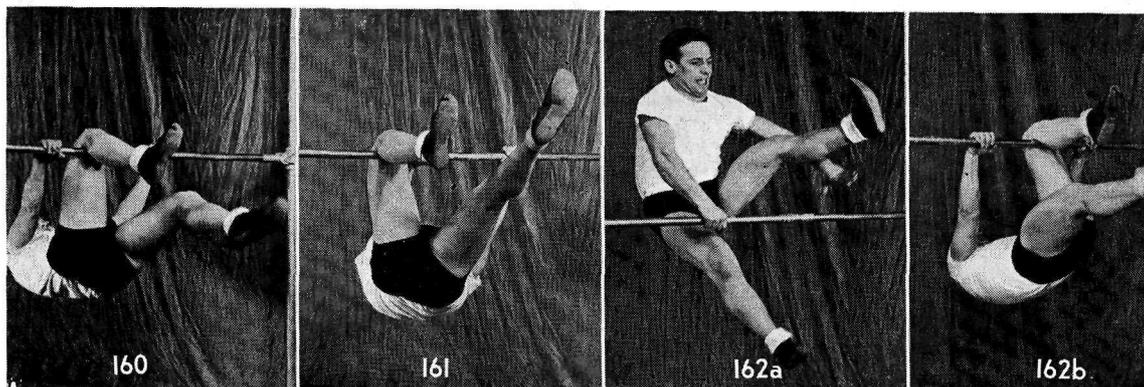
- 158—*Combine Front Rest and Half-Lever with Forward Turnover*.—Try to check legs before touching deck!

Variations.—Knees to chest—One leg out—Both legs in half-lever—Both legs in half-lever and chin.

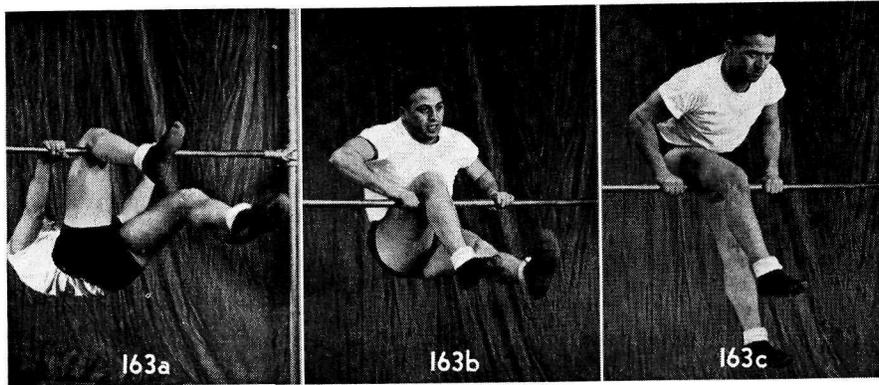
SAFETY HINT.—Be sure to slip grasp to other side of bar! For forward turnover use combined grasp at first!



- 159a, b, and c—*Skin the Cat*.—Do first with bent knees to shorten leverage—Throw the head back—Stretch downward with the feet to obtain best results!
Variations.—Raise insteps to bar—Pull legs through arms to back hang stand—Pull legs through without touching mat—Pull legs back to stand—Pull legs back to half-lever—Pull legs back to half-lever and chin—Same as above with arms and legs straight.



- 160—*Single Knee Hang, Ordinary Grasp (Leg Inside of Hands)*.—Keep free leg straight—Keep other leg flexed!
 161—(*Leg Outside of Hands*).—Keep free leg straight—Keep other leg flexed!
Single Knee Hang, Reverse Grasp. (Leg Inside) (Leg Outside) (Alternate Legs)
 162—*Jump to Single Knee Hang from a Standing Position*.—(a) Take off from one foot—Hold on bar with one hand on take off—Lift with free hand to help get knee over bar; (b) Hold on tightly when the bar is grasped with free hand!
 SAFETY HINT.—Spot behind bar in case performer does not grasp bar properly!



- Single Knee Swing Up From Single Knee Hang, Ordinary Grasp.*
 163—(*Leg Inside of Hands*).—(a) Swing the free, straight leg in as wide an arc as possible—Bend the arms slightly in getting a swing; (b) Pull from the shoulders; (c) Throw head forward!

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- 164a, b and c—*Leg Outside of Hands*.—(Same as for Leg Inside)
Single Knee Swing Up From Single Knee Hang, Reverse Grasp.—(*Leg Inside*)—(Same cues as with Ordinary Grasp)
Single Knee Swing Up From Single Knee Hang.—(*Leg Outside*)—Alternate Legs

SAFETY HINT.—If the swing with the leg is so forceful the performer over-balances forward, he should reverse one or both grasps!

Knee Swing Up From Single Knee Hang and Lift Back Leg to Side Seat.

- 165—(a) Knee Swing Up; (b) To counter-balance, shift weight away from back leg; (c) Assume side seat position!

- 166—*Dismount Forward*.—Push from hands for distance!

Variation.—Dismount Forward with Turns.

SAFETY HINT.—Steady the performer when he tries this stunt for the first time.

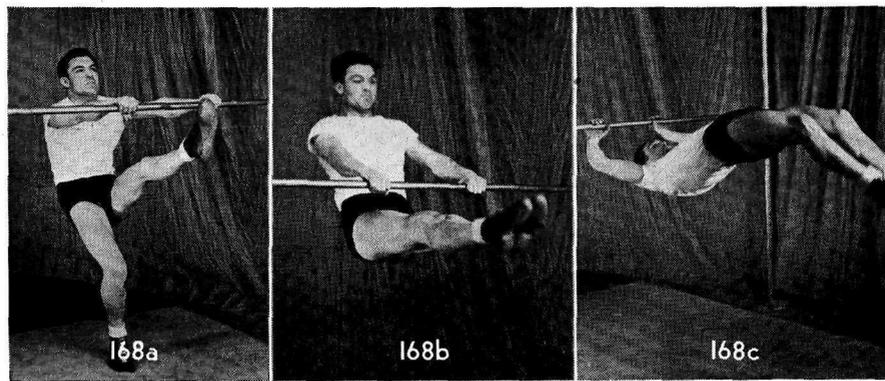
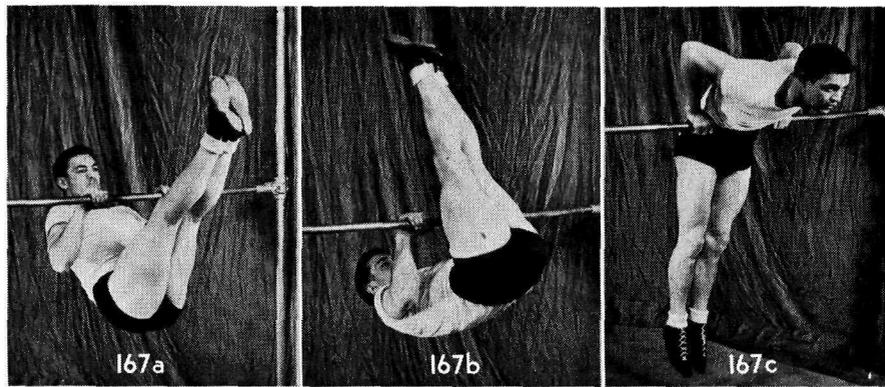
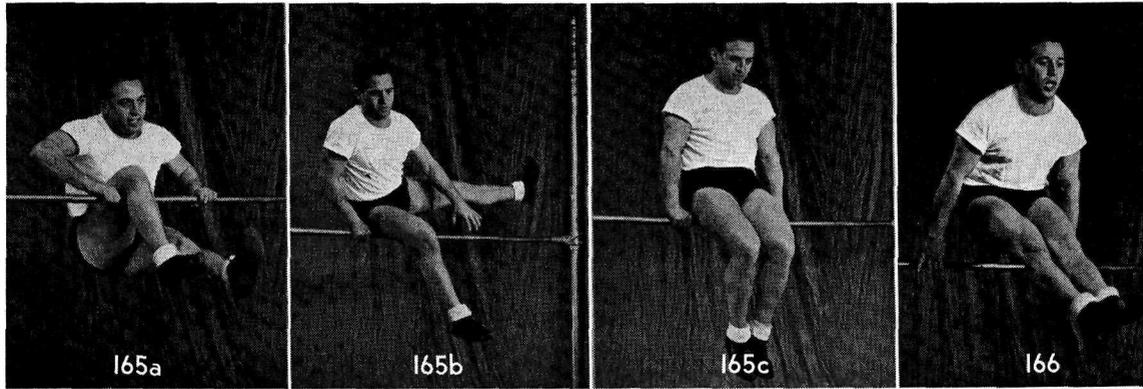
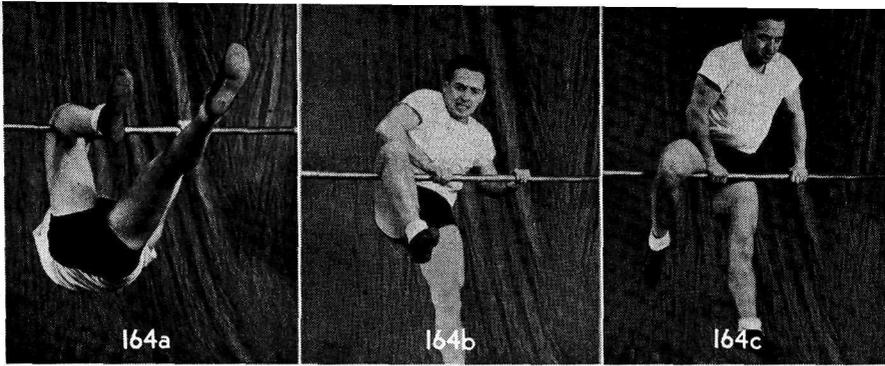
All the above tricks may be done with a reverse grasp.

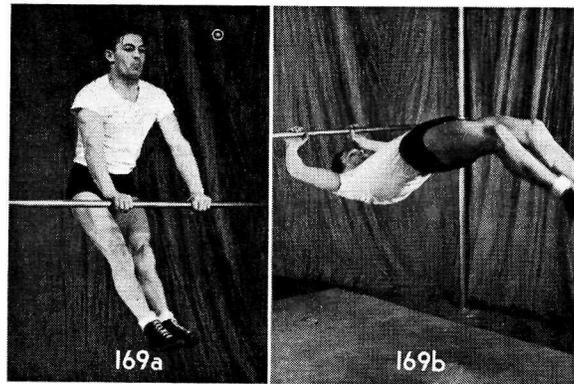
- 167—*Hip Swing Up (Belly Grind)*.—(a) Chin yourself first—Bring belly to bar; (b) As you throw the feet over the bar throw the head back; (c) Arch the back slightly as the arms are straightened!

Variations.—Push off Backwards—Push off Backward with Turns—Forward Turn Over.

There can be various combinations of all of the above stunts.

- 168—*Short Underswing Dismount, One Leg Up*.—(a) Arms straight—Kick one leg up first; (b) Lean back with head and shoulders—Bring up other leg immediately; (c) Direct feet upward at 60° angle—Be sure to release bar!





- 169—*Both Legs Up*.—(a) Same as above except both legs up at the same time—Spring upward and backward to bring insteps to bar; (b) Be sure to release bar!

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- 170—*Front Rest*.—(a) Arched body; (b) Bring legs up to bar as body drops backward; (c) Shoot out and let go of bar!

From Hip Circle.—(Cues the same as Front Rest)

Apply Turns from Bar.—Turn head and arm in direction of turn!

- 171—*Raise Bar and Single Knee Swing Up, Drop Back to Underswing Dismount*.—(a) Withdraw leg when passing over top of bar—Transfer insteps to bar; (b) Drop hips and do underswing dismount!

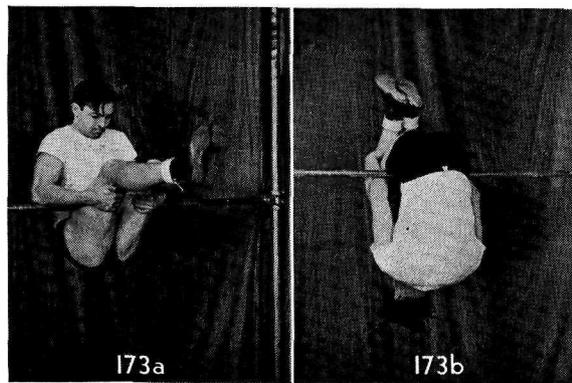
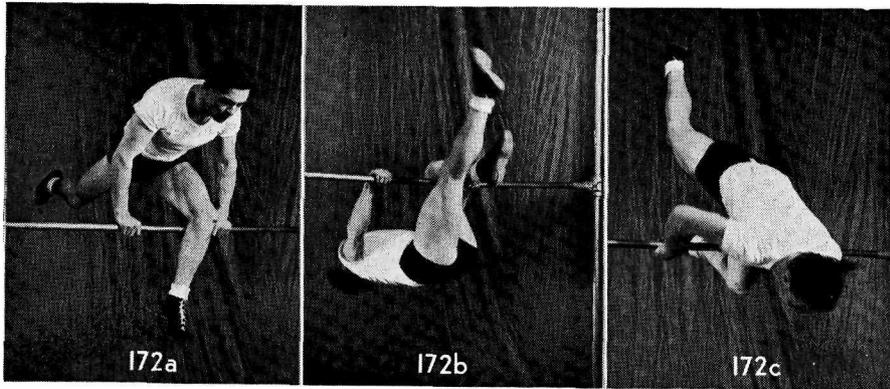
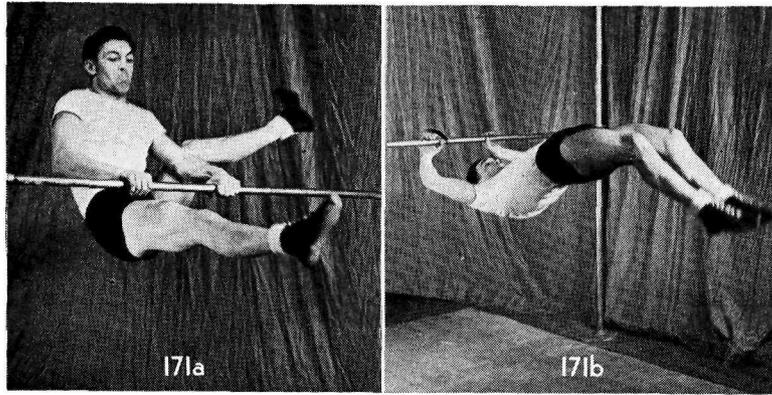
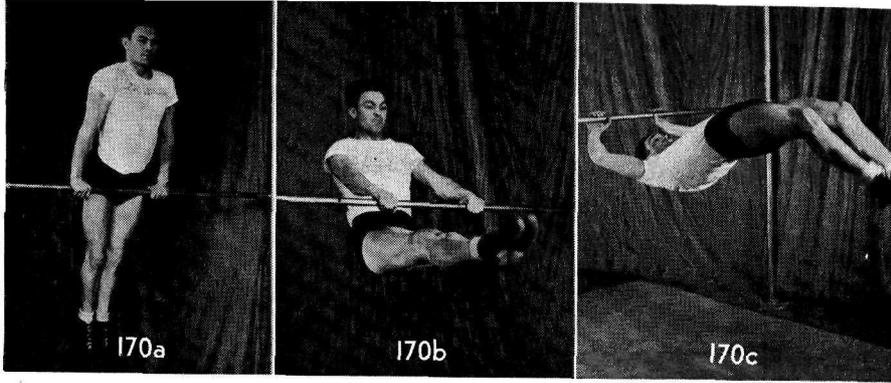
SAFETY HINTS.—Arms straight—Pull from shoulders—Be sure to release grasp—Do not change mind and hold on to bar—Spotters in front of and behind bar!

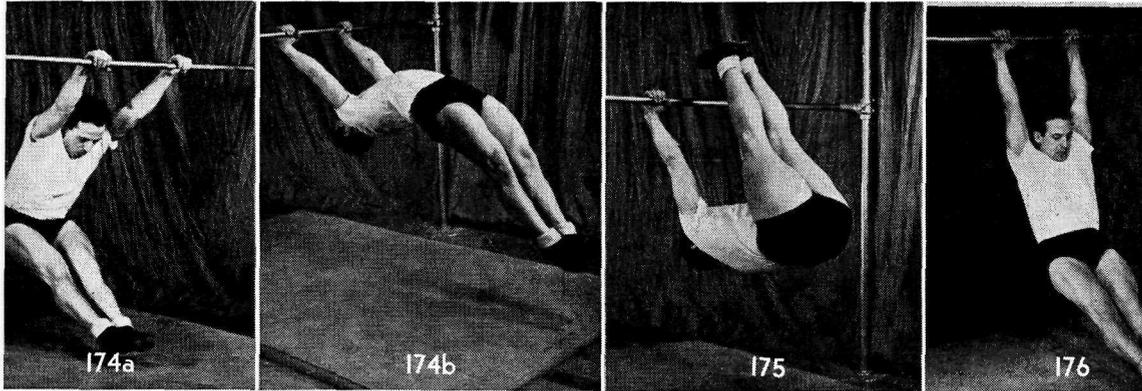
- 172—*Single Knee Circle Backwards*.—(a) For all circles lengthen on top shorten underneath bar—Thigh should be six inches above bar at start of circles; (b) Keep free leg straight; (c) Shift hips over the bar as circle is completed!

- 173—*Forearm Support Circle*.—(a) Jump to support and grasp thighs; (b) Get momentum for circle with head and feet—Keep pulling for continued circle!

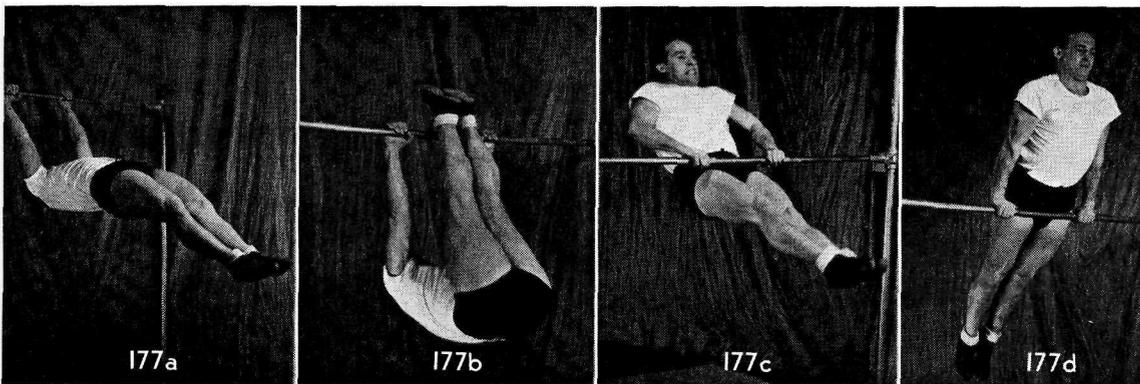
Variations.—Single Knee Swing Up (Right and Left)—Single Knee Swing Up (Reverse Grasp)

Elementary Routine.—Single Knee (Ordinary Grasp) Swing Up, Forward Turnover, Change Grasp, Single Knee Circle Backward, Short Underswing Dismount with Turns.





- 174—*Preparation for Kip (Upstart).*—*Positions:* Hold bar, chest high, with ordinary grasp, arms straight. Jump up into air with feet, extend the legs under bar just above mat to a full body extended position and return. In 174b start from position as in 174a. Jump, bringing insteps to bar and hold them at this position while body swings back and forth. Stress keeping the arms straight—Stress arch at the front of swing—Head back at end of swing; in (a) Stress skimming the top of the mat!
- 175—Combine the two above positions in 174a and 174b—Raise the bar gradually!
- 176—Combine the movements in 174a with various single and double knee mounts!

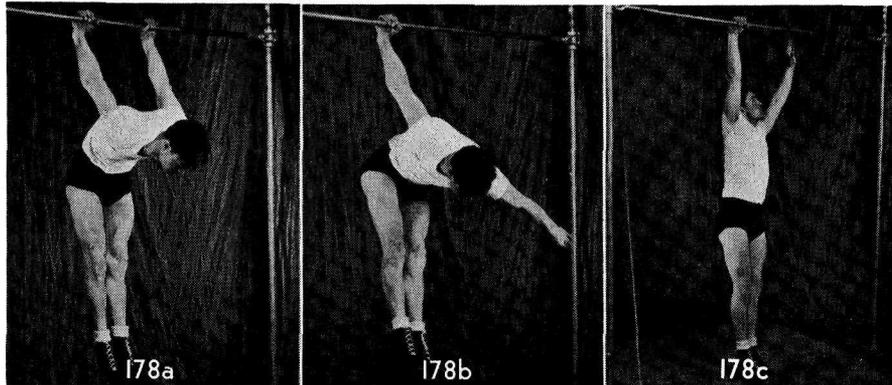


- 177—*Kip, Raise Bar Gradually.*—(a) Stress arch at front of swing—Wait for the hips to start the return swing before bringing insteps to bar; (b) Bring insteps to bar—Shoot legs up, out and down—Press down and *in* with shoulder muscles; (c) Get a little wrist motion when going above bar—Do not push away from bar; (d) Force shoulders well forward!
- Try all tricks on the bar at an intermediate height. Also, try all tricks on the High Bar.

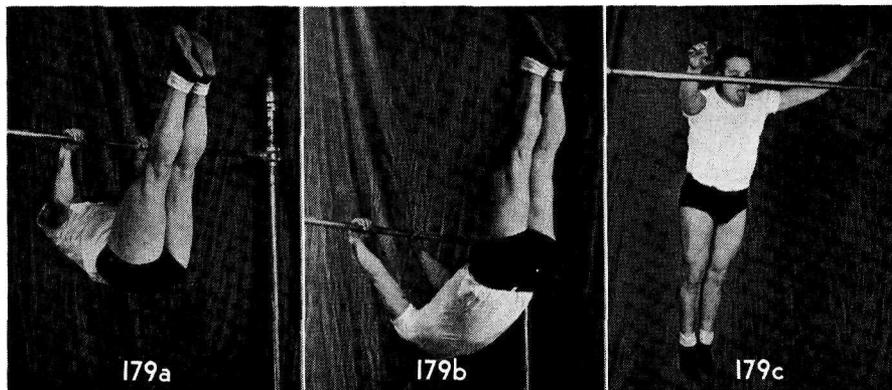
HIGH BAR*

Chins.—Pull the chin up at least level with the bar!

Skin the Cat.—(See Plates 159a, 159b and 159c)



178—*Monkey Hang.*—(a) Skin the cat first and reach for mat; (b) Just before releasing get a tight grip with other hand; (c) Swing around to ordinary hang!



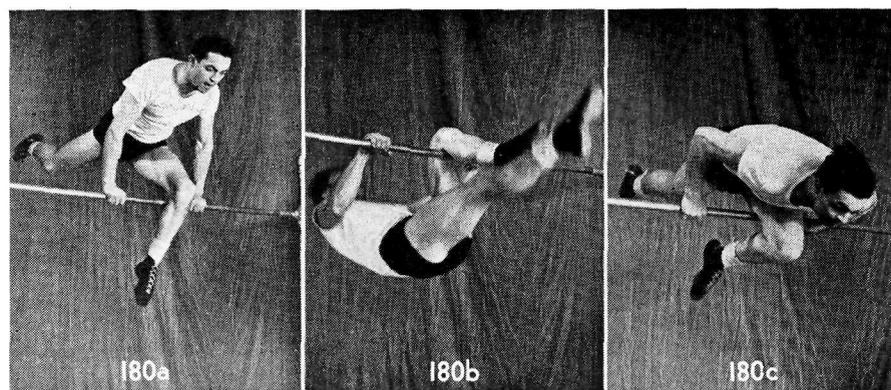
179—*Learn How to Swing and Dismount.*—(a) Chin the bar and bring feet to bar; (b) Kick up, out, and down as the arms are straightened; (c) Pull toward the bar to get back straight—Dismount on back end of swing—Drop straight and land on the balls of the feet!

Single Knee Swing Up.—(See Plates 163a, 163b, 163c)

Knee Outside.—(See Plates 164a, 164b, 164c)

Knee Between Arms.—(See Plates 163a, 163b, 163c)

* See also pp. 59, 66, 69, 271, 299, 315, 319, 327, 391, 455.



- 180—*Single Knee Circle, Backward*.—(a) Ordinary grasp—Raise thigh from bar; (b) Lengthen on top—Hook knee to bar when off balance—Reach upward and backward—Legs straight—Throw head and shoulders back as you fall; (c) Shorten swing underneath bar—Bring thigh of free leg to bar to increase spin!

SAFETY HINT.—Spot closely!

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- 181—*Single Knee Circle, Forward*.—(a) Reverse grasp—Raise thighs from bar; (b) Lengthen on top—Reach upward and forward—Hook knee to bar when off balance—Don't dive; (c) Swing free leg—Keep free leg straight!

SAFETY HINTS.—Spot closely—Steady the performer by holding onto his foot!

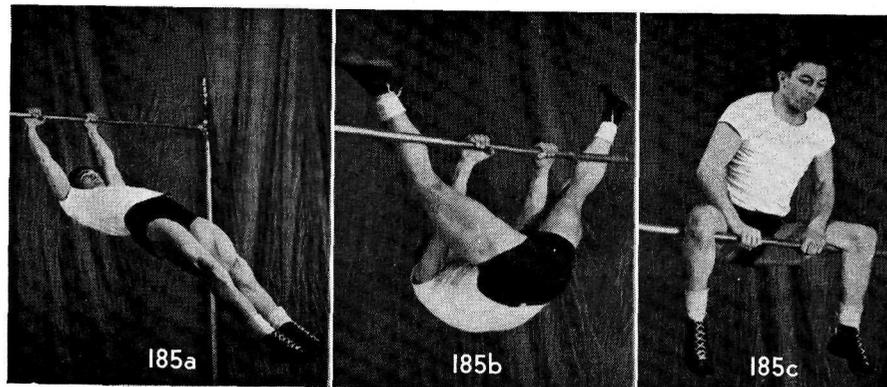
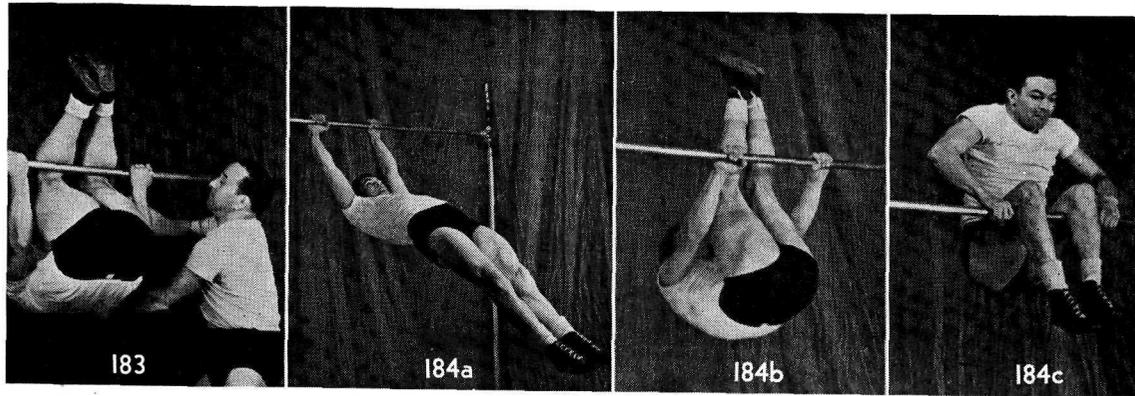
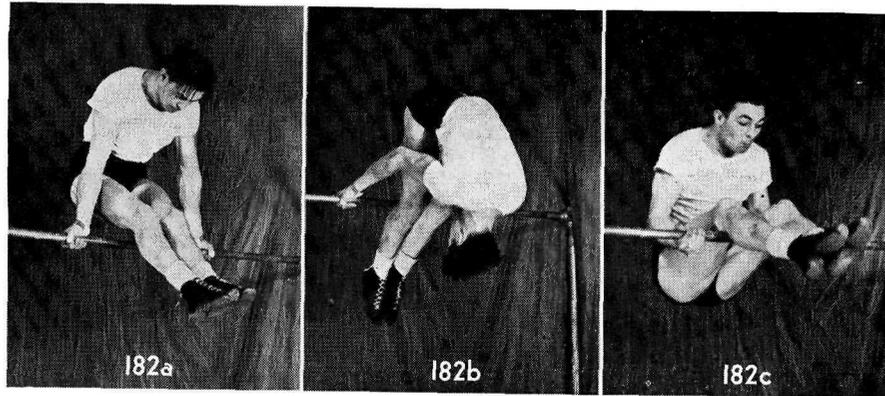
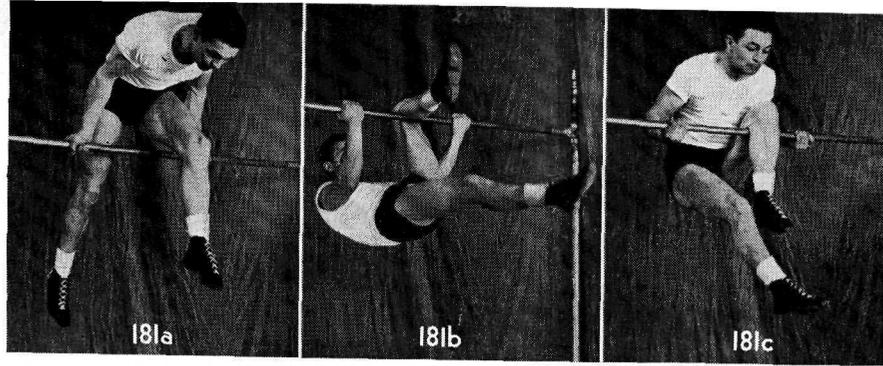
- 182—*Double Knee Circle, Forward*.—(a) Reverse grasp—Raise legs off bar; (b) Bring the hocks to bar when off balance forward—Lengthen on top—Reach up and out as you go off balance; (c) Shorten swing underneath bar!

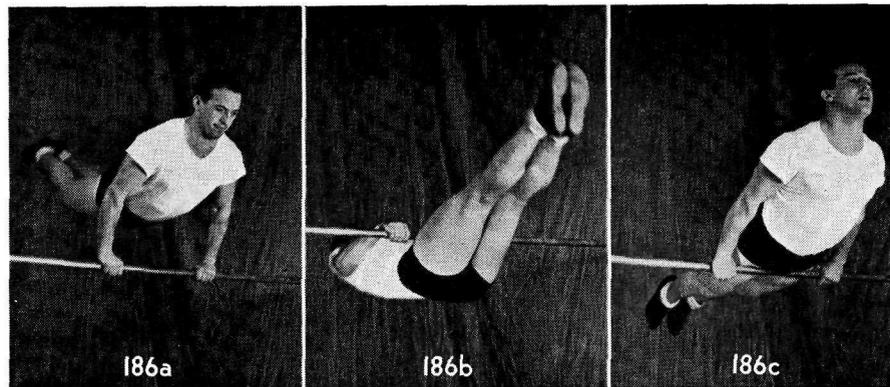
VARIATION.—*Double Knee Circle Backward*—(a) Ordinary grasp; (b) Lengthen on top; (c) Shorten underneath.

- 183—SAFETY HINTS for Double Knee Circle, Forward.—Spot closely—Steady the performer by holding his feet—Check on correct grasp (Reverse for Double Knee Circle Forward and Ordinary for Double Knee Circle Backward)!

- 184—*Double Knee Swing Up, Knees Between Hands*.—(a) Ordinary grasp—Get swing under bar—Arch back; (b) Bring legs between arms; (c) Pull with hands and arms on upward swing!

- 185—*Double Knee Swing Up, Knees Outside Hands*.—(a) Ordinary grasp—Get swing under bar—Arch back; (b) Bring legs outside arms—Get as high on thighs as possible; (c) Pull with hands and arms on upward swing!





- 186—*Backward Hip Circle*.—(a) From front rest position sink in to bar; (b) Toss legs backward—Legs come forward; (c) Head and shoulders backward—Belly to bar all the time—Arch the back as head is thrown back!

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- 187—*Forward Hip Circle*.—(a) High front rest position—Rest on thighs; (b) Reach out forward and downward; (c) Curl up quickly on other side—Move grip forward!

SAFETY HINT.—Be sure to slip grasp to other side of bar!

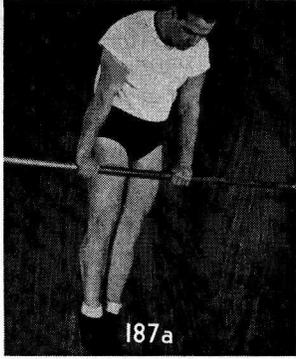
- 188—*Backward Free Hip Circle*.—(a) Keep arms as straight as possible; (b) Pull from shoulders to keep hips close to bar; (c) Push with arms after one half of circle is completed to keep body from bar—Arch the back—Throw the head backwards—Shift the wrists on bar!

- 189—*Hock Swing Dismount*.—(a) From inverted hang bring hocks to bar—Head up—Hands and arms upward; (b) Reach backward with arms as hocks are hooked to bar—Swing to highest point before dropping—Lift with arms and shoulders; (c) Don't whip legs off of bar; (d) Land on the balls of the feet!

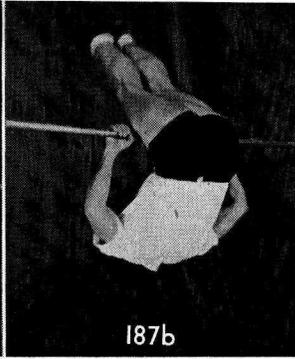
- 190—SAFETY HINTS.—Get a spotter—A spotter on each shoulder in learning the trick. Whip legs off at dead point of swing!

- 191—*Dead Man's Drop*.—(a) Hang from knees; (b) Head back—Flex legs before dropping—Throw arms up after snapping legs off bar!

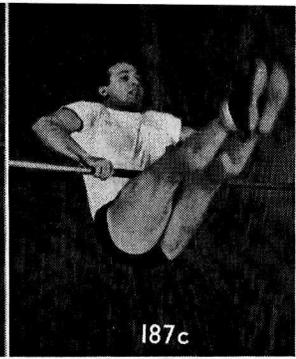
SAFETY HINT for Dead Man's Drop.—Support the performer under the shoulder!



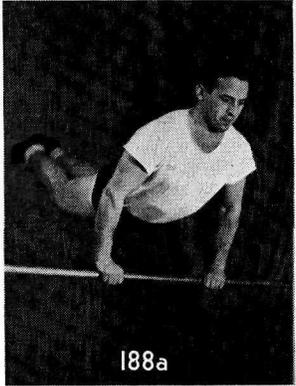
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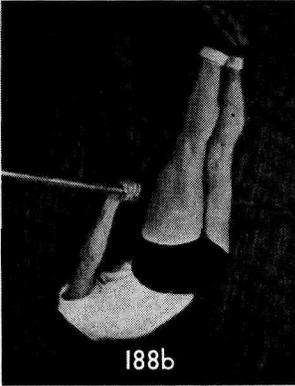
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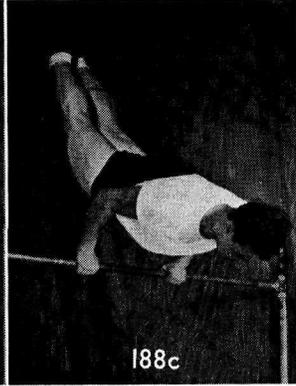
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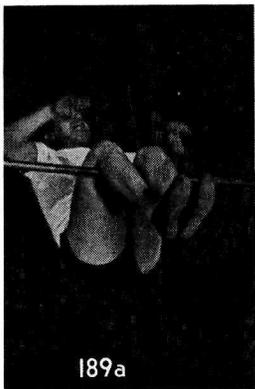
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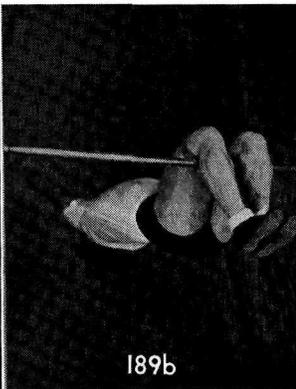
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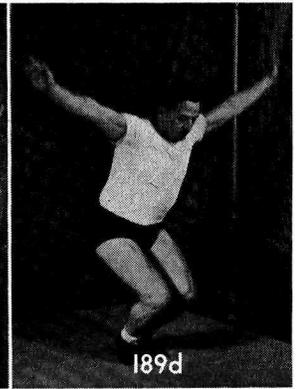
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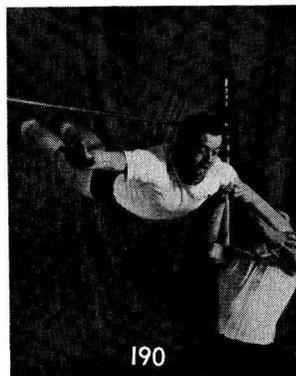
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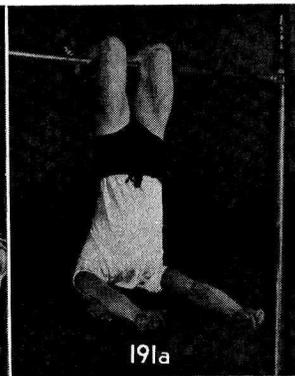
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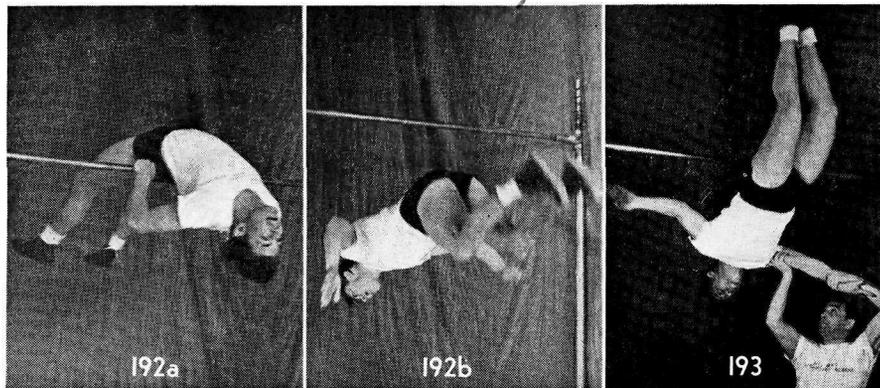
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191a



191b



192—*Back Tension Off.*—(a) Head back—Feet hold position; (b) Arch back—After shoulders are fully back, whip legs over!

193—SAFETY HINTS.—Keep eyes on mat—Get a spotter—Support shoulder and hold on to foot in learning trick!

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194—*Kip.*—(a) Arms straight throughout the stunt after the initial swing is obtained; (b) Hold arch at front end of swing—On end of front swing flex at hips and bring insteps to bar; (c) When hips are past the vertical stands kick legs up, out and down, and press down on the bar, with arms straight; (d) Front rest position!

195—*Teaching Procedure and Spotting of Kip.*—(a) Hold feet back to force arch on back; (b) Push upward to help performer up to a front rest!

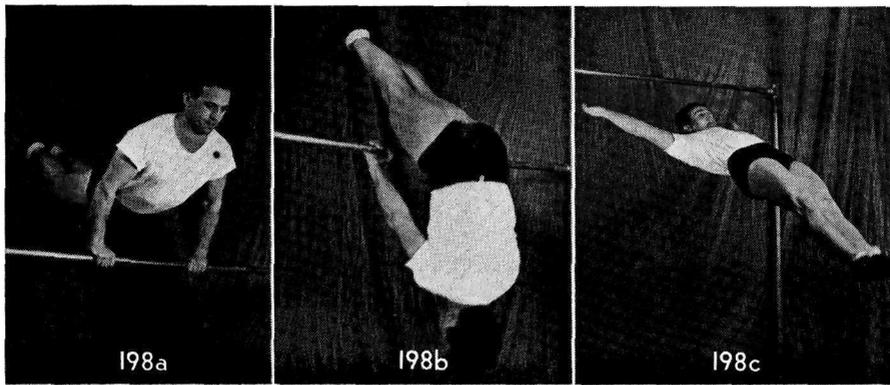
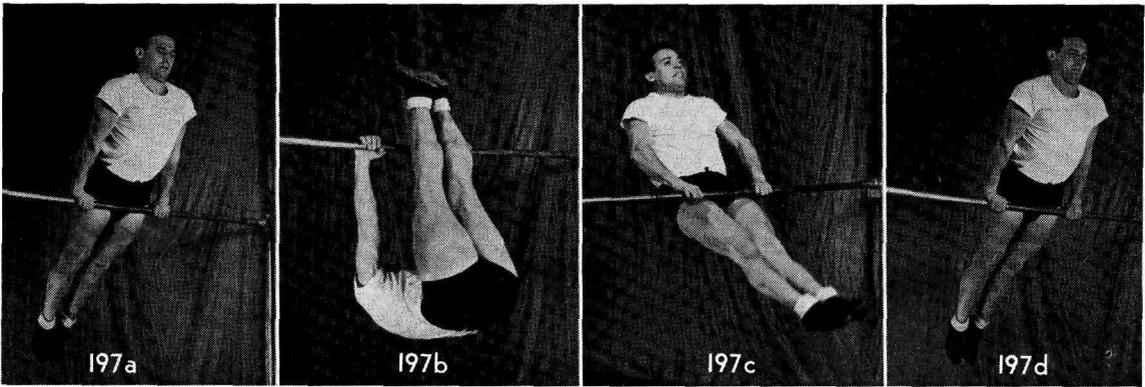
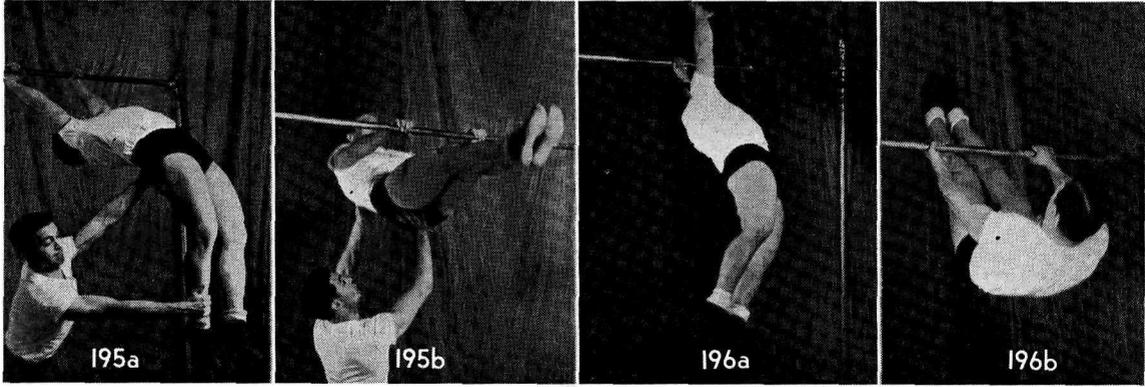
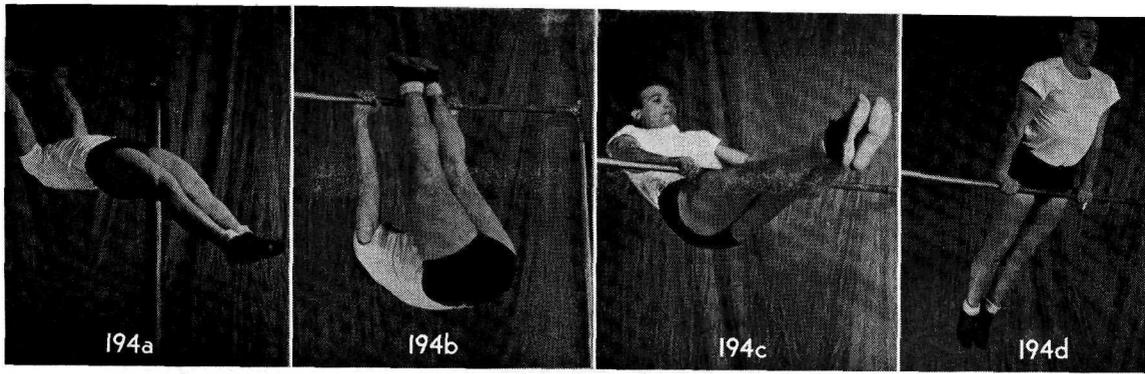
For Combined Grasp Kip (See Kip)—Same as ordinary kip—Lean on hand with ordinary grasp!

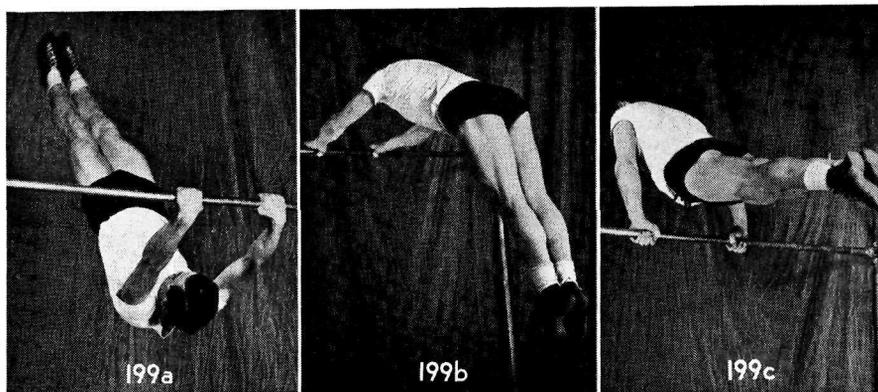
For Reverse Grasp Kip (See Kip)—Hold the arch as long as possible—Flex at waist as quickly as possible—Shift the wrists—Kick hard—Grasp should not be too tight!

196—*Swing Half Turn, Kip.*—(a) Turn early; (b) Bring legs up early!
Variation.—With combined grasp turn toward bar.

197—*Drop Kip.*—(a) Fall back from front rest; (b) Keep arms straight—Insteps to the bar; (c) Do not kick too early—Wait until hips swing back; (d) Arms straight—Front rest!

198—*Kip, Backward Free Hip Circle, Short Underswing Dismount.*—(a) Do a high straight arm kip; (b) Throw body away from bar previous to going into the hip circle; (c) Keep arms straight on dismount—Keep continuous rhythm throughout trick!





199—*Uprise, Ordinary Grasp*.—(a) Obtain maximum swing—Reach up, out, and down with feet; (b) Start pull after body has swung past the vertical supports—Lead with head—A short quick flexing of body aids in uprising; (c) Bring shoulders ahead of hands for balance—Arch back—Point toes!

Uprise, Reverse Grasp is the same as *Uprise, Ordinary Grasp*, except for grasp.

Variations.—*Uprise*—Two backward free circles and short underswing dismount. *Uprise, Reverse Grasp*—Change grasp at top of uprise, then two backward free hip circles.

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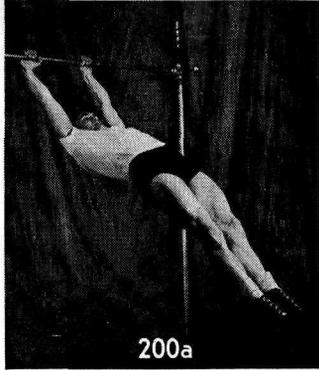
200—*Reverse or Back Kip*.—(a) Ordinary grasp—Swing forward and bring feet between arms; (b) Swing backward with heels close to bar; (c) Swing feet downward as forward swing begins—Arch back—Lift head!

201—*Heel Circles, Forward*.—(a) Reverse grasp—Lift thighs off bar; (b) When off balance bring heels to bar—Reach up and out; (c) Shorten underneath!

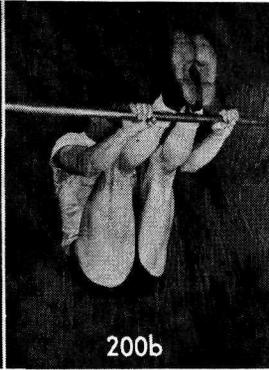
202—*Heel Circles, Backward*.—(a) Ordinary grasp—Lift thighs from bar; (b) When off balance bring heels to bar—Reach up and backward; (c) Shorten underneath!

SAFETY HINTS.—Learn heel circles on low bar at first because it is much easier to spot and assist the performer!

203—*Giant Hock Circle (Swing)*.—(a) Start from sitting position—Throw arms and head back—Keep upper body extended; (b) Pull with knees at bottom of swing; (c) Flex at waist and attempt to sit on bar—Reach back with hands to grab the bar (Ordinary grasp)!



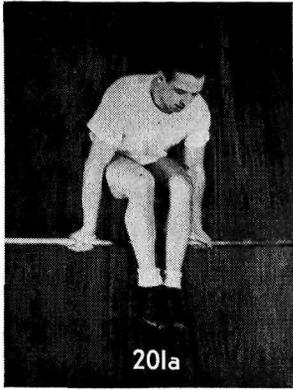
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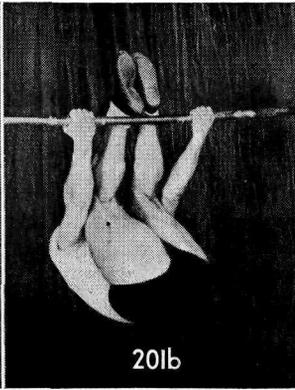
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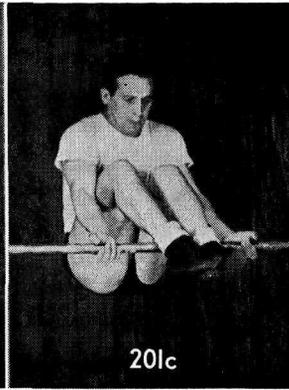
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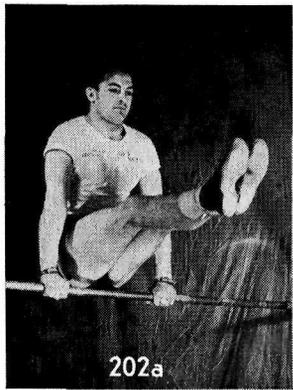
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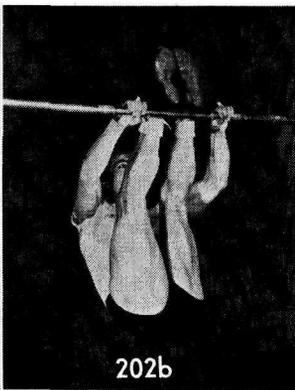
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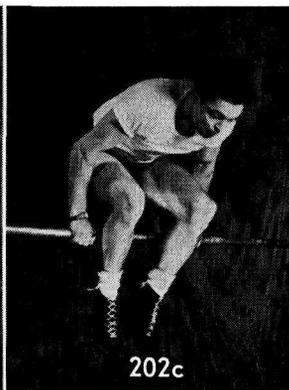
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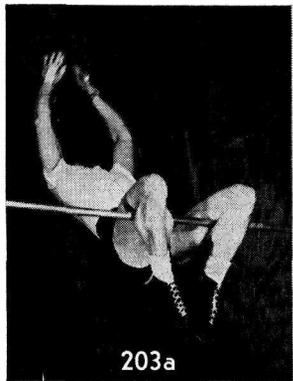
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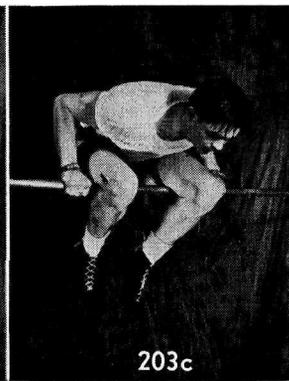
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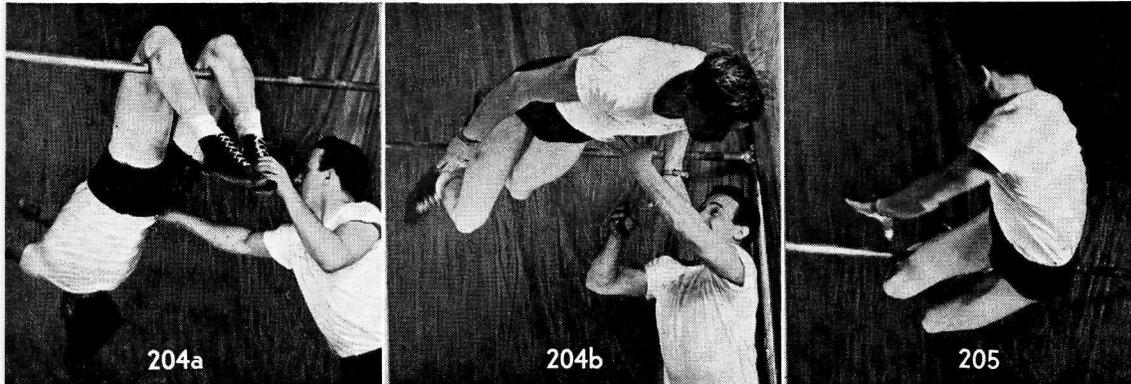
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204—SAFETY HINTS.—(a) Have the bar low enough so that the spotter can hold onto the feet of the performer as he throws backward. In this way he will be sure the hocks do not slip off the bar; (b) As he swings upward he is ready to spot if performer does not quite get on top of bar.

205—*Giant Hock Circle (Swing) Half Turn to Front Rest.*—Twist after pulling with knees—Grasp bar with ordinary grasp!

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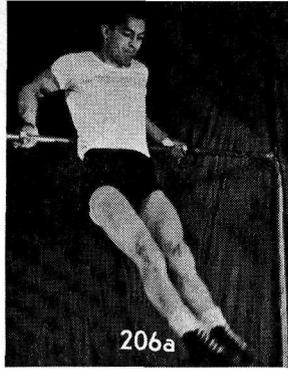
206—*Back Hip Circle Forward.*—(a) Reverse grasp—Arms flexed—Reach downward; (b) Arch back—Keep close to bar!

207—*From a Front Elbow Lever Above Bar With a Reverse Grasp Turn Over (Forward) to a Back Uprise.*—(a) Shoulders past the bar—Legs well over bar before straightening arms—Reverse grasp; (b) Be sure to straighten arms; (c) Lead with head!

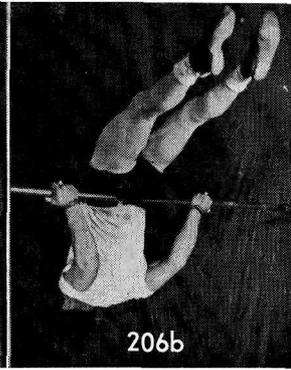
208—*Cast Off, Cross Hand, Rear Uprise.*—(a) Get high cast and reach for cross grasp; (b) At end of swing pull with arms to uprise; (c) Change grasp to reverse grasp!

209—*Momentary Hand Balance on Low Bar.*—(a) Cast to a hand balance—Bring legs in front of bar to get a beat—Keep elbows locked—Swing freely from the shoulders; (b) As you go over the top tuck chin on chest—Make sure the feet are beyond the vertical before you tuck—Extend the entire body!

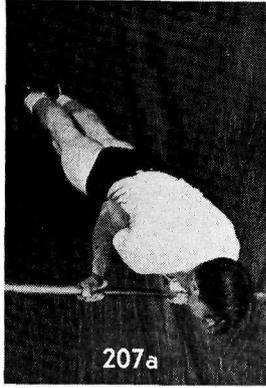
SAFETY HINT.—Two spotters: one to spot the feet; the other to spot the shoulders!



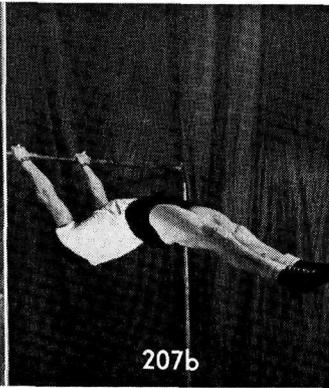
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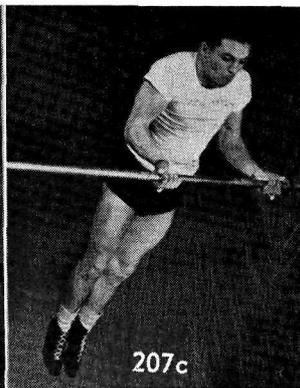
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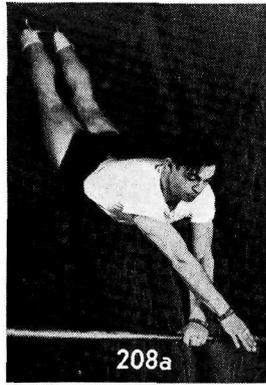
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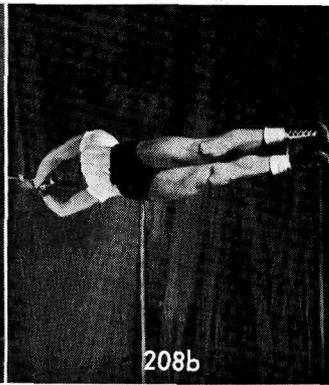
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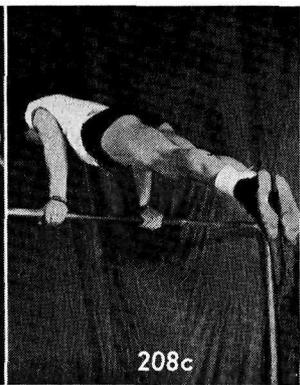
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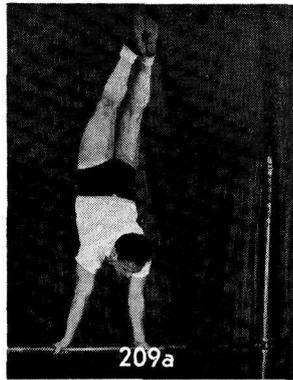
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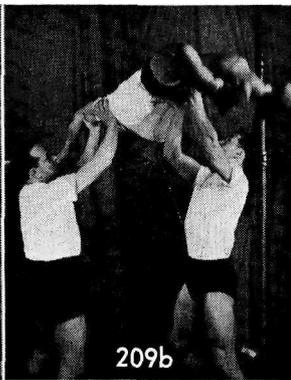
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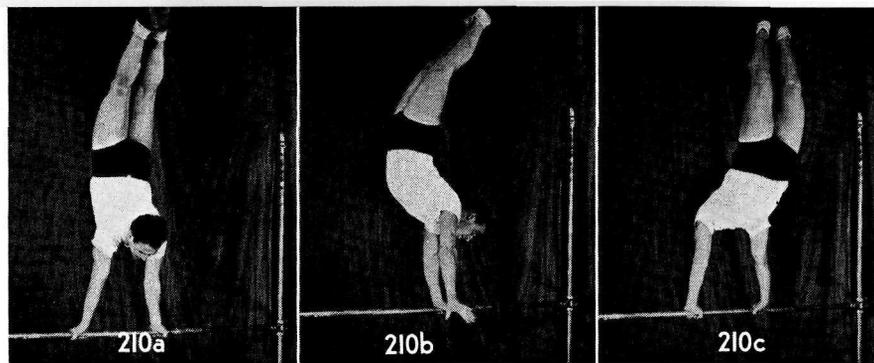
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210—*Pivot from a Momentary Hand Balance (Reverse Grasp) to a Momentary Hand Balance (Ordinary Grasp).*—(a) Practice with the low bar at its lowest height—Kick into hand balance with reverse grasp; (b) Pivot on one arm—Be turning before you pass the vertical; (c) Straight arms!

SAFETY HINTS.—Do not change your mind in the middle of the stunt—At the end of the pivot flex at the waist—Do not land on the mats with the body outstretched!

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Dismounts

Hock Swing Dismount at Front End of Swing.—(See Plates 189a, 189b, 189c and 189d)

SAFETY HINT for Hock Swing Dismount at Front End of Swing—Have Spotter on each side holding the upper arm of the performer! (See Plate 190)

211—*Hock Swing Dismount at Back End of Swing.*—(a) Get regular swing from knees; (b) Come back with a high swing—When at maximum height, pull legs from bar; (c) Keep head forward—Flex at waist when pulling legs off bar!

212—SAFETY HINTS.—Pull heels quickly out at top of swing or they will get caught—Swing hard with arms and hands to get as much height as possible—Be spotted closely!

213—*Forward Ankle Swing Dismount at Back of Swing.*—(a) Reverse grasp—Arms straight—Legs straight; (b) Lean forward; (c) Just before maximum height is reached, release hands and pull legs off bar—Keep head forward!

SAFETY HINT.—Be careful that the performer does not release the bar too soon!

214—*Sole Circle Dismount.*—(a) Ordinary grasp—Head back—Arms straight—Legs straight; (b) Swing back, head up and back; (c) Release after maximum height is reached—Push with feet!

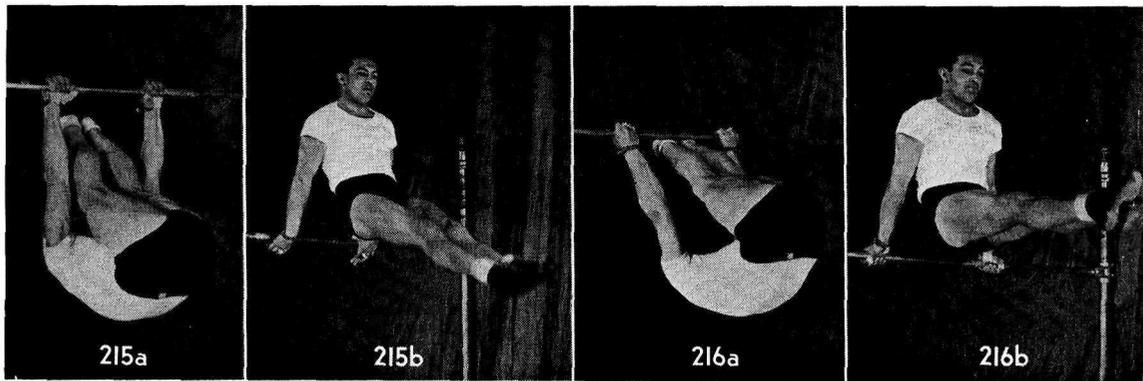
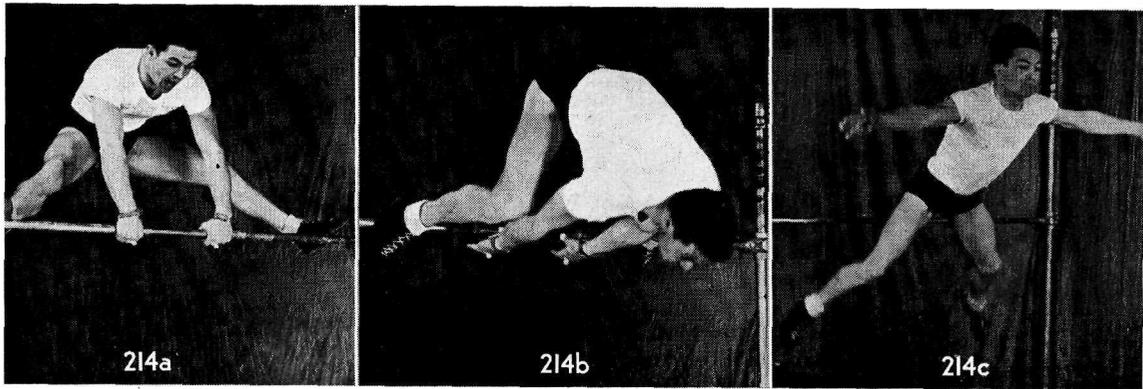
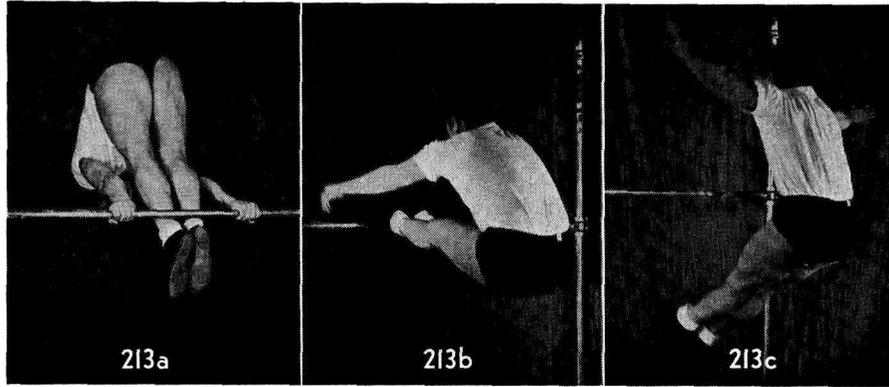
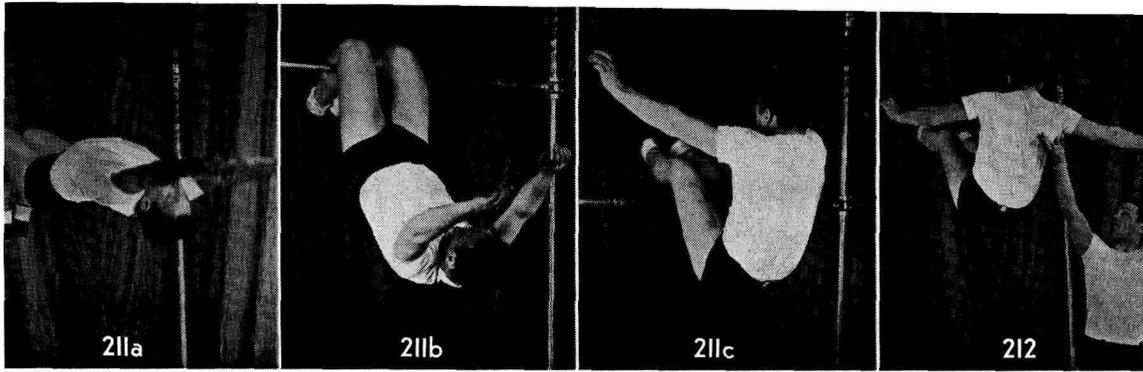
SAFETY HINT.—Spot the shoulders closely!

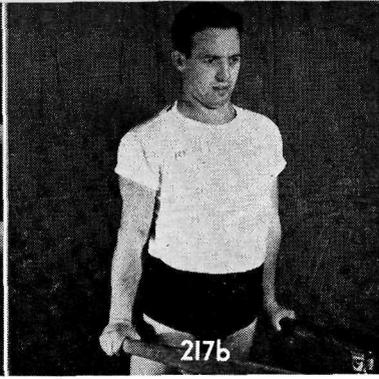
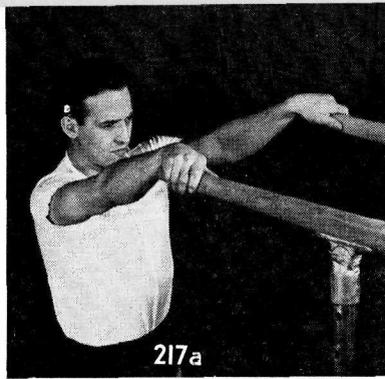
215—*Shoot Over.*—(a) Arms straight—Head forward; (b) Shoot legs over bar—Pull with arms—Keep hips high!

SAFETY HINT.—Watch closely that the performer does not land on the bar with his back!

216—*Heel Circle Into Shoot Over.*—(a) Arms straight; (b) Release heels at bottom of swing—Pull with arms!

SAFETY HINT.—Be careful that the performer does not release either too soon or too late!





Suggestions for Advanced Stunts on High Bar

Reverse Giant Swing—Reverse Giant Swing to an Uprise—Running Start, Jump to a Free Hip Circle Mount to a Drop Kip—Half Giant Swing (Ordinary)—Ordinary Giant (One and One-half Swings) with spotters on each side.

Giant Swing Changes: Reverse to Ordinary—Ordinary to Reverse—Cross Giant Swings—Reverse Pirouette Giants—Reverse Giants—Eagle Swing Into Uprise—Eagle Swing Into Reverse Giants.

Dismounts: Sheep Vault—Front Flyaway—Back Flyaway—Back Flyaway One-half Twist—Ordinary Giant Swings, Reach Under Flank Vault—Back Layout off Bar—Front Somersault over Bar—Handspring over Bar—Side Flyaway—Front Flyaway Full Twist—Double Flyaway.

PARALLEL BARS

Safety Fundamentals

217—*Grasp*.—(a) On grasping bar before mount, place thumb along bar; (b) After mount, circle thumb around bar!

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218—*Swing from Shoulders*.—(a) When swinging from a support position, swing from shoulders—When swinging backward, lean slightly forward—Keep arms locked—Keep body arched; (b) When swinging forward, lean slightly backward—Extend hips forward!

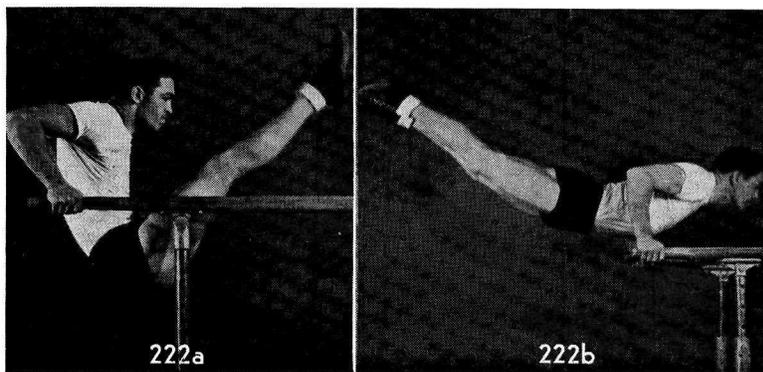
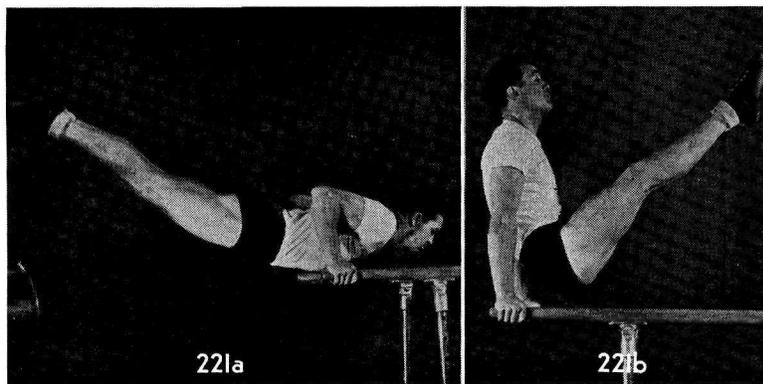
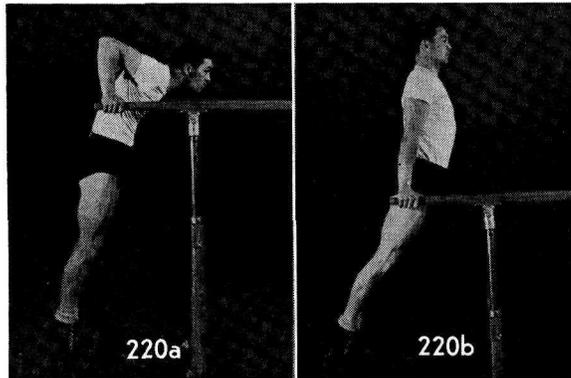
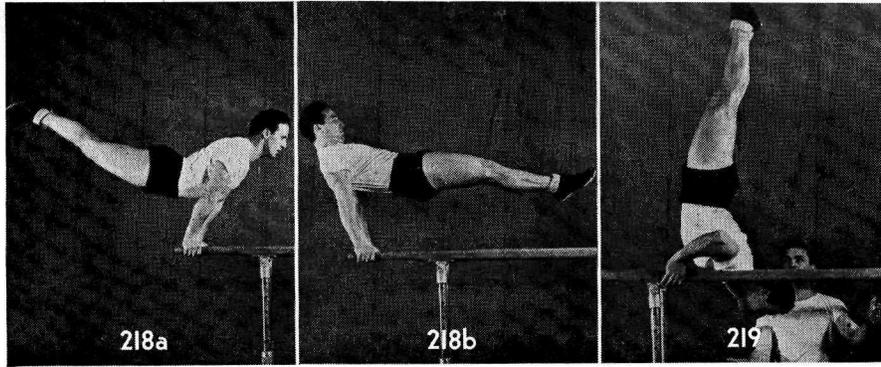
219—*Spotting*.—In spotting a performer, spot underneath the bars—Do not place arms over top of parallel bars while guarding or aiding a performer—Keep alert—Keep eyes on performer—Be ready to step in!

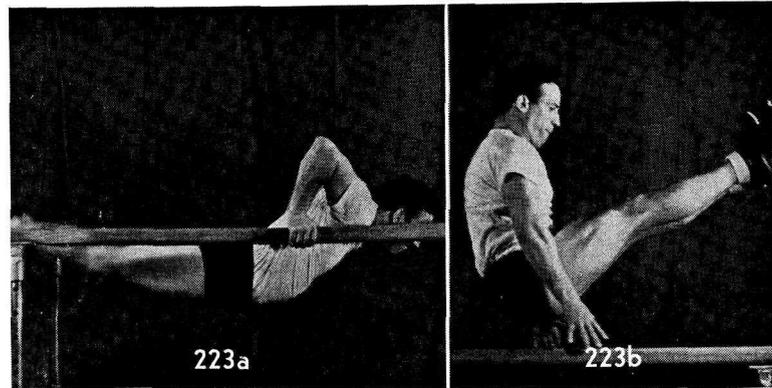
Strength Stunts

220—*Dips*.—(a) Start from straight arm cross support position—Head up—Arch back; (b) Drop to bent arm position—Arch back—Head up!

221—*Forward Swinging Dips*.—(a) Swing from shoulders—At end of rear swing flex arms—Head up—Arch back; (b) Swing forward in bent arm position—At front end of swing straighten arms and shoot feet up!

222—*Backward Swinging Dips*.—(a) Swing from shoulders—At front end of swing flex arms and pike body—Drop to bent arm position; (b) Swing backward in bent arm position—At rear end of swing straighten arms and arch back!

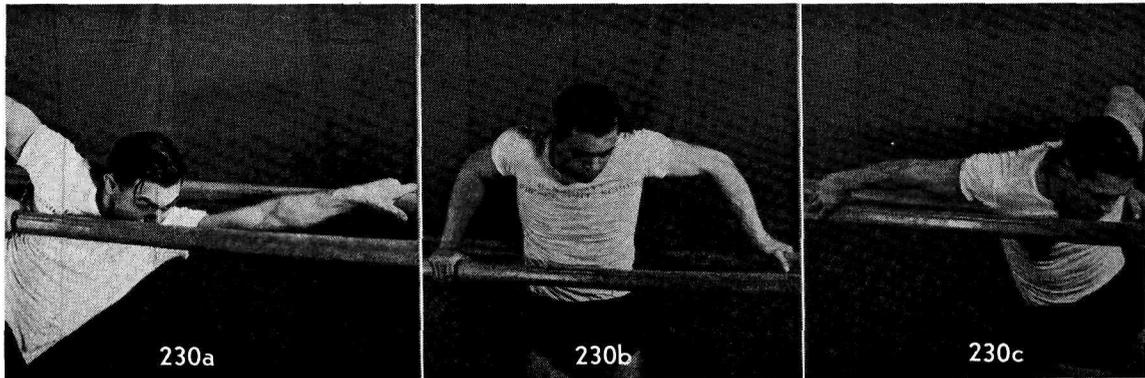
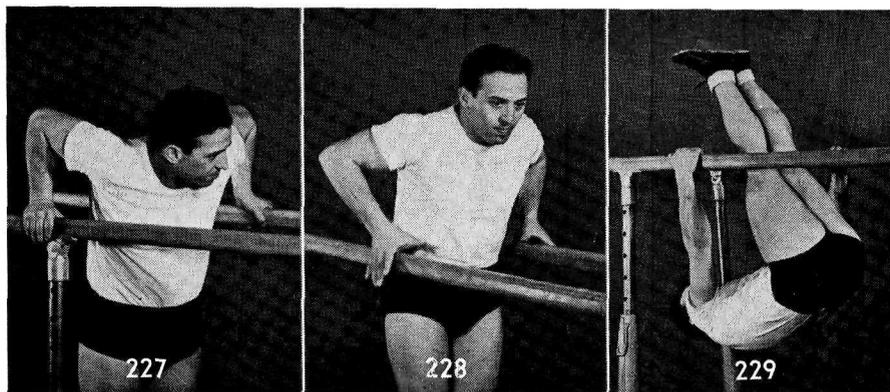
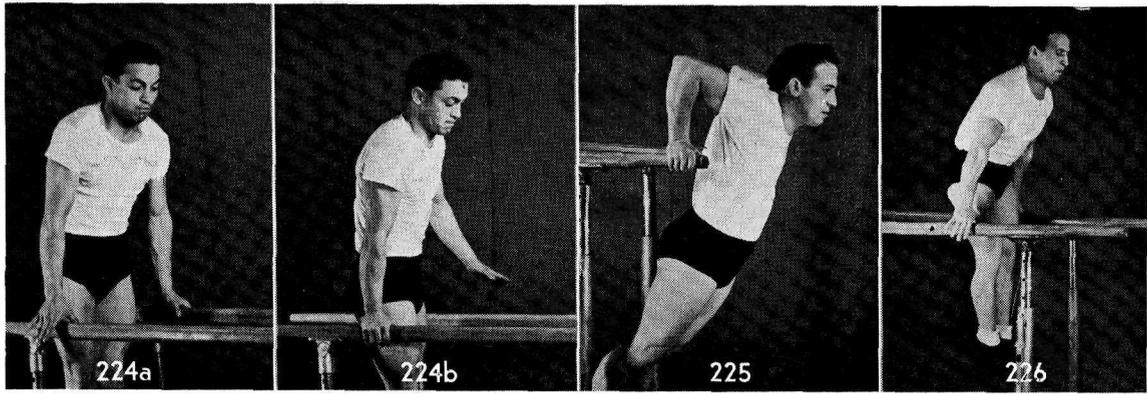


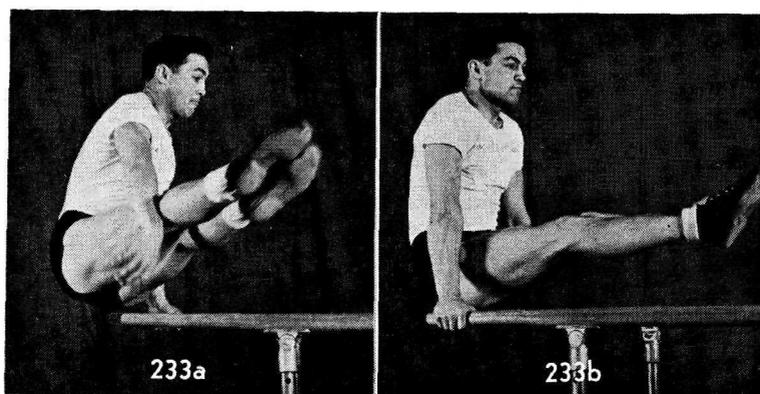
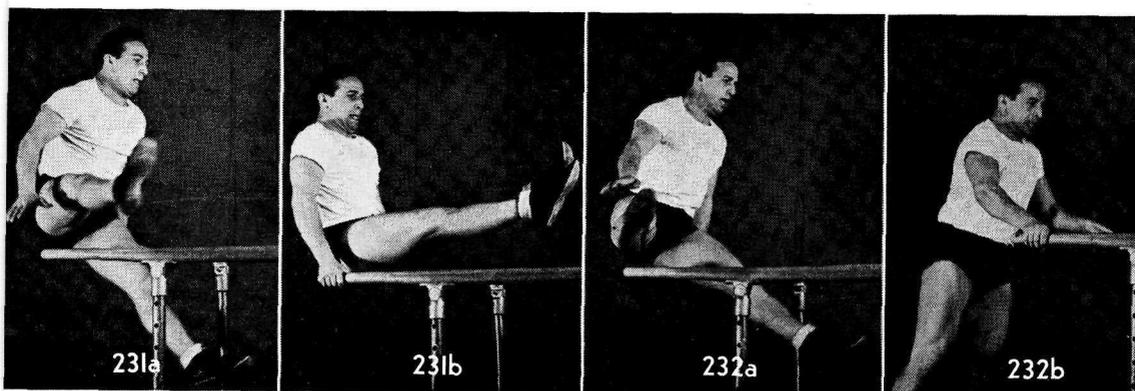


- 223—*Swinging Dips Travel Forward.*—(a) Do a forward swinging dip; (b) At front end of swing shoot feet up and forward—Push off the hands—Travel forward and regrasp!

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- 224—*Walk Length of Bars in Straight Arm Cross Support Position.*—(a) Head back—Chin in—Back arched—Elbows locked—Toes pointed; (b) Small steps!
- 225—*Walk Length of Bars in Straight Arm Cross Support Position, Dips at Far End.*—Keep body arched—Keep head up—Push forward and upward on dips—Do as many dips as possible!
- 226—*Hop Length of Bars in Straight Arm Cross Support Position.*—Small hops—Head back—Chin in—Chest out—Back arched—Arms straight—Toes pointed!
- Variations.*—Same and Dips at End.
- 227—*Grasshopper Walk Length of Bars, Forward and Backward (Bent Arm Position).*—Head back, chin in—Flex arms—Arch back, point toes—Small steps!
- Variation.*—Grasshopper Walk Length of Bars, and Dips.
- 228—*Grasshopper Hop Length of Bars.*—Keep body arched—Keep body ahead of hands—Push hard with both hands—Work in rhythm to use the spring of the bars!
- Variation.*—Grasshopper Hop Length of Bars and Dips.
- 229—*Inverted Hang and Walk Forward.*—Grip outside of bars—Keep feet over the head—Take small steps!
- Variation.*—Inverted Hang and Walk Backward—Same as Inverted Hang and Walk Forward, except the feet are slightly behind the head!
- 230—*Lion's Crawl Length of Bar.*—(a) Keep weight on one arm—Reach under the bar with free arm; (b) Push hard to straighten arms—Space crawls evenly to finish at end of bars; (c) Lower down on the front arm—Do not use elbows!
- Variation.*—Lion's Crawl Length of Bar and Dips.
- SAFETY HINT.**—For Lion's Crawl use forearms until strong enough to perform without their use.



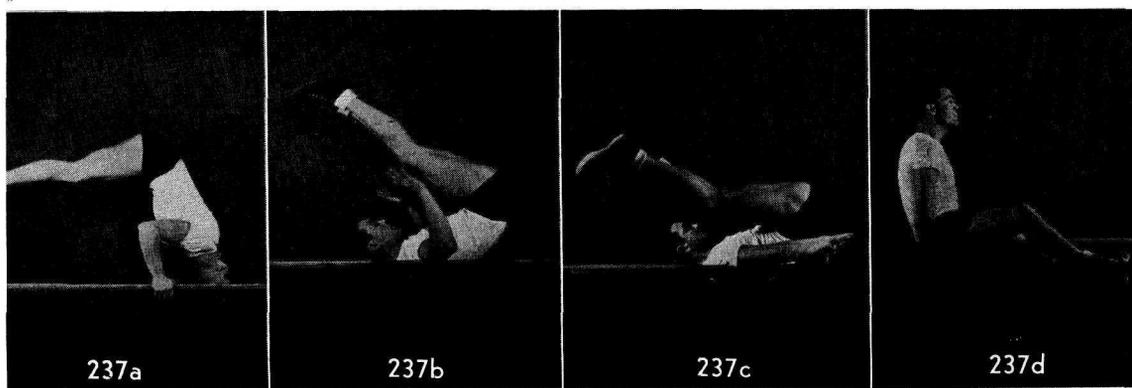
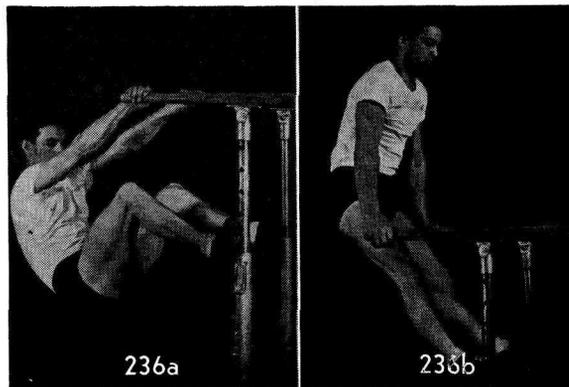
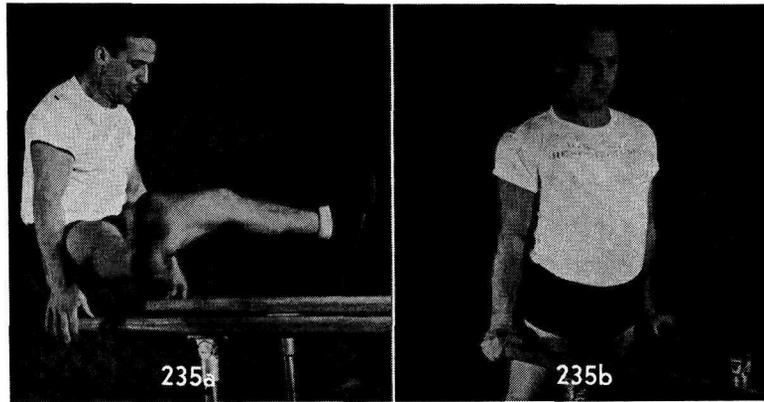
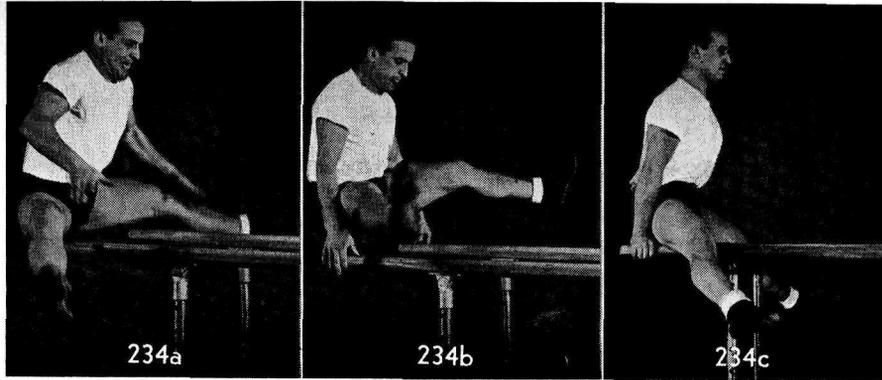


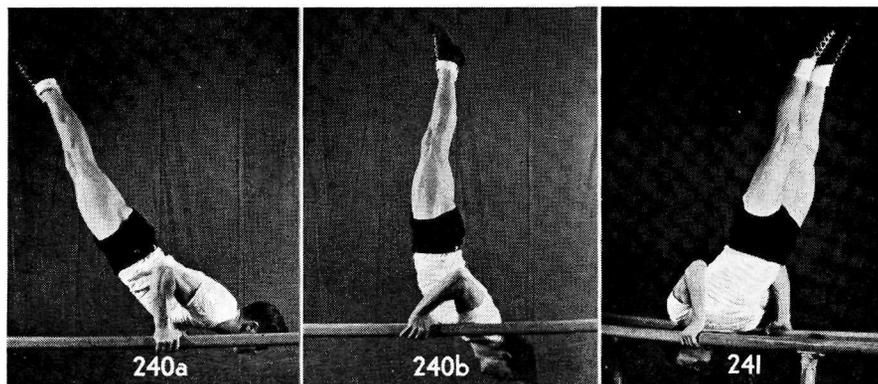
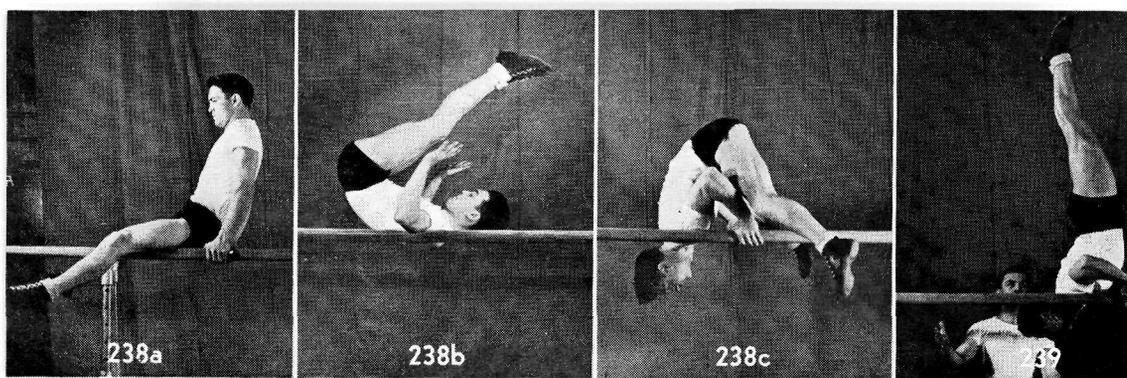
Skill Stunts

- 231—*Single Leg Cut On, Right and Left Leg.*—(a) Jump with arms straight—Bring one leg up and horizontally over bar; (b) Regrasp with other hand—Lean forward and finish up to front cross rest!
- 232—(a) From cross support swing forward—Cut leg over bar—Lean on supporting arm—Keep arm straight; (b) On dismount regrasp bar!
- 233—*Double Leg Cut On, Right and Left.*—(a) From stand facing bars jump, cutting legs over bar (left or right); (b) Hold legs in half lever!

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- 234—*Double Leg Cut On to a Straddle Seat.*—(a) Jump with straight arms—Cut both legs over bars; (b) Land on bars in straddle seat—Regrasp bar from behind; (c) Assume an active straddle seat!
- 235—*Double Leg Cut On to Regrasp to Straight Arm Support.*—(a) Jump with straight arms—Cut both legs over bars; (b) Land with feet together—Regrasp bars—Hold "L" position!
- 236—*Lazy Man's Kip.*—(a) Jump with arms straight—Place feet on uprights; (b) Push with legs—Rise up to front cross support!
- 237—*Forward Roll.*—(a) Lift hips high and lower upper arms to bar; (b) Change grasps from back to front when off balance forward; (c) Keep elbows spread; (d) Regrasp bars to straddle position!





238—*Backward Roll*.—(a) Start from straddle position—Lean backward; (b) Shoot feet up over head—Lift hard with the feet and push with the hands—Keep legs in straddle position; (c) Regrasp bars—To straddle position!

SAFETY HINT.—Spot Underneath Bar. (See Plate 239)

240—*Upper Arm Balance*.—(a) Swing from shoulders—Swing feet up before shoulders are lowered to bar; (b) Head up—Control the balance with the hands—Body arched and weight on upper arms!

241—*Variation*.—Shoulder Balance on Bar.

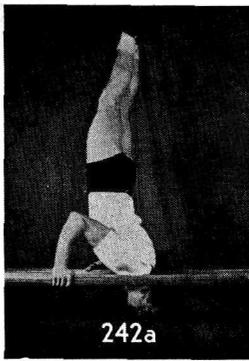
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242—*Shoulder Balance—Forward Roll on One Bar and Back Roll to Shoulder Balance*.—(a) From shoulder balance on bar roll forward; (b) Pike body while rolling; (c) Finish roll in side seat position—On back roll return to shoulder balance—Shoot feet up and backward!

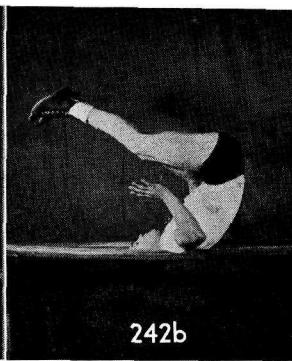
243—*Back Uprise*.—(a) Upper arm support leg in front; (b) Obtain maximum swing; (c) Pull to support as feet rise above bars—Forward and upward with the shoulders!

244—*Front Uprise or Quick Kip*.—(a) Arch back—Head up; (b) Pull quickly with arms as feet rise to bars—Hips forward!

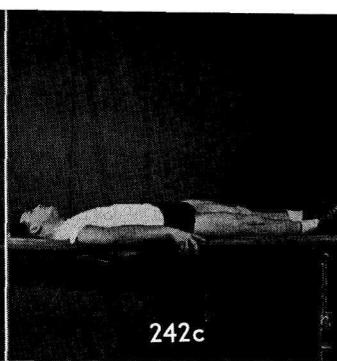
245—*Short Kip*.—(a) Swing with feet over head (Kip Position); (b) Wait until back swing and shoot feet—Keep arms straight and press downward with shoulder muscles!



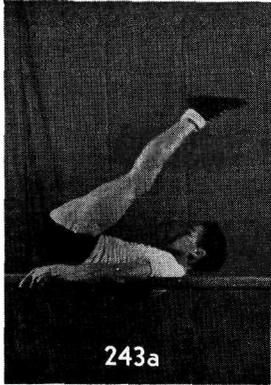
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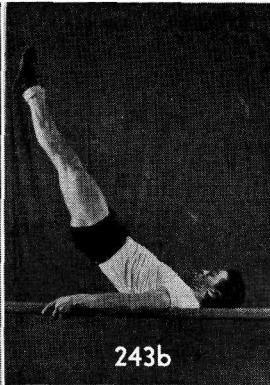
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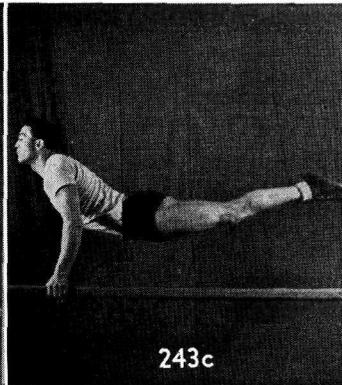
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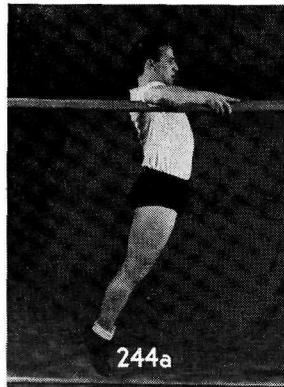
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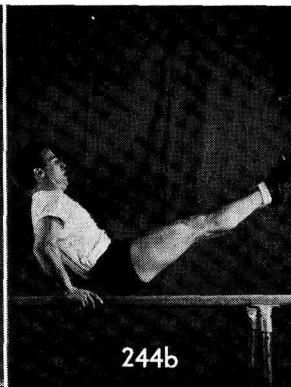
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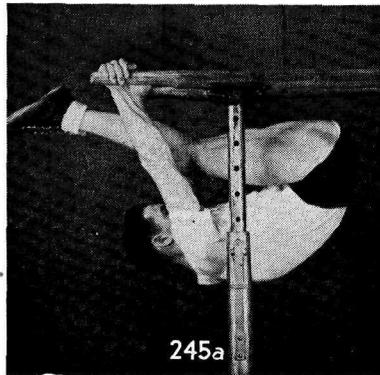
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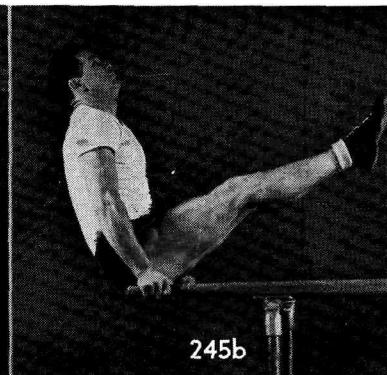
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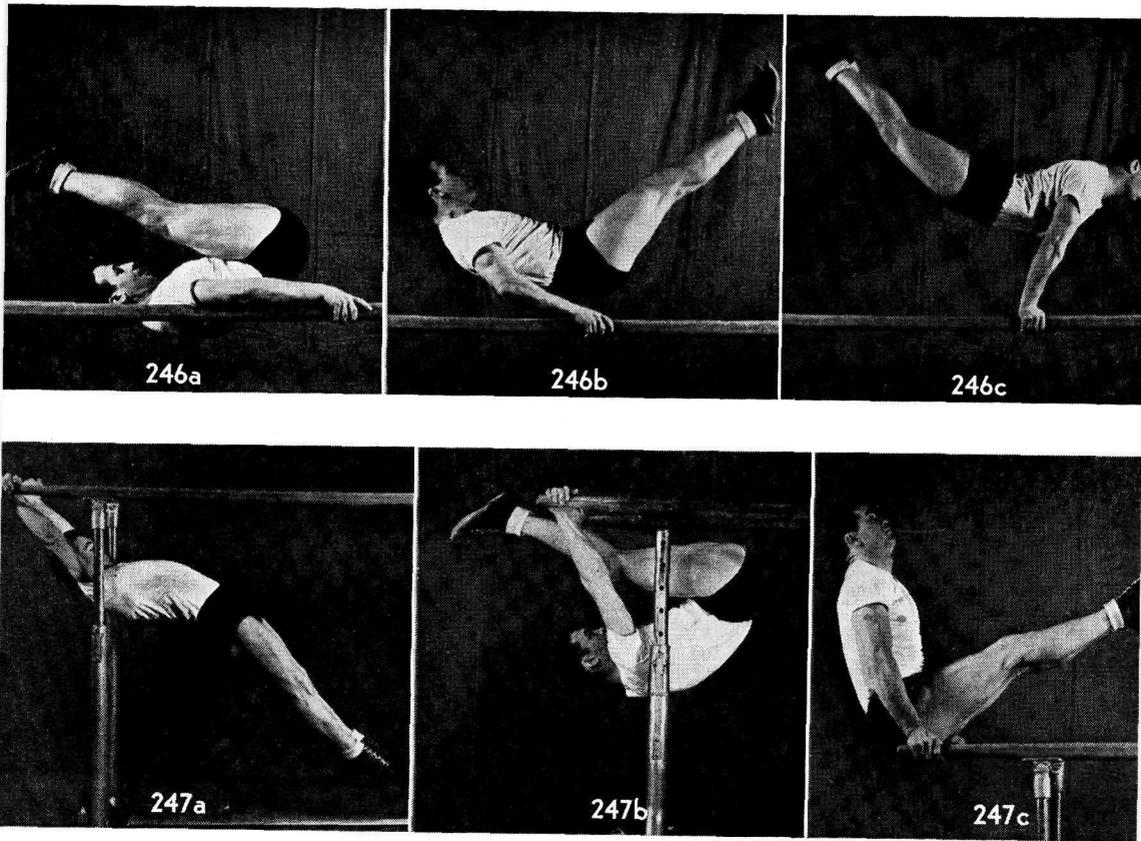
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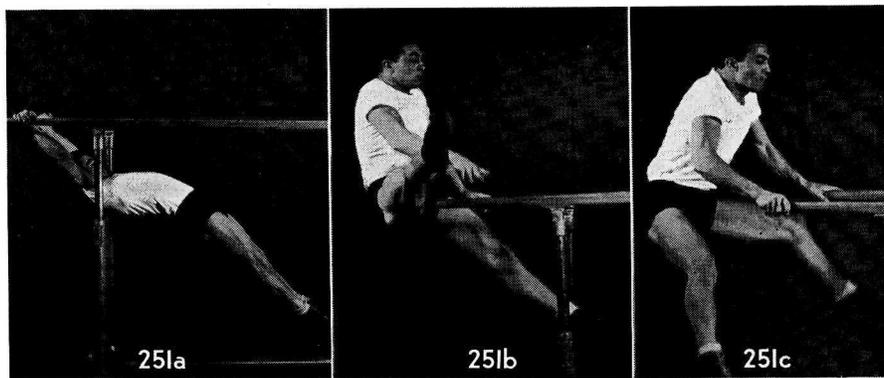
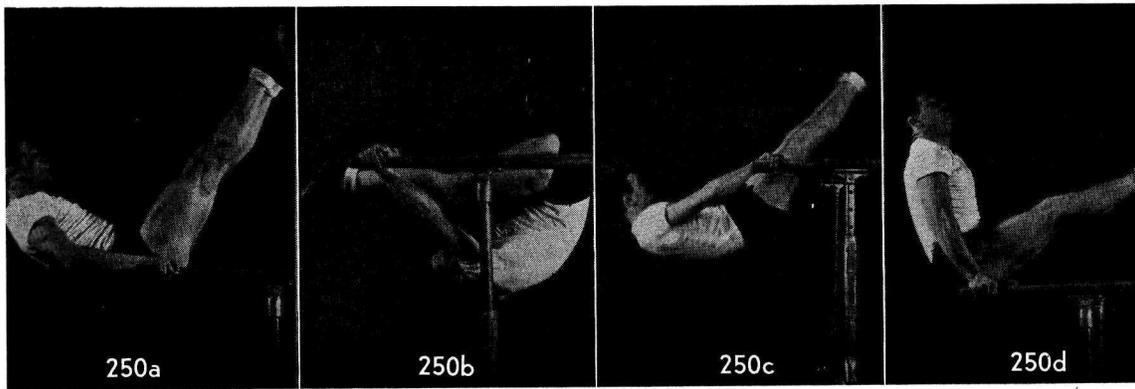
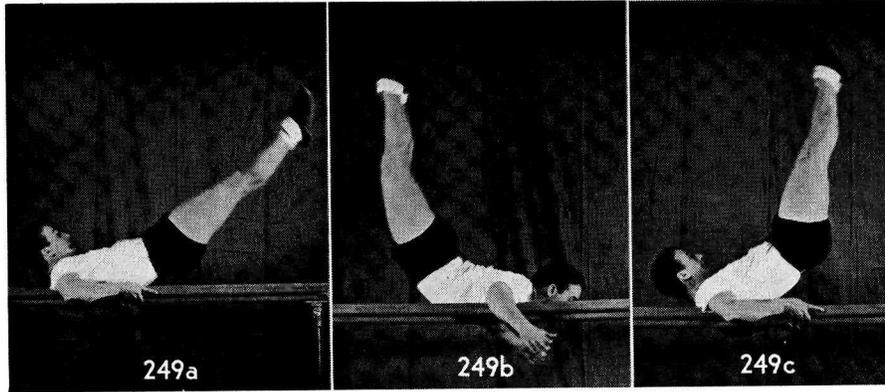
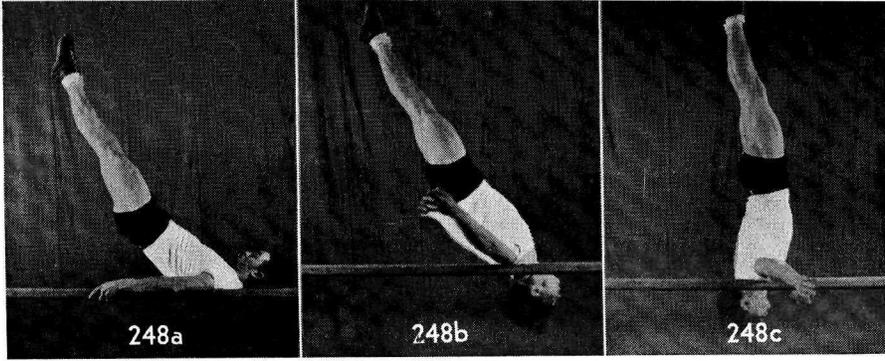
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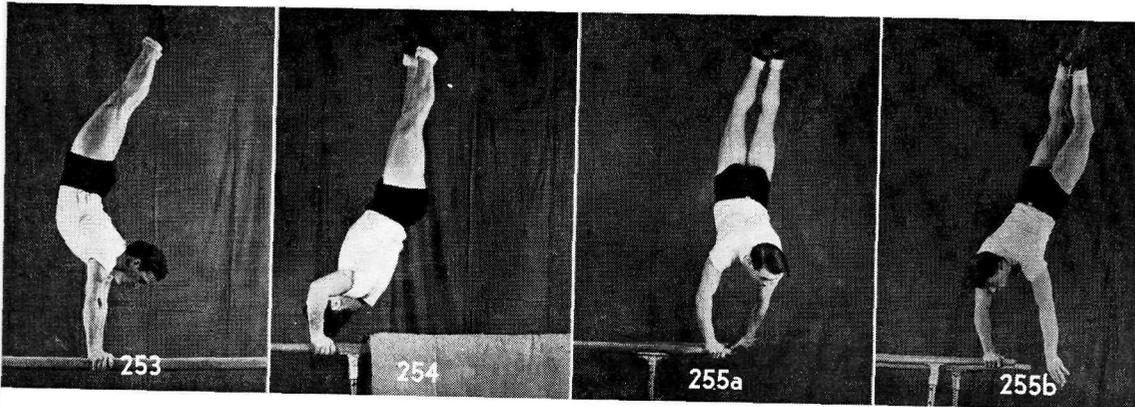
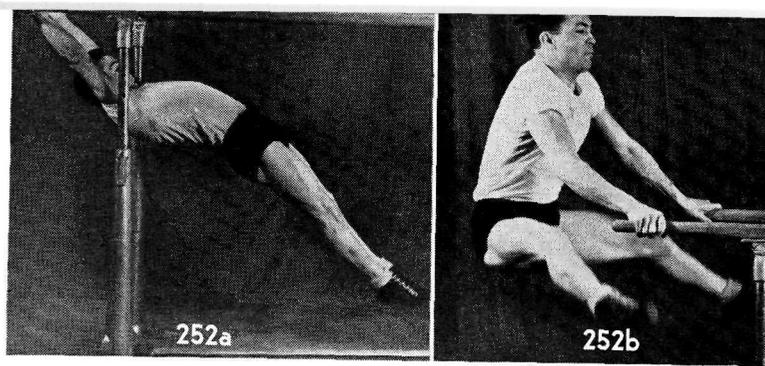


- 246—*Upper Arm Kip (Kick Upstart)*.—(a) Bring the feet over head; (b) Throw feet out and downward—Pull with arms to support; (c) Cross rest!
- 247—*Glide Kip*.—(a) Keep feet close to ground—Emphasize arch on front end of swing; (b) Bring legs quickly to bar and shoot up and over bar; (c) Keep arms straight—Press down with shoulder muscles—Lean slightly backward!

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- 248—*Hollow Back Rolls Backward (Giant Rolls Backward)*.—(a) Extend hips forward—Press down hard with hands—Pull with arms and chest; (b) Just before peak of swing press hard with hands and throw head backward—Pull with arms and arch body; (c) Let grasp go when feet are overhead—Regrasp quickly!
- 249—*Hollow Back Rolls Forward (Giant Rolls Forward)*.—(a) Pull with arms and arch body, feet forward; (b) Let grasp go when feet are over head; (c) Regrasp quickly!
- 250—*Drop Kip*.—(a) From support; (b) Drop with feet over head; (c) Wait until end of back swing; (d) Shoot feet up and out, then down—Pull with straight arms—Lean back and hold legs in half lever!
- 251—*Glide Kip Single Leg Cut Off Regrasp*.—(a) Glide swing; (b) Kip and cut one leg; (c) Cut late and regrasp!

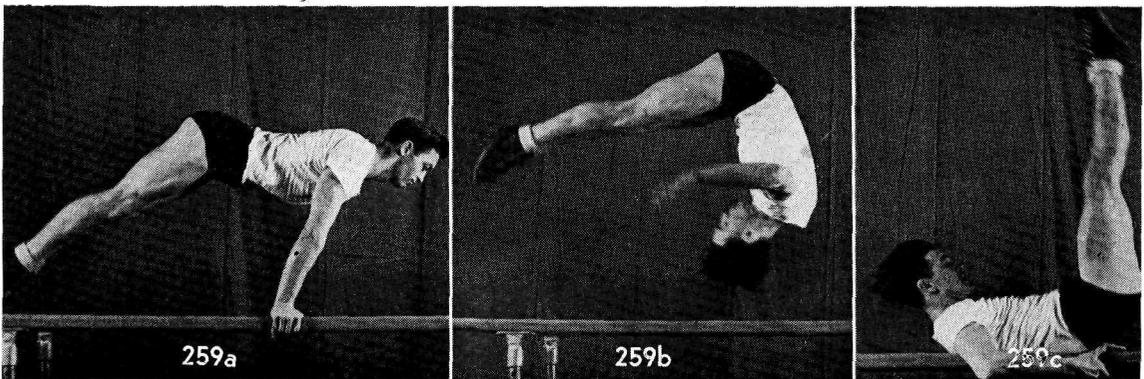
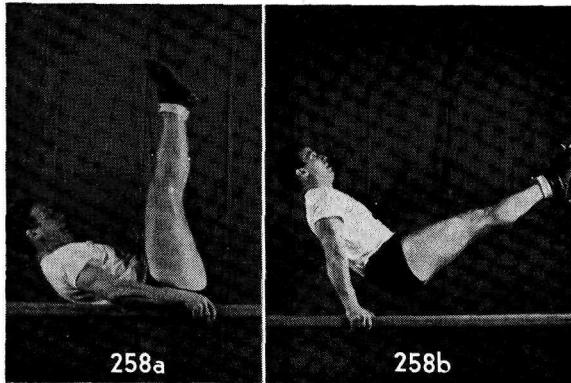
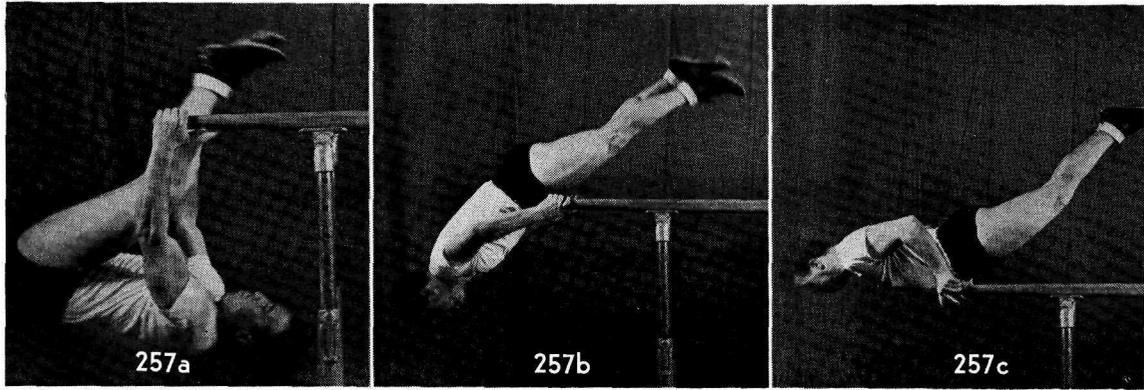
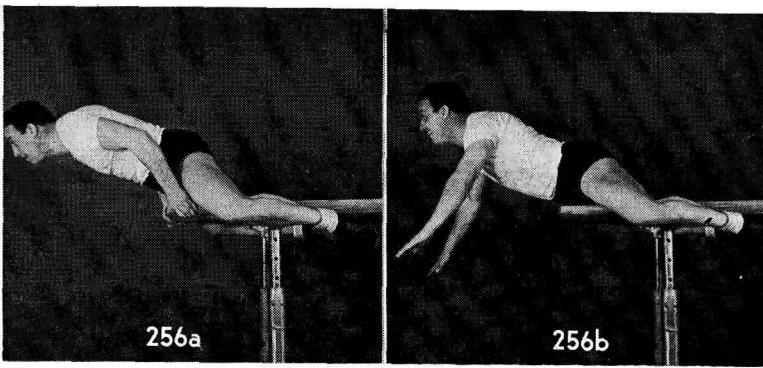


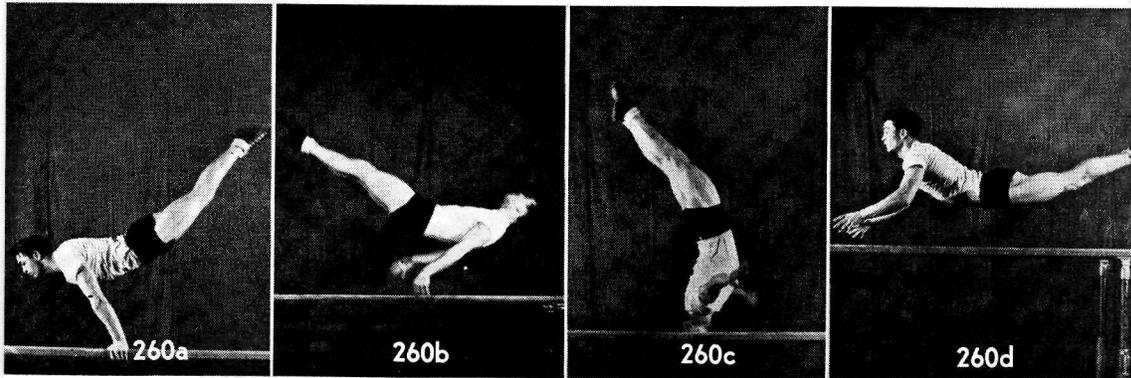


- 252—*Glide Kip Double Leg Cut Off Regrasp.*—(a) Kip first; (b) Cut out and down—Stay in pike position!
- 253—*Swing to Hand Balance.*—Swing from shoulders—Arms straight—Shoulders over hands—Keep body arched, head up—Feet over head—Use upper back muscles—Fight with hands!
- 254—**SAFETY HINT.**—Kick up from bar at first facing in—Place mat over the bar—When off balance do a forward roll at end of bar!
- 255—(a) Later kick up from bar facing outward—When off balance lift one hand and swing round facing bars; (b) Maintain grasp!

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- 256—*Hip Swing Up, Using Legs.*—(a) Raise the hips over imaginary bar between hands—Hook heels under bar; (b) Pull with legs and push with hands to straddle seat!
- Variation.*—Same, without using legs.
- 257—*Reverse Kip.*—(a) Bring feet to kip position, swing backward; (b) Drop and shoot feet over bar on first swing; (c) Pull with straight arms and change hands over end of bars.
- 258—*Drop to Upper Arm Kip.*—(a) Arms slightly bent when dropping—Feet over the head; (b) Shoot feet out and down—Pull with arms—Keep elbows locked!
- 259—*Front Somersault above Bar to Upper Arm Hang.*—(a) Obtain maximum swing—Lift hips; (b) On backward swing lift hips up and forward—Push with arms and duck head; (c) Land on upper arms and regasp!





260—*Back Somersault Over Bar to Upper Arm Hang.*—(a) Start from hand balance—Lean forward and let body swing down; (b) Body swings upward—Push with straight arms as body rises; (c) Somersault—Arms to side—Body arched—Head back; (d) Hands and arms ready for landing—Body arched—Head back!

SAFETY HINT.—Use safety belt at first.

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Dismounts

261—*Single Leg Cut Off, Forward, and Backward, Right and Left Leg.*—(a) Swing from shoulders—Lean on opposite arms—Cut left over bar and cut late; (b) Land on balls of feet!

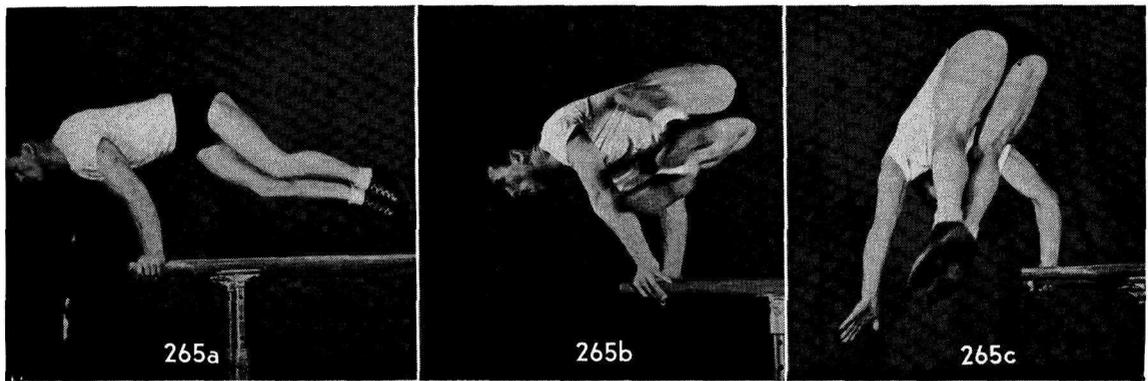
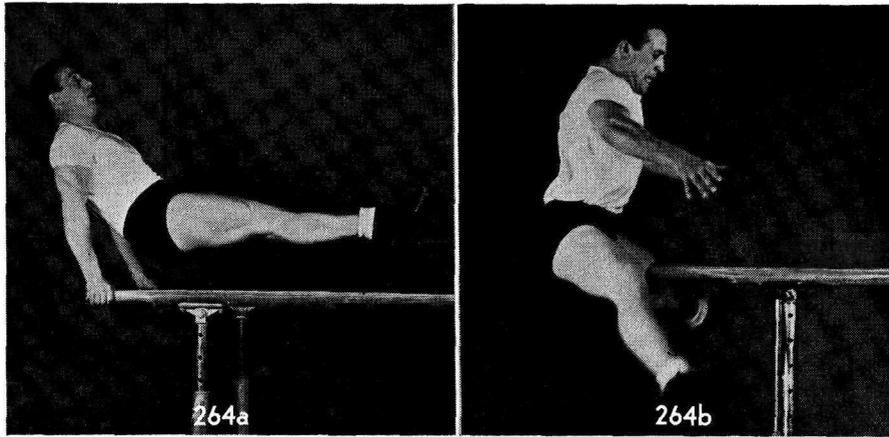
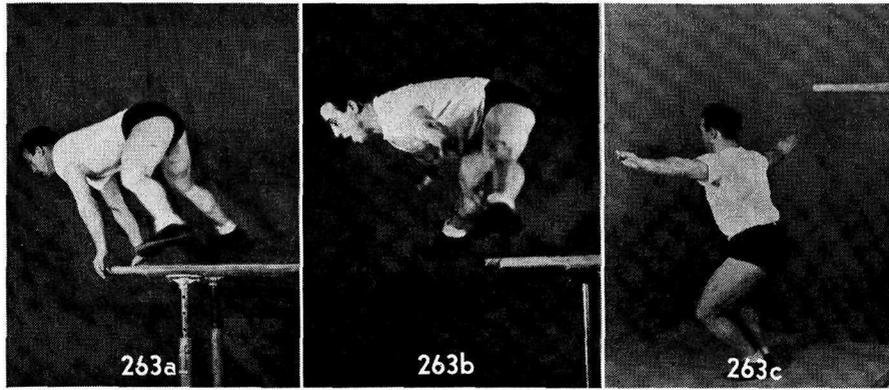
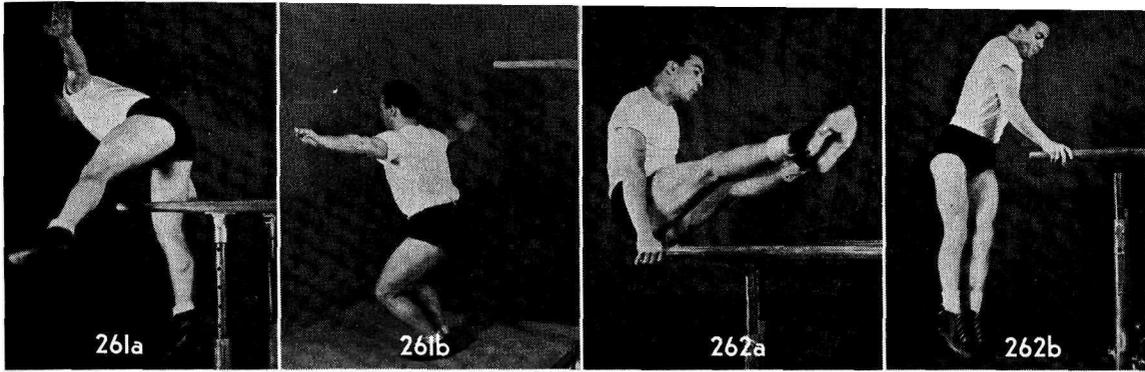
Variation.—Same backward.

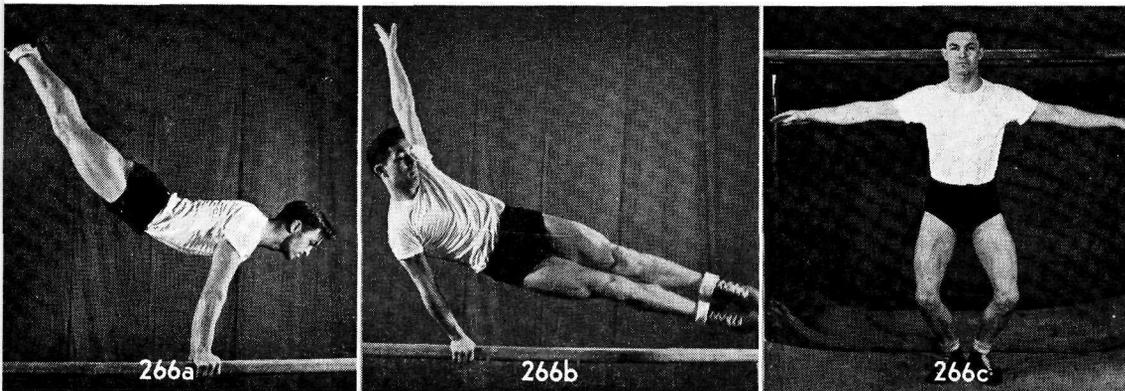
262—*Double Leg Cut Off, Backward.*—(a) Jump and reach to support first—Swing feet over one bar; (b) Push with hands—Cut legs horizontally over bar—Regrasp bars!

263—*Straddle Forward to Mat.*—(a) From support—Swing backward—Hips high and be off balance forward before you cut legs; (b) Cut legs over bars—Push up with straight arms—Head up—Dismount; (c) Land on balls of feet!

264—*Straddle Backward to Mat.*—(a) From support—Swing forward—Cut legs over bars—Lean slightly backward as you push with straight arms; (b) Bend slightly forward on dismount—Regrasp after cutting!

265—*Double Leg Cut Off, Forward.*—(a) Swing backward and bring legs over one bar; (b) Hips high—Lean on supporting arm; (c) Push with hands—Cut legs over one bar!





266—*Side or Flank Vault, Left or Right.*—(a) Swing from shoulders; (b) At end of forward swing push with right or left hand—Raise feet up high; (c) Turn body sideward—Lean on supporting arm—Head up, body arched—Land rearways!

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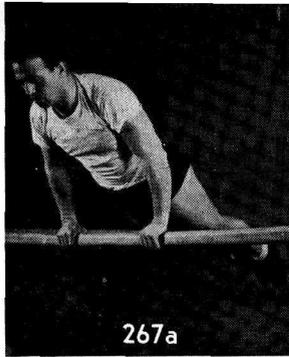
267—*Squat Vault Dismount from the Thighs.*—(a) Push off hands and thighs—Lift feet up and back; (b) Feet together—Pull knees through hands—Pull thighs to chest—Hips high—Push hard with hands—Lift head—Land rearways!

268—*Front Vault Dismount, Left or Right.*—(a) Swing from shoulders—On back swing push body sideward; (b) Reach for opposite bar—Body arched; (c) Regrasp bar for balance!

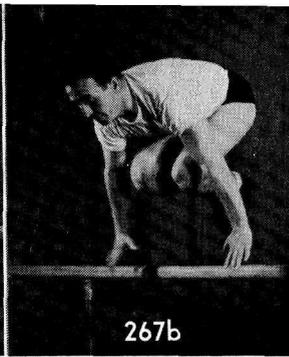
269—*Rear Vault Dismount, Left or Right.*—(a) Swing from shoulders—On forward swing push body sideward; (b) Pass rearways over bar—Regrasp opposite bar; (c) Land on balls of feet!

270—*Straddle Vault Dismount from the Thighs.*—(a) Push off hands—Lift feet up and back; (b) Spread legs—Pull feet with straight knees outside of hands—Land rearways!

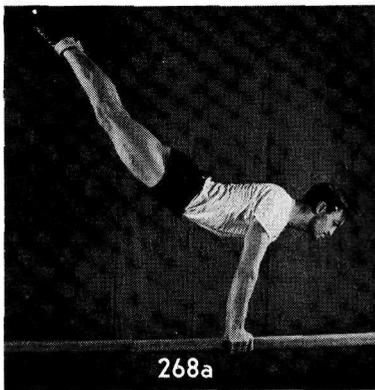
271—*Drop Off from a Back Lying Position across the Two Bars.*—(a) Lie on back, grasp far bar—Lift feet over head; (b) Drop feet to mat—Let go of grasp just before feet touch mat!



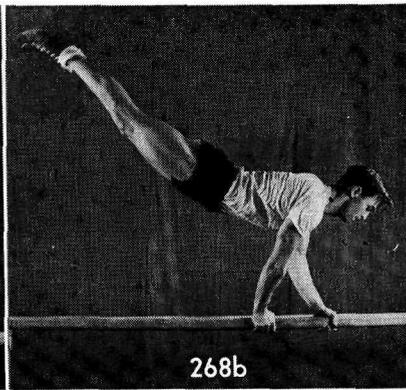
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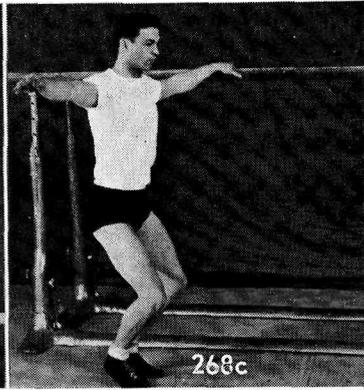
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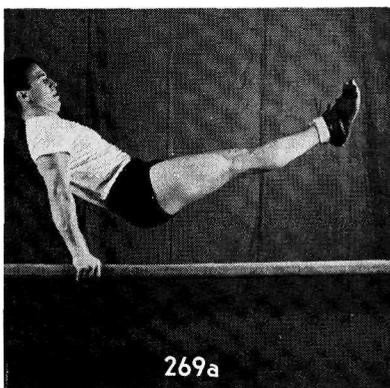
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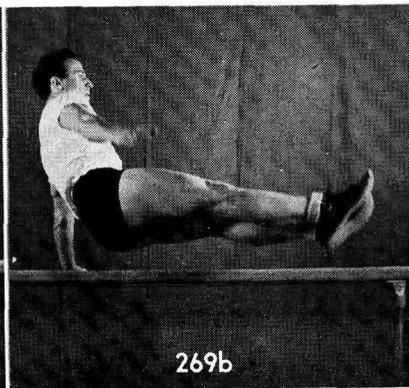
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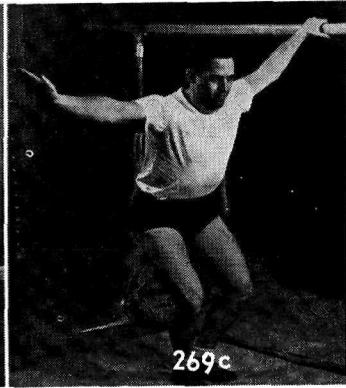
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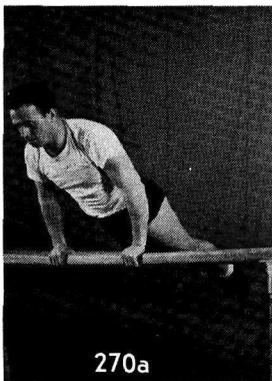
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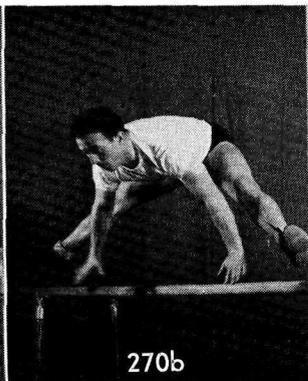
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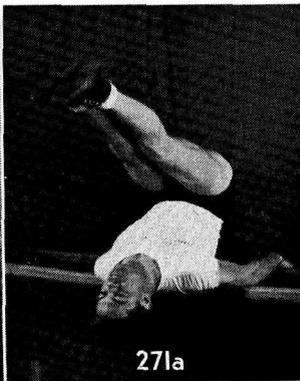
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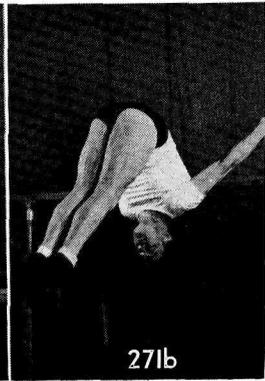
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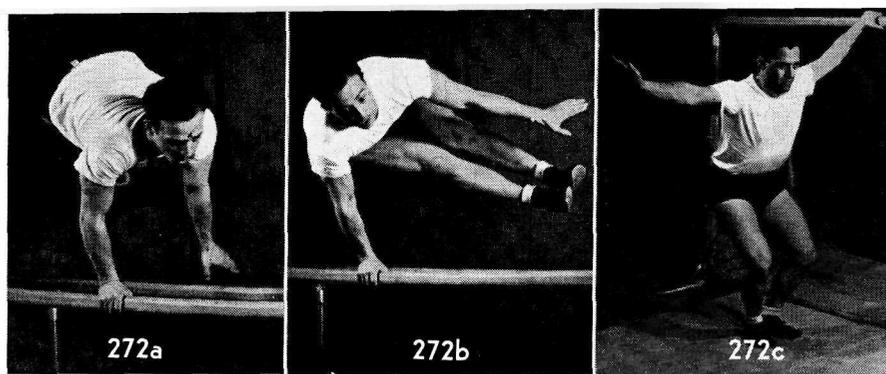
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271a



271b



272—*Double Rear Dismount*.—(a) On back swing lean on supporting arm; (b) Cut legs under opposite hand and over both bars; (c) Regrasp bar—Land standing crossways!

SAFETY HINTS.—Spotters should be in position so that the performer may be well off balance. The arm should also be braced by the spotter. Pull performer sideward to clear bar if necessary.

Suggestions for Advanced Stunts on Parallel Bars

Front somersault to a support—Back somersault to a straight arm support—“Peach Basket” to upper arm hang—“Peach Basket” to support—“Peach Basket” or under bar somersault to regrasp, arm straight—Under bar somersault or “Peach Basket” to glide kip—Pirouette ordinary to glide kip—Pirouette (reverse)—Flying kip to upper arm hang—Flying kip to support.

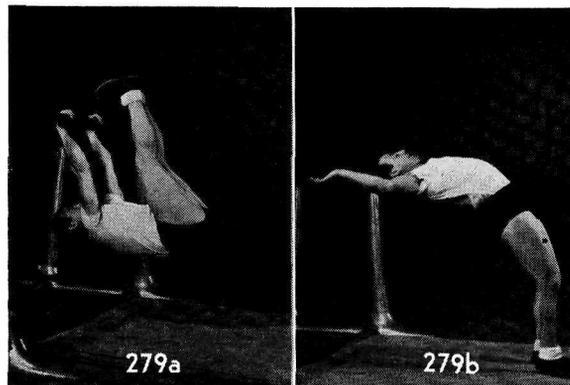
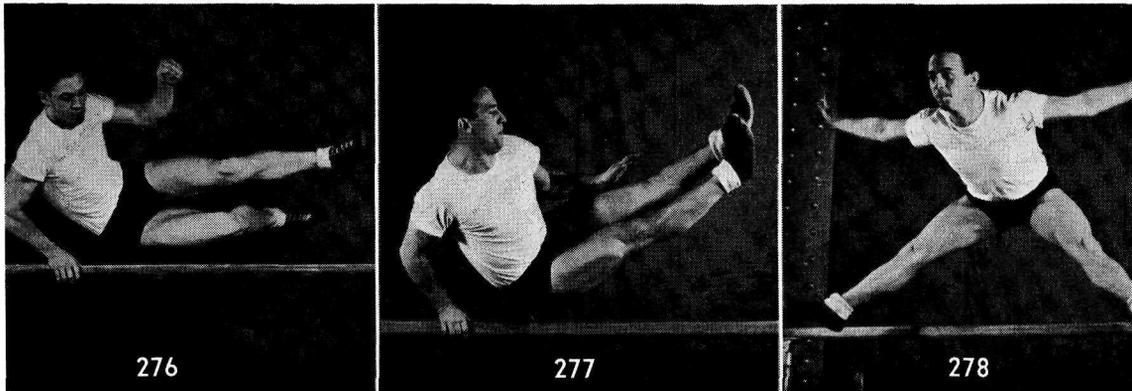
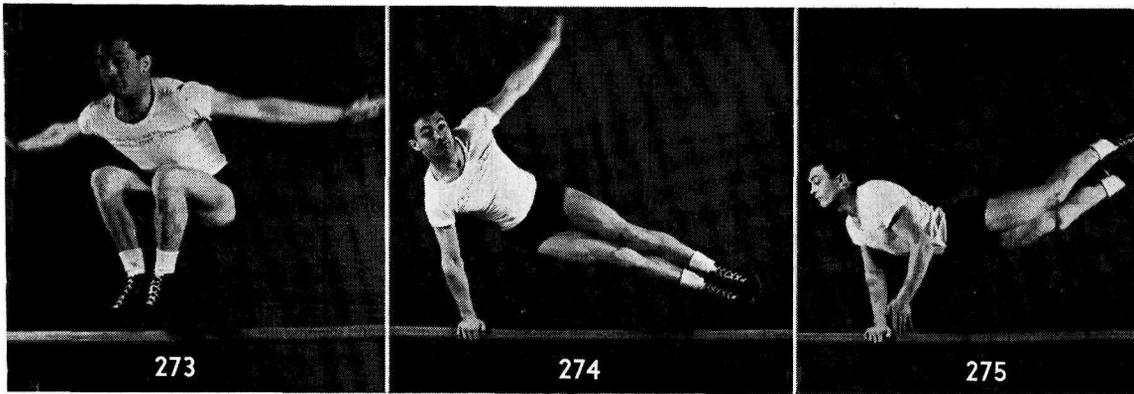
Dismounts: Hand balance, cut offs—Squat vault dismount from a hand balance—Straddle vault dismount from hand balance at end—Straddle vault dismount from a hand balance from side—Triple rear dismount—Double front or pirouette dismount—Front over bar dismount—Front over bar dismount with twist—Back over bar dismount—Front over bar dismount with twist—Hand balance flyaway dismount from end of bar.

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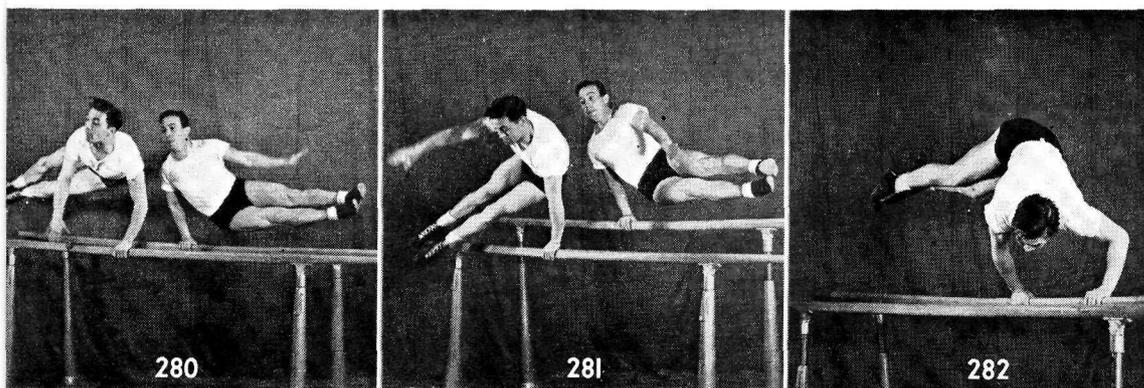
SIDE PARALLELS

One Bar Removed, Other Bar at Lowest Height

- 273—*Squat Vault*.—Pull and push with hands—Bend knees to chest—Head up!
- 274—*Flank Vault*.—Lean on opposite arm—Raise legs high—Body parallel to deck—Keep facing forward—Trunk and legs in a straight line!
- 275—*Front Vault*.—Lean on opposite arm—Turn body on supporting arm—Feet up high—Arch back—Head back!
- 276—*Fencer’s Vault*.—Lean on supporting arm—Kick one leg first—Follow by body in flank position!
- 277—*Rear Vault*.—Jump almost to support—Bring feet over in flank position—Reach back with arm as feet go over bars—Keep hips low!
- 278—*Straddle Vault*.—Jump almost to support—Straddle legs—Push off hands—Keep head up—Legs straight!



279—*Short Underswing Dismount.*—(a) Jump—Bring feet to bars; (b) Shoot feet up and out—Pull with arms straight!
SAFETY HINT.—Be sure to be spotted properly!
Variations.—Raise bar until class reaches limit.



Two Bars, Same Height

Vault over one bar at a time. Start at lowest height.

- 280—*Rear Vault* Right over Near Bar; Rear Vault Right over Far Bar.*—Lean on supporting arm—Head up—Land on balls of feet—Work in rhythm!
Variations.—Rear Vault Left over Near Bar; Rear Vault Left over Far Bar—(Same as above vault except left)
 Alternate, Rear Vaults Right and Left.
 Flank Vault Right over Near Bar; Flank Vault Right over Far Bar.
 Alternate, Flank Vaults Right and Left.
 Front Vault Right over Near Bar; Front Vault Right over Far Bar.
 Alternate, Front Vaults Right and Left.
 Straddle over Near Bar; Straddle over Far Bar.

Two Bars, Bars at Different Heights

- 281—*Vault over One Bar at a Time.*—Work in rhythm—Do not hesitate!
 Repeat preceding Vaults using bars at Different Heights.

Two Bars, Same Height

- 282—(*Vault over Both Bars*) *Front Vault, Right or Left.*—Coordinate the pull of arms with spring—Hips as high as possible—Push hard from bars!

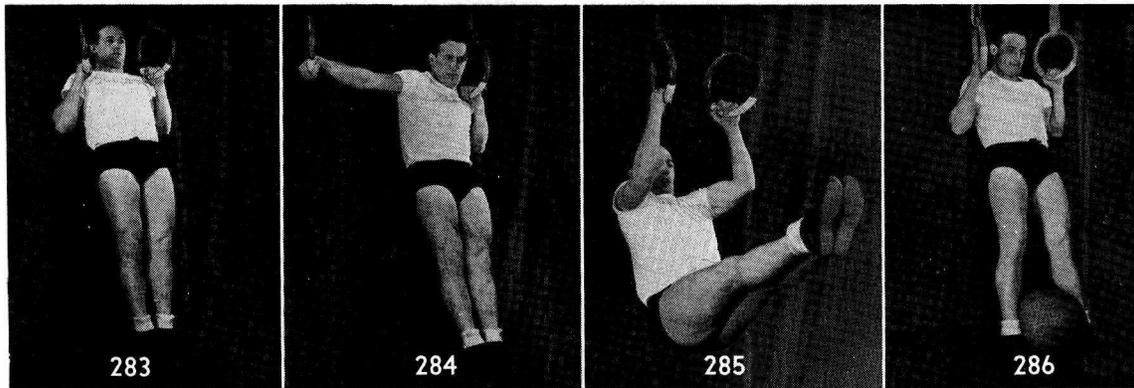
Two Bars, Different Heights

(*Vault over Both Bars*) *Front Vault Right or Left.*

*Two Bars, Same Height, Using Springboard (With or Without Mats**)*

* See preceding vaults for cues.

** See Elephant, pages 158-163.



RINGS

Still Rings

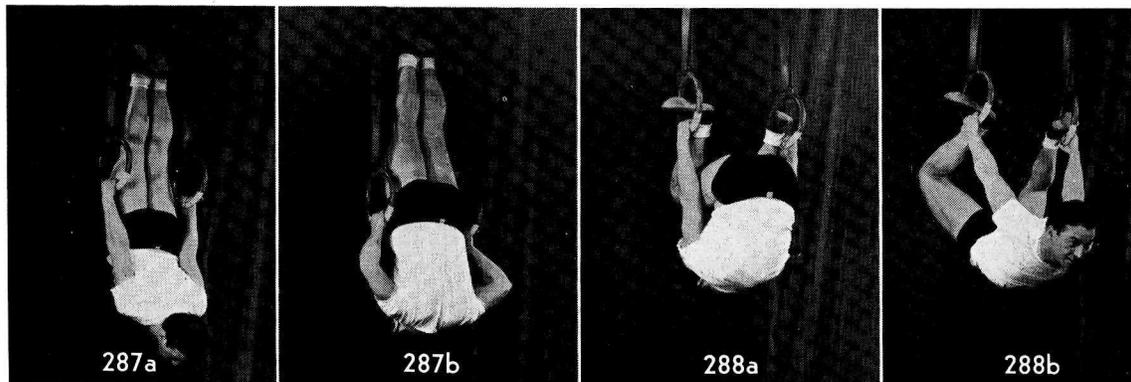
283—*Chins*.—Keep a firm grip—Keep rings close to chest!

284—*Chin, One Arm to Side, Alternate Arms*.—Keep rings close to chest—Turn hand of extended arm downward!

285—*Chins, Legs in Half Lever*.—Keep legs parallel to deck—Lean back while chinning!

286—*Chins, Holding Medicine Ball*.—Hold ball between insteps!

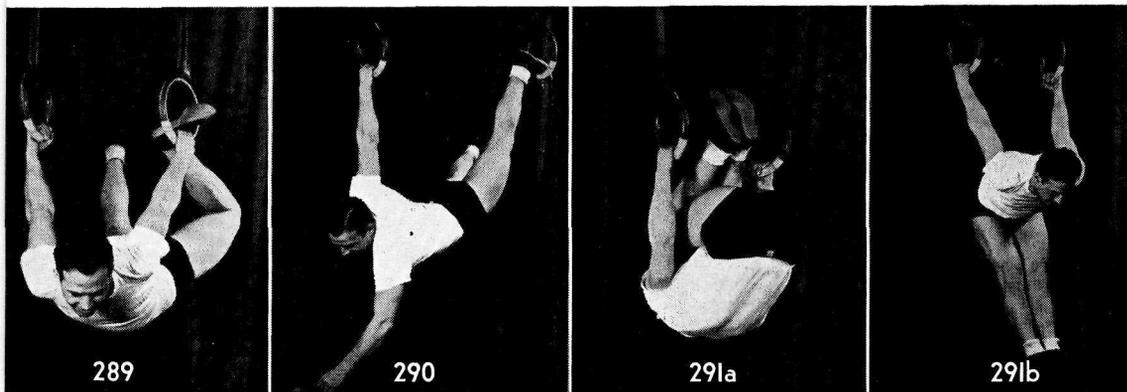
Variations.—Chin, Hold One Wrist—Half-Lever with Medicine Ball.



287—*Inverted Hang*.—(a) Body arched—Head back—Feet together—Keep rings close to sides; (b) Feet together—Head forward—Look at toes and pull!

Variation.—Pull-ups in Inverted Hang Position.

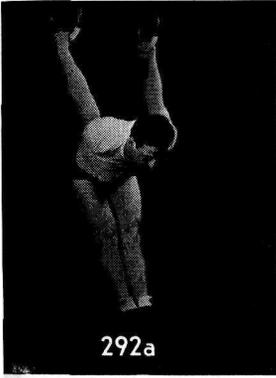
288—*Bird's Nest*.—(a) Hook toes; (b) Arch back—Head up!



- 289—*Bird's Nest, One Foot.*—Grip firmly—Hook toe!
 290—*Bird's Nest, One Foot, One Arm.*—Arch back—Head up!
 291—*Skin the Cat.*—(a) Legs through arms—Chin first to help lift the legs;
 (b) Reach down as far as possible—Head up!
Variations—Combine with chins.

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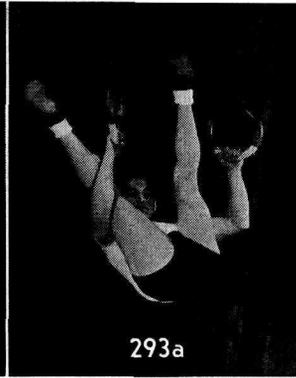
- 292—*Monkey Hang.*—(a) *Skin the Cat*—Feet all the way down before letting go of hand; (b) Grip tightly—Complete a full turn before regrasping!
- 293—*Single Leg Cut Off, Right and Left Leg.*—(a) Pull up with arms—Keep eyes on rings; (b) Bring leg downward, regrasp—Shift weight toward hand that holds the ring!
- 294—*Double Leg Cut Off, Backward.*—(a) Swing legs up—Hold on until feet are over the head; (b) Head back—Eyes open—Shoulders back; (c) Land on balls of feet!
- 295—SAFETY HINTS.—Spotting—Support under shoulder—Do trick from a bent arm hang!
- 296—*Dislocate.*—(a) Kip position; (b) Kick legs up and back; (c) Head back—Turn arms outward; (d) Pull up on arms to take shock!
- 297—SAFETY HINTS.—Use Roll to land on at first!
- 298—*Method of Spotting.*—(a) Push up under shoulders as the arms are extended sideward; (b) Tackle around waist to prevent the breaking of the grasp!



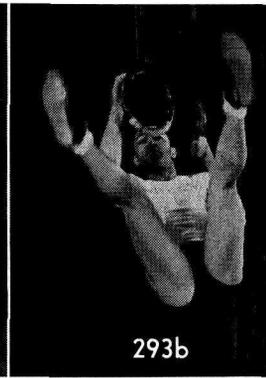
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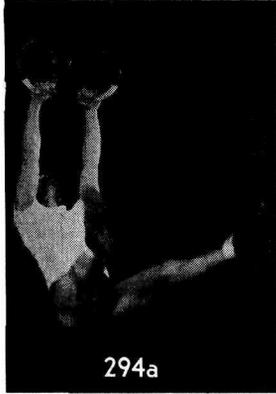
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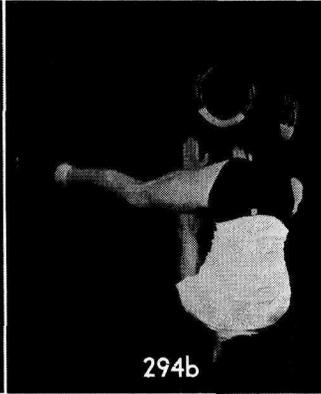
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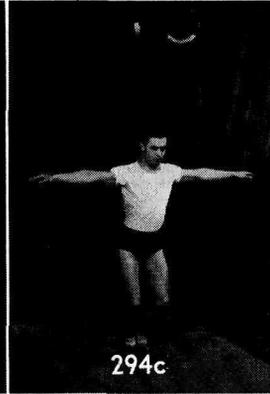
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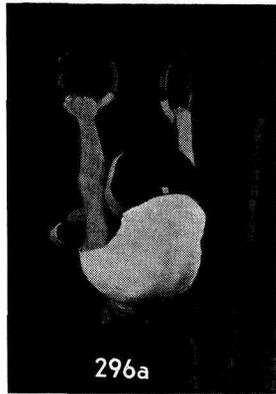
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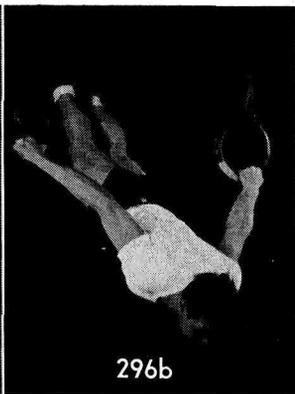
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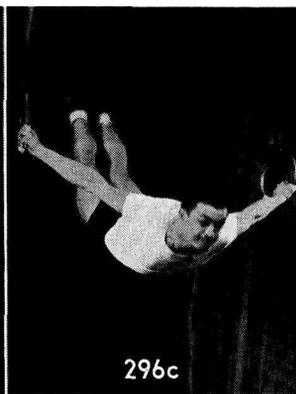
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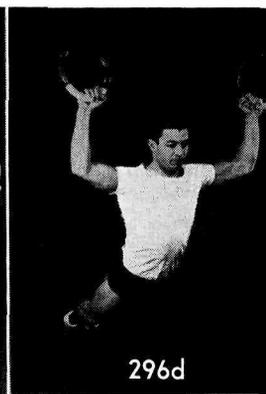
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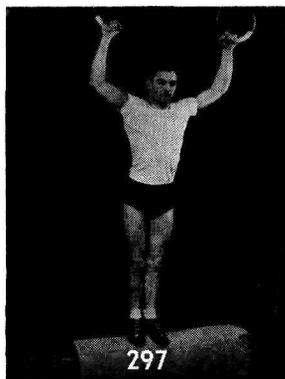
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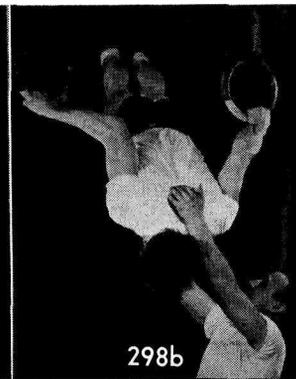
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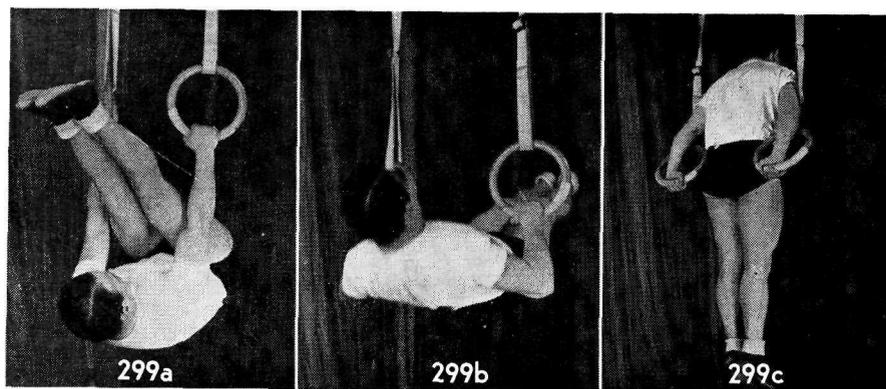
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298a



298b



299—*Kip*.—(a) Kip position; (b) Kick legs out and downward, pull with arms close to hips; (c) Rings behind back—Keep body arched!

The reverse kip is done by kicking the legs up the ropes, lifting the head and pulling hard with the arms.

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300—*Muscle Up* (Pull up both hands leading).—(a) Hang—Get false or over grip; (b) Pull quickly and lean forward to push up—Keep elbows close together—Flex legs slightly when pulling up; (c) Raise elbows as legs swing back; (d) Rings in back—Body arched!

301—*Teaching Procedure*.—Use roll first.

302—*Shoulder Balance*.—Keep shoulders in rings and balance with elbows—Keep body arched—Head up and back—Toes pointed!

303—*Hand Balance*.—Head up—Keep body arched—Press elbows against straps!

Suggestions for Advanced Stunts on Still Rings

Roll Kip—Shoulder Balance, Roll Forward and Roll Back to Shoulder Balance—Hand Balance—Reverse Kip to Shoulder Balance—Back Lever—Front Lever—Crucifix—Inlocate.

Flying Rings

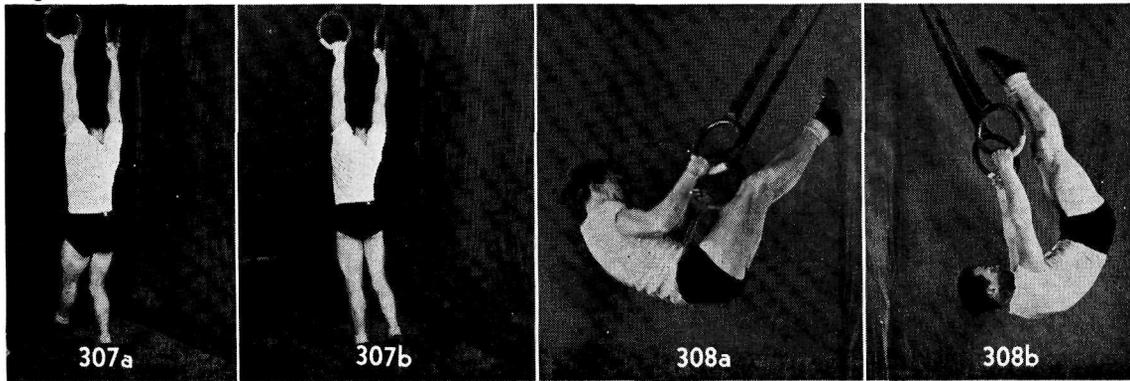
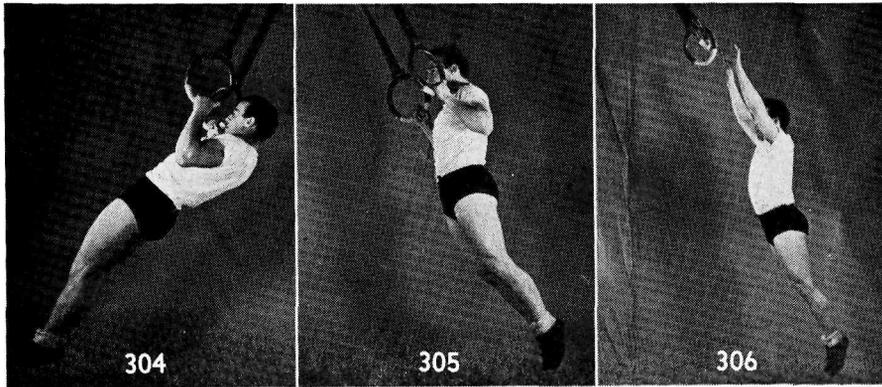
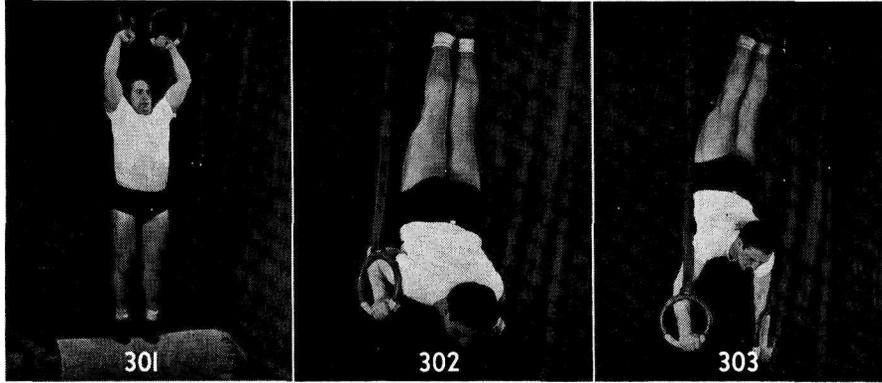
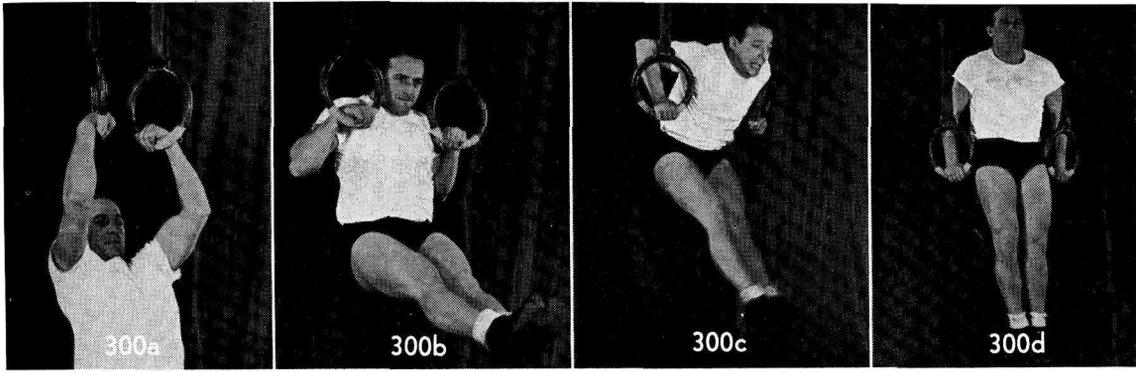
304—*Chins (Front Swing)*.—Chin at front end of swing!

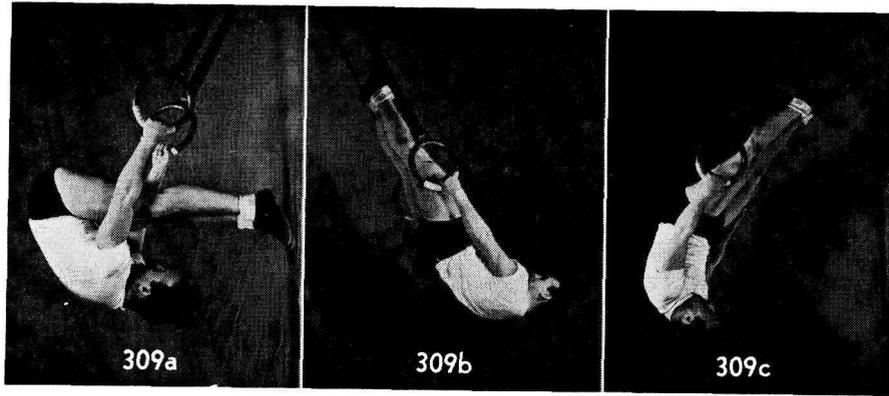
305—*(Back Swing)*.—Hold bent arm hang for entire swing!

306—*Dismount (Back Swing)*.—Dismount at back end of swing—Pull toward rings to get back in vertical position—Drop straight—Land, balls of feet!

307—*Methods of Swinging: Beat from Floor*.—(a) Rings should be adjusted so that the performer can touch floor with toes—Keep feet in a feet stride position—Reach forward for mat—Double tap with feet—Extend body forward as high as possible; (b) Reach backward for mat—Double tap with feet—Extend body backward as high as possible!

308—*Kip Position on Back, Stretch on Front Swing*.—(a) Arms straight—Pull up in a kip position on backward swing; (b) Reach upward and outward with feet on front swing—Swing from shoulders!





- 309—*Pump in a Kip Position.*—(a) Kip position; (b) Kick up with feet along the same arc as backward swing—Pull with shoulders; (c) Kick up with feet along the same arc as forward swing—Pull with shoulders!

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310—*Other Methods of Getting a Swing.*—Push straight—Run through!

311—Pull legs back—Throw them forward into regular beat!

312—Spring slightly from platform!

Method of Getting Beat to Execute Stunts:

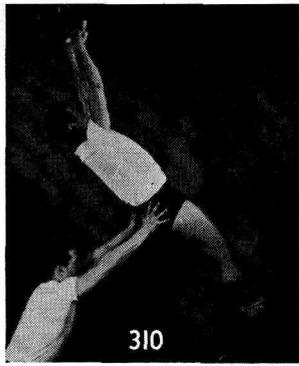
313—*Center Beat, Showing forward, back, forward on forward swing.*—(a) Forward swing (read left to right) "Forward, back, forward with legs"—Swing from shoulders; (b) Reach for center—Feet move forward, back, forward on front swing; (c) Feet go back; (d) Feet forward!
Backward Swing (read right to left) "Back, forward, back with legs"—Feet move back, forward, back on back swing!

314—*Early Beat.*—If beat is ahead of the center on either forward or backward swing!

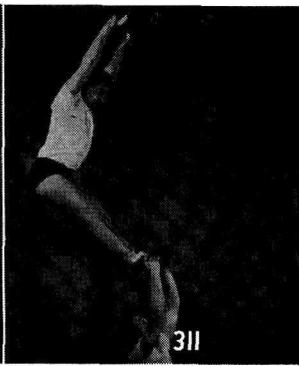
315—*Late Beat.*—If beat is beyond the center on either forward or backward swing!

316—*Bird's Nest.*—(a) Roll in on front swing—Use late beat to lift legs; (b) Arch back—Hook insteps to rings—Lift head; (c) Roll out again on front swing!

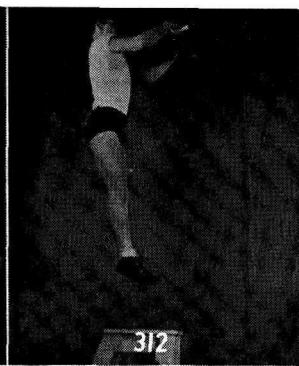
317—*SAFETY HINTS.*—Spotting—Three spotters: One on front end of swing—one in middle—and one at back end of swing—Be careful that the insteps do not slip out of rings!



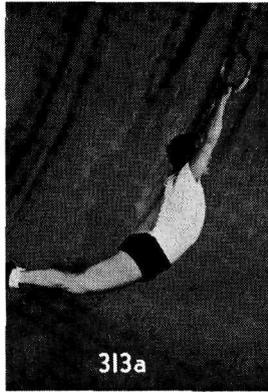
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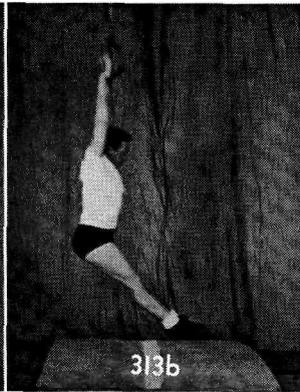
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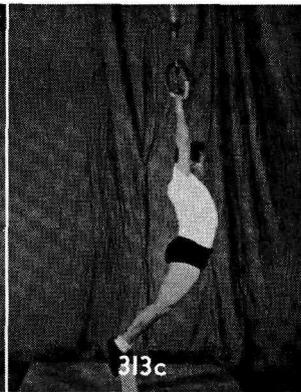
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313a



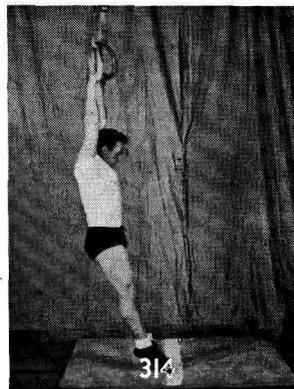
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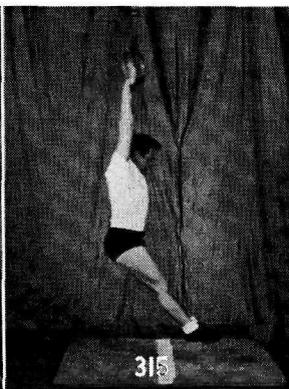
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313d



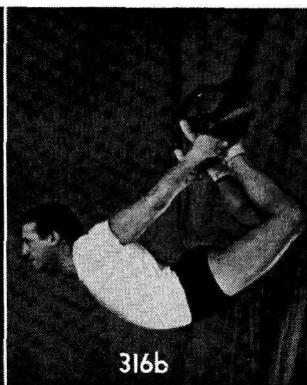
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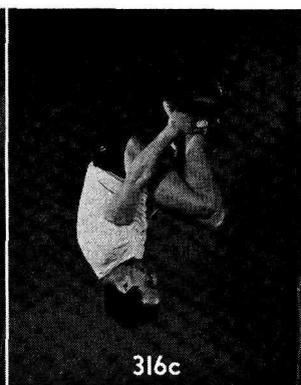
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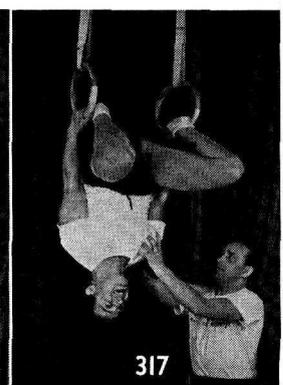
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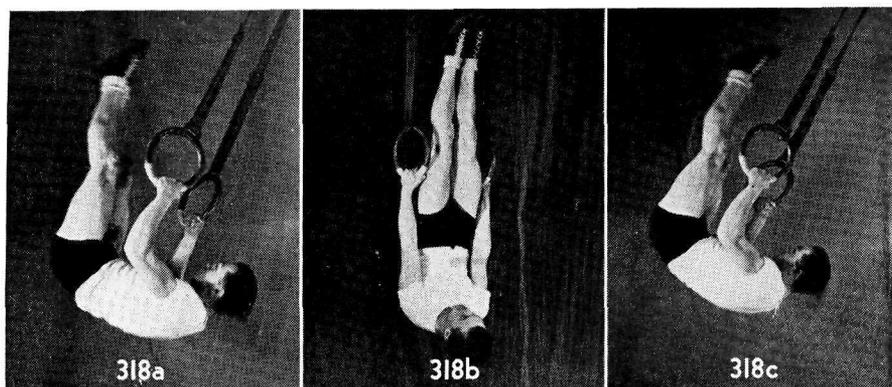
316b



316c



317



318—*Inverted Hang*.—(a) Use late beat; (b) Hold rings close to sides; (c) Roll out to a hang on front swing!

SAFETY HINTS.—Do not swing too high—Spot closely!

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319—*Single Leg Cut at Rear End of Swing*.—(a) Cut late—Do not push ring away; (b) Regrasp ring!

320—*Single Leg Cut at Front End of Swing*.—(a) Cut at dead point of front swing—Do not push ring away; (b) Regrasp ring!

321—*Double Leg Cut on Front or Back Swing*.—(a) Wait for dead point of swing; (b) Roll legs down on arms—Keep eyes on rings; (c) Cut at dead point of swing—Do not push ring away; (d) Regrasp ring!

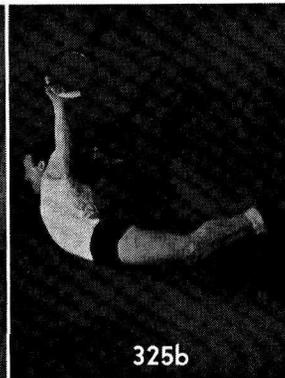
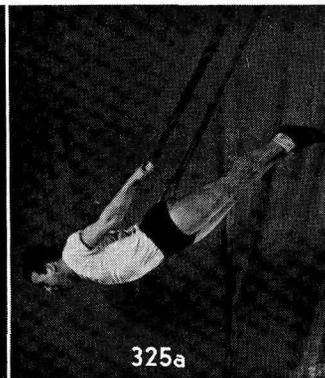
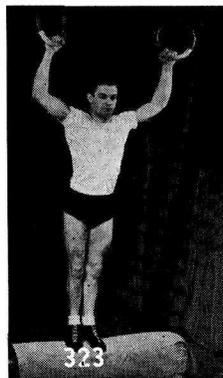
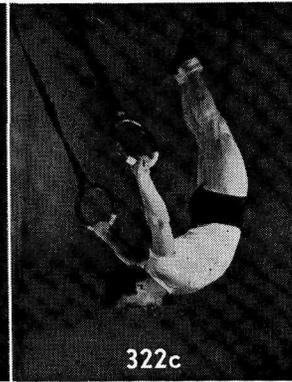
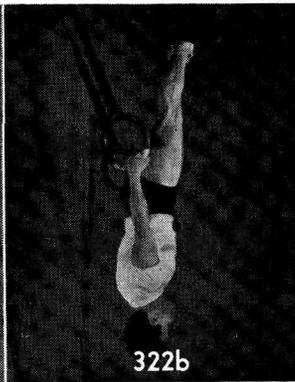
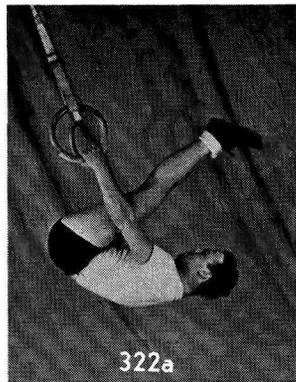
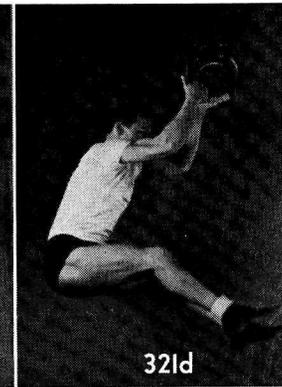
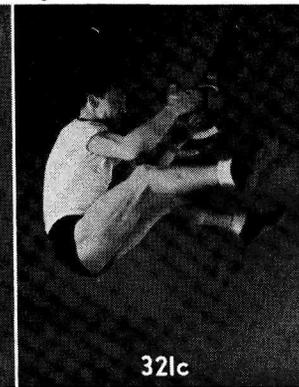
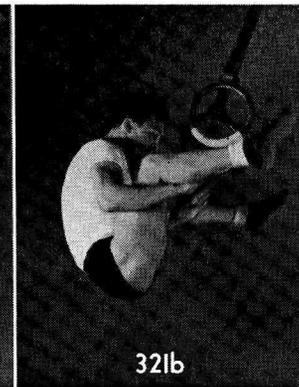
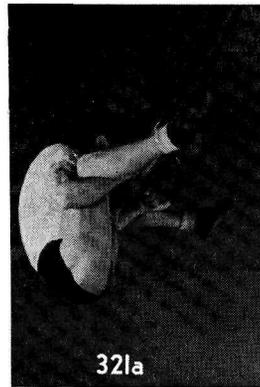
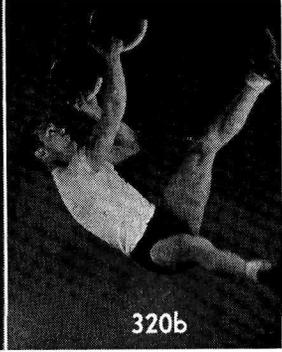
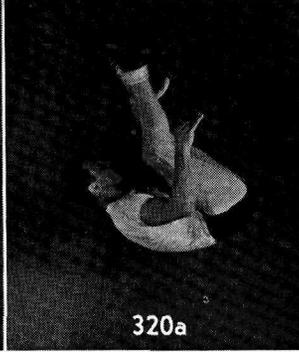
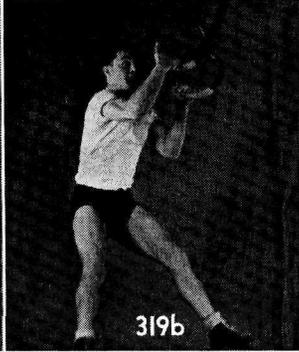
Variations.—Same as above without regraspings.

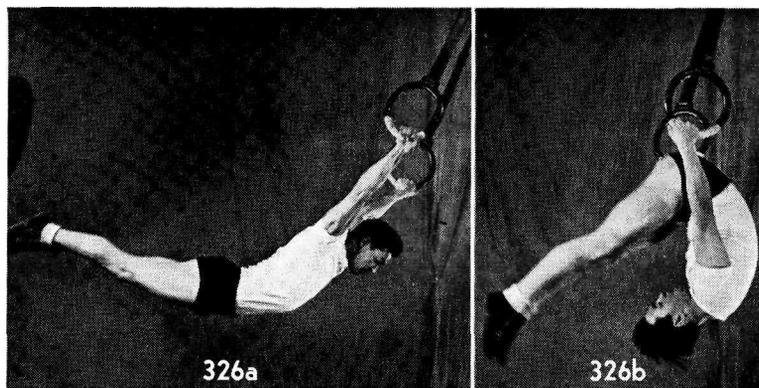
322—*Dislocate Rear End of Swing*.—(a) Wait till end of swing; (b) Kick legs up at a 45° angle—Arch the back—Lift the head—Extend arms side-ward and keep them straight; (c) Until control is gained return to a bent arm hang—Learn to keep arms straight through entire trick after control is gained!

323—SAFETY HINTS.—Work on still rings at first—Work on roll at first!

324—Push under shoulders—Tackle around waist when weight is almost at bottom to prevent grasp from being broken—Three spotters when trying this stunt on the swing!

325—*Dislocate Front End of Swing*.—(a) Go for the trick just before the end of forward swing—Don't kick hard; (b) Shoot legs out straight—Arms slightly bent—Float through the trick!





326—*Inlocate*.—(a) Use a late beat; (b) Kick high and roll forward—Arms sideward!

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327—*Kip at Front End*.—(a) Kick up and outward at dead point of swing—Legs straight; (b) Pull with straight arms—Rings in back of buttocks until control is mastered!

328—*Kip at Back End*.—(a) Do not kick too hard—Go for trick at dead point of swing; (b) Arms straight—Transfer arms to back of buttocks!

SAFETY HINT.—A beginner is more apt to slip through the rings on the back end of swing than on the front end.

329—*Front Uprise*.—(a) Get an early beat and then raise legs and pull with arms; (b) Lean forward—Bring rings down to hips; (c) Shoulders forward—Rings in back to support position!

Variations.—Drop legs from kip position and uprise on back swing—Drop legs from kip position and uprise on front swing.

330—*Front Cutaway*.—Roll high on elbows—Execute at dead point!

SAFETY HINT.—Do on Still Rings at first!

331—*Spotting, On Still Rings*.—Support under neck!

332—*Spotting, On Swinging Rings*.—Spot neck!

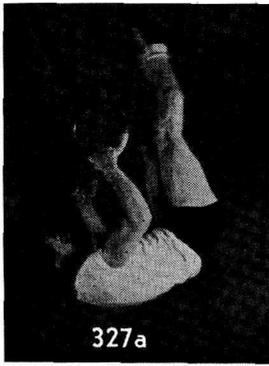
333—*Back Cutaway*.—(a) Use a late beat on front swing; (b) Pull with arms as legs are cut!

SAFETY HINT.—Do on Still Rings at first!

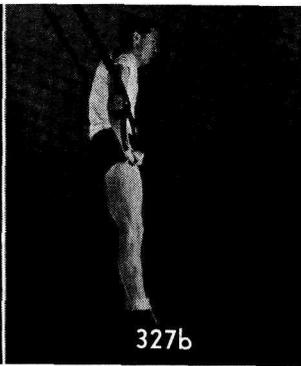
334—Support under shoulders!

Suggestions for Advanced Stunts on Flying Rings

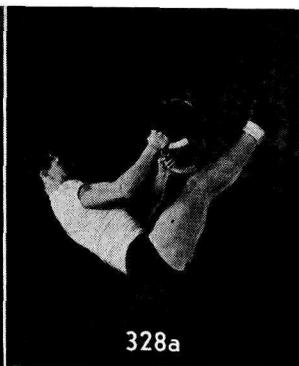
Roll, Kip, Roll—Kip, Roll, Kip—Reverse Kip at Front End of Swing—Reverse Kip at Back End of Swing—Reverse Kip with Beat (Bird-up) on Front Swing—Reverse Kip with Beat (Bird-up) on Back Swing—Drop Back from Support, Back Kip on Front Swing—Drop Back from Support, Back Kip on Back Swing—Shoulder Balance on Swing—Hand Balance on Swing—Bird-up to Shoulder Balance—Reverse Kip to Shoulder Balance—Bird-up to Hand Balance—Reverse Kip to Hand Balance—Double Leg Cut-off at Rear End of Swing and Regrasp (Cut and Catch)—Double Leg Cut-off at Front End of Swing and Regrasp (Cut and Catch)—Front Cut-off on Front End of Swing—Back Cut-off on Back End of Swing—Back Flyaway—Front Flyaway.



327a



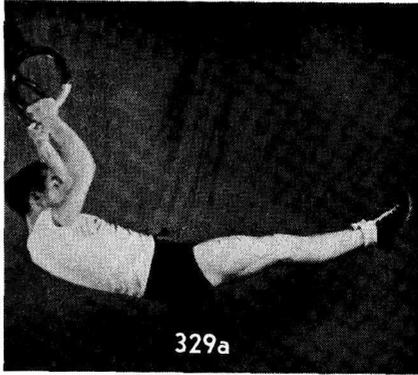
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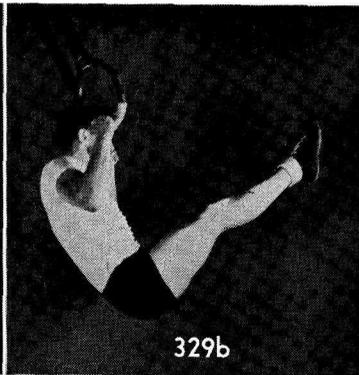
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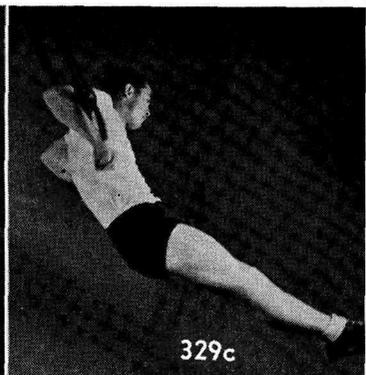
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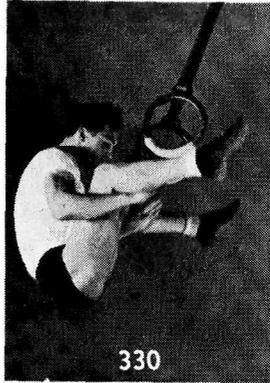
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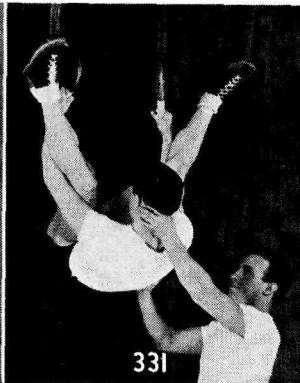
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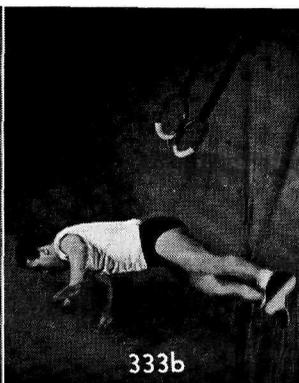
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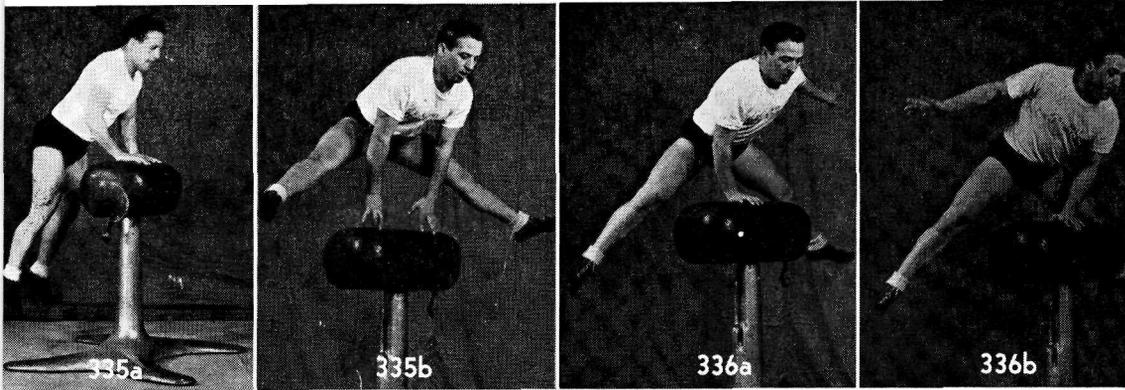
333a



333b



334



BUCK

Vaulting

General Hints.—Spring from both feet—Push hard with hands—Keep the head up!

- 335—*Straddle Vault (Both Hands).*—(a) Double foot take off; (b) Push hard with hands—Head up!
 336—*Straddle Vault.*—(a) Right Hand—Push with right hand—Head up; (b) Left Hand—Push with left hand—Head up!

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337—*Straddle Jump.*—Leap over buck—Head up—Shoulders back—Use hands and arms to get maximum height!

338—*Straddle Spur Vaults.*—Straddle Vault, Spur with Right Foot—Kick right heel to buck!

339—*Straddle Vault, Spur with Left Foot.*—Kick left heel to buck!

340—*Straddle Vault, Spur with Both Feet.*—Kick both heels to buck!

341—*Squat Vault.*—Legs between arms—Bring knees to chest—Push with hands—Head up!

Variations.—Squat Vault with Turns on Dismount—Squat Vault with Forward Rolls on Dismount—Squat Vault with Backward Rolls on Dismount—Squat Vault with Forward and Backward Rolls on Dismount.

342—*Knee Vault.*—(a) Start from kneeling position; (b) When off balance lift with arms and shoulder—Lift head upward!

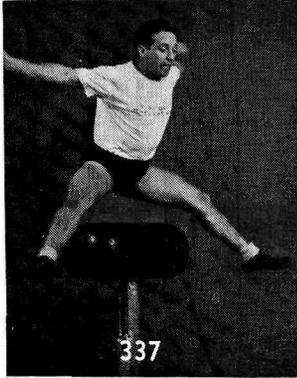
Variations.—Jump to Saddle and Dismount Forward—Jump to Saddle and Dismount Forward with Turns!

343—*Flank Vault, Right or Left.*—(a) Keep body straight—Keep legs and trunk in a straight line; (b) Supporting arm straight—Lean over on supporting arm!

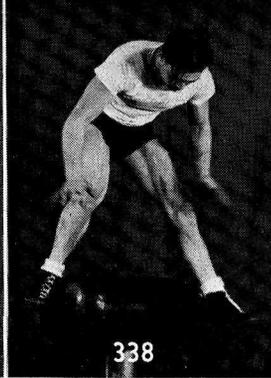
344—*Front Vault, Low.*—Double foot take-off—Arch back—Head up—Body at about a 45° angle!

345—*Front Vault, High.*—Double foot take-off—Push with arms—Arch back—Head up—Body about to a hand balance position!

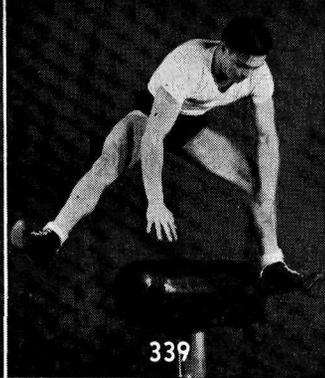
346—*Back Scissors Vault, One Hand.*—(a) Place hand on buck before twisting—Left leg goes to the right side—Swing other leg around backward; (b) Lift hips high as legs are straddled—Push with hand!



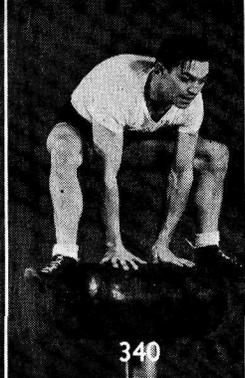
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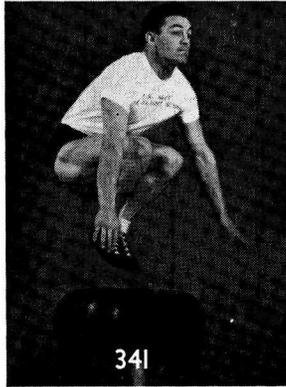
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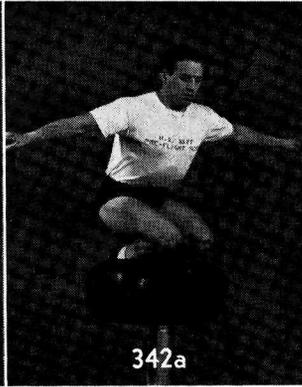
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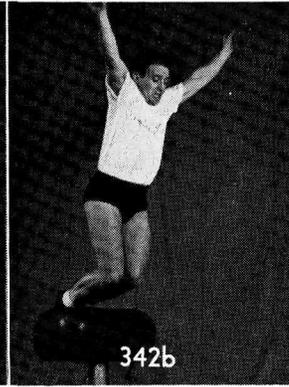
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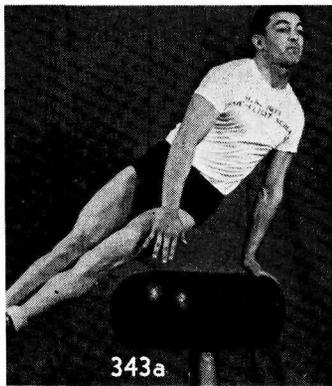
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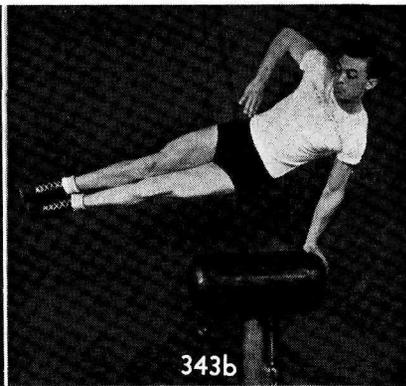
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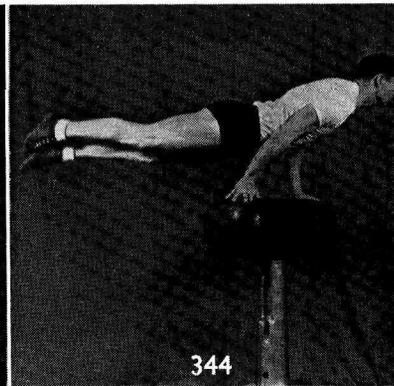
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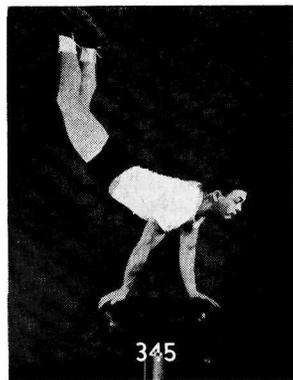
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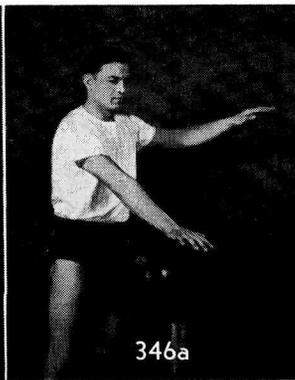
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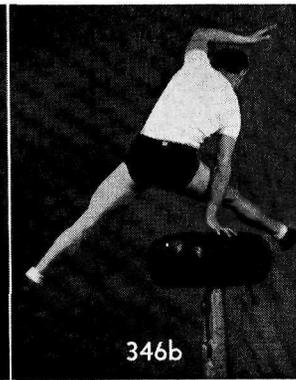
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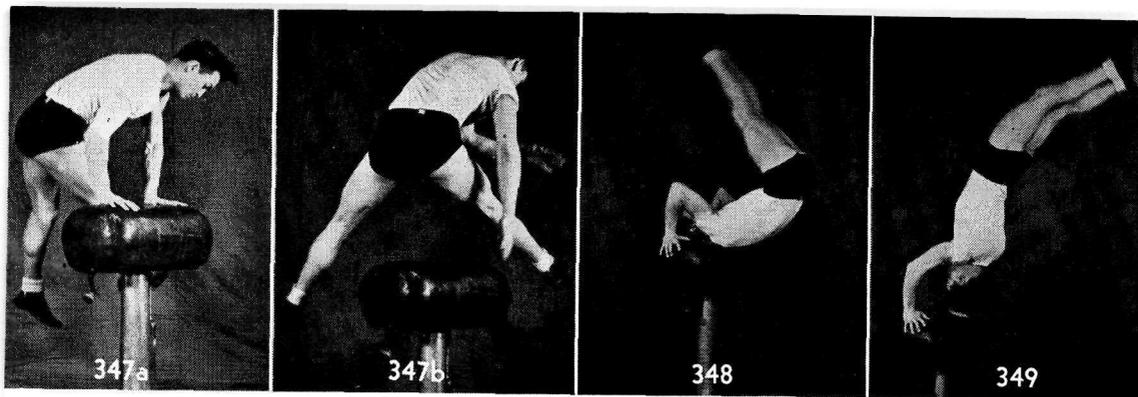
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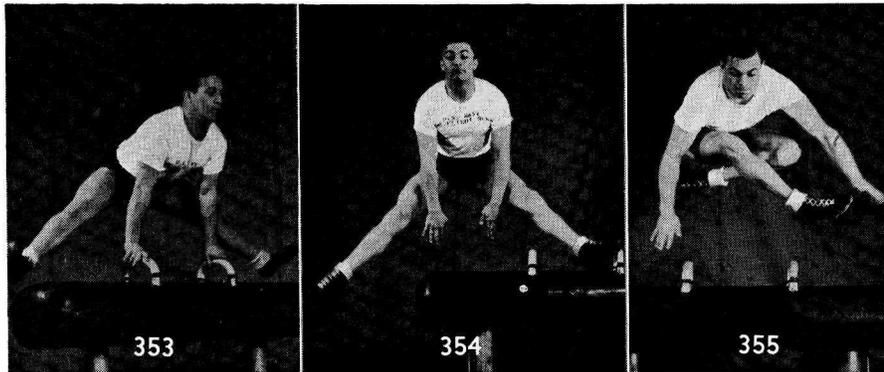
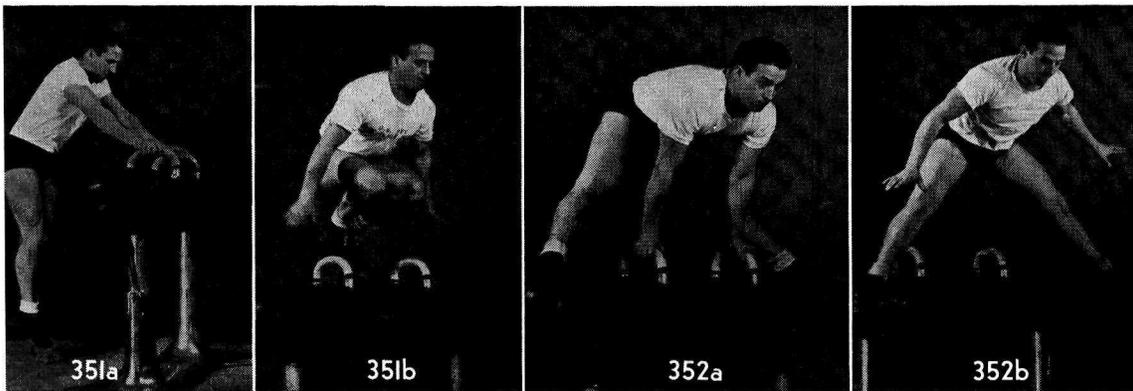
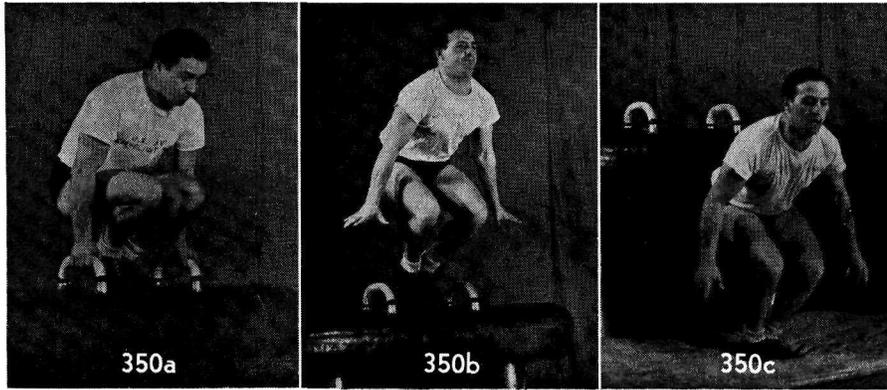
- 347—*Back Scissors Vault, Two Hands.*—(a) Place both hands on buck—Left leg goes to the right side—Swing other leg around backward; (b) Lift legs high as legs are straddled—Push with hands!
- 348—*Neckspring.*—Double foot take off—Hips high—Tuck nape of neck to horse—When hips are off balance push with hands!
- 349—*Handspring.*—Double foot take off—Extend feet upward—Get as close to momentary hand balance as possible—When off balance push with hands!
- Variations.*—Use rolled mats in line with bucks. After each vaulting stunt perform forward rolls, backward rolls or dives over the rolled mats. Rolls can also precede the vaults.

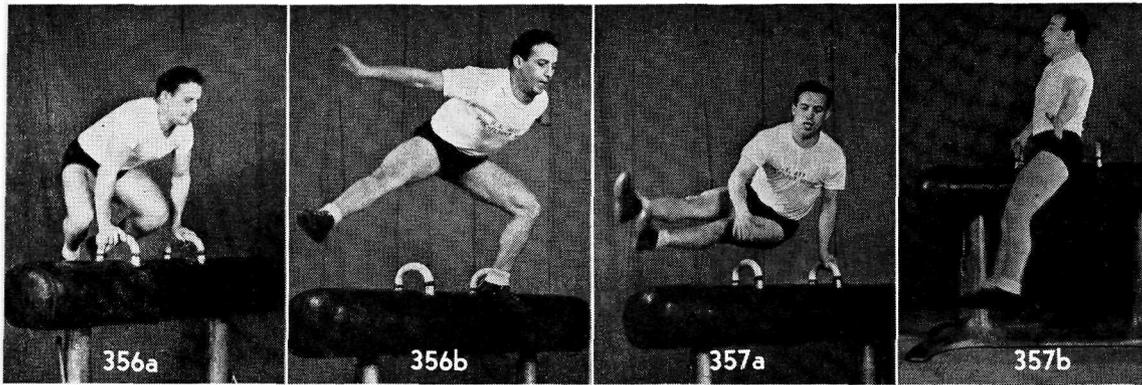
Teaching Procedure.—For large classes (50-75) teach stunts which are performed quickly, one performer immediately following another. Divide the group into equal squads (with a leader used as spotter). Use a double thickness of mats for dismounts. Demonstrate the stunt to be performed.

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SIDE HORSE

- 350—*Jump to a Squat Stand in Saddle, Dismount Forward.*—(a) Hips high—Knees to chest; (b) Release pommels and dismount forward; (c) Land on balls of feet—Flex knees in landing!
- 351—*Squat Vault.*—(a) Double foot take off; (b) Hips high—Knees to chest—Push hard with hands to lift head—Head high—Release pommels while momentum is moving upward!
- Variations.*—Same with Turns on Dismounts—Same with Forward and Backward Rolls after Dismounts—Same with Turns on Dismounts followed by Rolls—Squat Vault over Neck—Squat Vault over Croup—Squat Vault over Pommels.
- 352—*Jump to a Straddle Stand in Saddle, Dismount Forward.*—(a) Hips high—Legs straight; (b) Release pommels, lift head and dismount forward!
- 353—*Straddle Vault.*—Double foot take off—Hips high—Legs straight—Push hard with hands to lift head—Head high—Release pommels while momentum is moving upward!
- Variations.*—Straddle Vault over Neck—Straddle Vault over Croup (Plate 354)—Straddle Vault in Saddle over Pommels—Straddle Vault Holding One Pommel—Cross Straddle Vault (Plate 355).

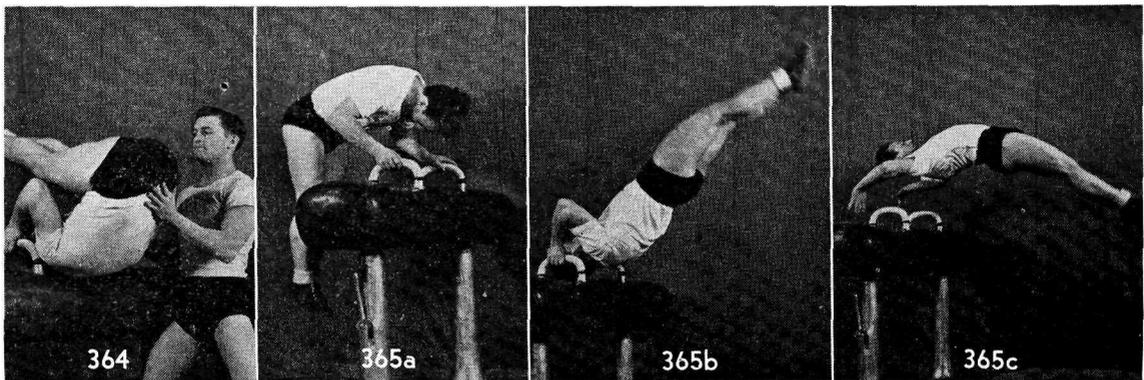
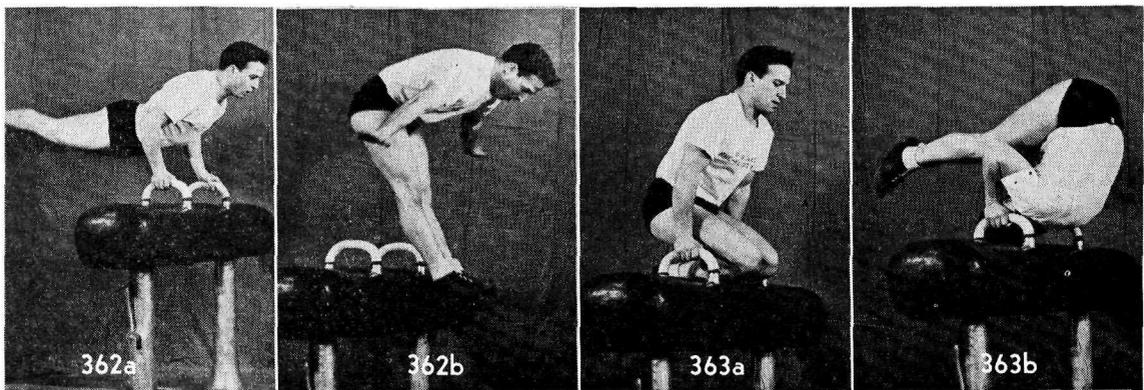
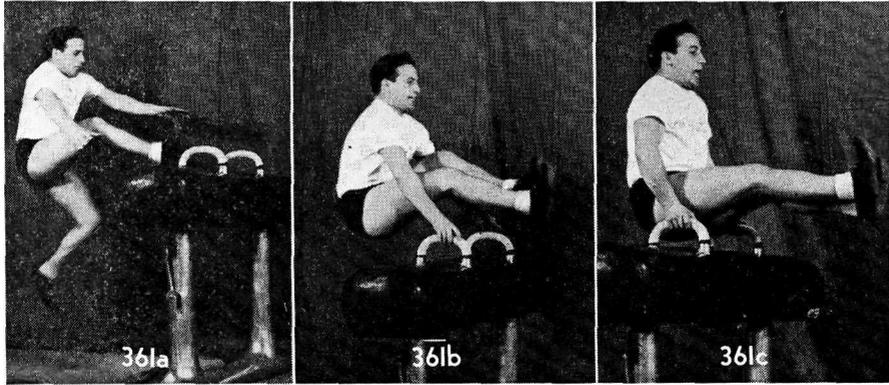
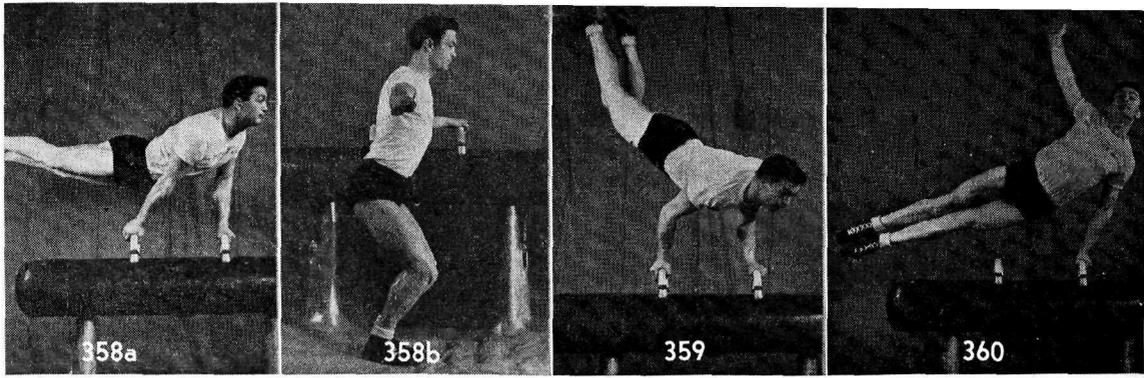


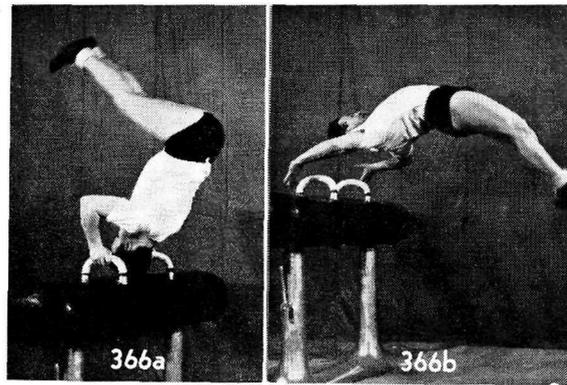


- 356—*Wolf Vault*.—(a) Double foot take off—Do a straddle vault over one pommel at first; (b) One leg in squat position, the other in straddle position—Push hard with hands—Release pommels while momentum is moving upward!
- 357—*Rear Vault*.—(a) Double foot take off—Keep the hips low—Back of body passes over apparatus; (b) Turn inward—Regrasp!
Variation.—Rear vault with half turn.

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- 358—*Low Front Vault*.—(a) Double foot take off—Keep arms as straight as possible—Head back—Arch back—Body about 45° angle—Front of body passes over apparatus; (b) Hold on with supporting hand—Face sideward on dismount!
- 359—*High Front Vault*.—Double foot take off—Keep arms as straight as possible—Head back—Arch back—Body almost in a hand balance position—Front of body passes over apparatus—Regrasp—Face side on dismount!
- 360—*Flank Vault (Right or Left)*.—Double foot take off—Lean on supporting arm—Keep supporting arm straight—Trunk and legs in a straight line!
- 361—*Thief Vault (Left to Right)*.—(a) The vault is right if the take off is from right foot—Lead with feet—Lean backward; (b) Reach backward with hands to grasp pommels; (c) Push off from pommels to dismount!
- 362—*Stoop Vault*.—(a) Hips high—Legs between the hands—Knees straight; (b) Better form may be obtained by getting a beat from the arched back!
- 363—*Jump to a Kneeling Position on Saddle, Neck Spring Turn Over*.—(a) Kneel on saddle—Lift hips high and tuck nape of neck in saddle—Flex arms; (b) When hips go off balance push with arms!
 SAFETY HINT.—When hips go off balance push with arms!
- 364—*Spotting*.—Hold wrist to prevent overspin and use other hand for support under shoulders!
- 365—*Neck Spring*.—(a) Double foot take off—Hips high—Duck head—Flex arms; (b) When off balance push with arms; (c) Follow through with push off—Arch back vigorously—Land on balls of feet!
 SAFETY HINT.—Spot closely!





366—*Head Spring*.—(a) Double foot take off—Head on saddle; (b) When off balance push with arms!

SAFETY HINT.—Spot closely!

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367—*Hand Spring*.—(a) Flex arms slightly—Head back—Kick legs when hips are past the head; (b) Push with arms—Head tucked slightly!

368—SAFETY HINTS.—Spotting, support shoulders—Use two, one on each side!

Other activities for side horse vaulting include: *reverse scissor vault* (Plate No. 347); *sheep* and *swan vaults* (Plate Nos. 401, 402); *swan dive* over the horse and catch by one or more spotters (Plate No. 423). In the swan dive catch, the spotter catches at chest, not at hips.

Suggestions for More Advanced Stunts

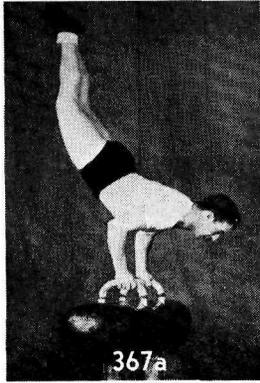
Neck Spring with Half Twist—Neck Spring with Full Twist—Front Somersault Over.

Support Stunts

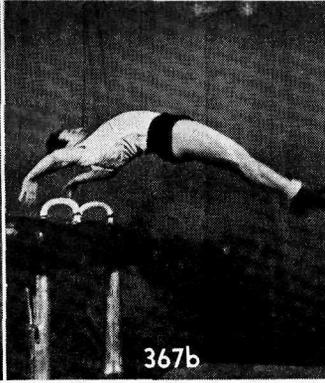
369—*From Front Support: Left or Right Leg Half Circle Right or Left*.—(a) Start from front support position; (b) Swing leg over side of horse and across pommel—Shift weight away from swinging leg to supporting arm—Swing from shoulders; (c) Regrasp pommel—Keep legs straight!

370—*Left or Right Leg Half Circle Right or Left*.—(a) Start from front support position; (b) Swing leg in front of other leg and over side of horse and across pommel—Shift weight away from swinging leg to supporting arm—Swing from shoulders; (c) Regrasp pommel—Keep legs straight!

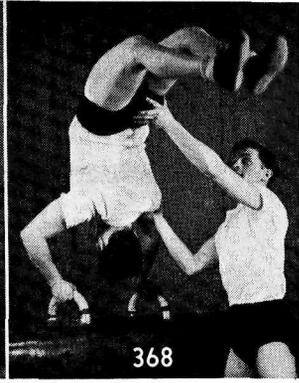
371—*From Back Support: Left or Right Leg Half Circle Left or Right*.—(a) Start from back support; (b) Swing leg back over the horse and across pommel—Shift weight away from swinging leg to supporting arm—Swing from shoulders; (c) Regrasp pommel!



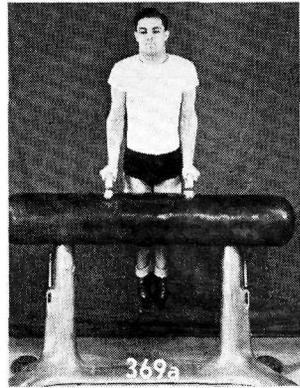
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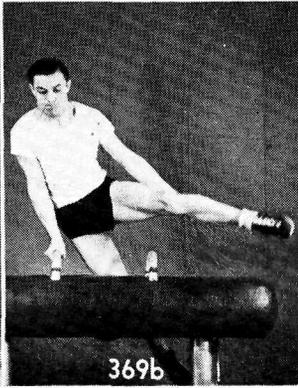
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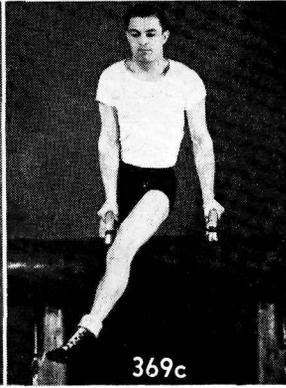
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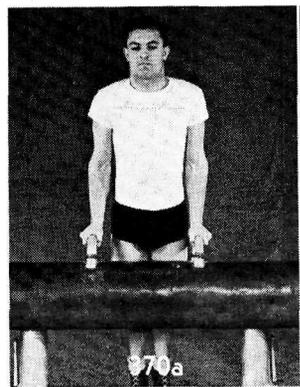
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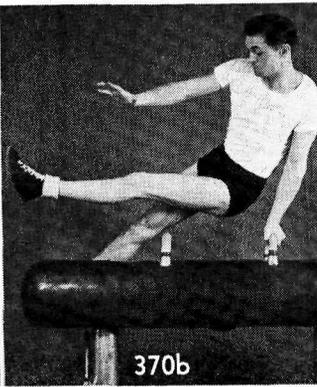
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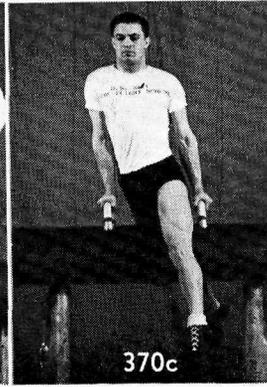
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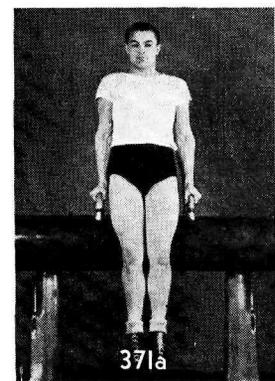
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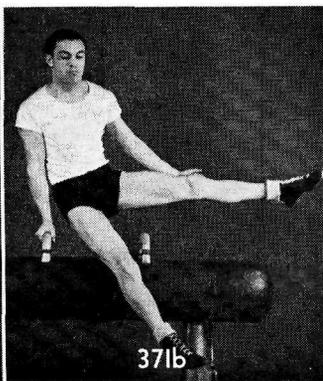
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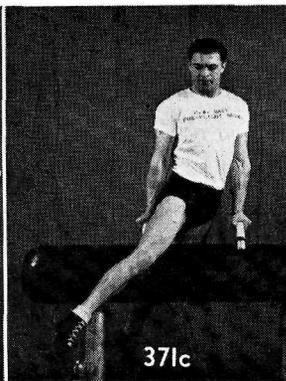
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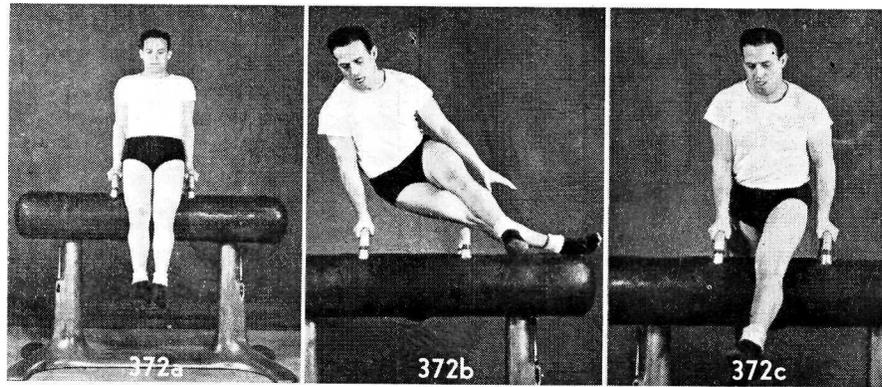
371a



371b



371c



- 372—*Left or Right Leg Half Circle Right or Left.*—(a) Start from back support; (b) Swing leg behind other leg and over horse and across pommel—Shift weight away from swinging leg to supporting arm—Swing from shoulders; (c) Regrasp pommel—Keep legs straight!

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- 373—*Shifting Balance: With Half Circle and Parallel Swings.*—(a) Start from front support—Left leg half circle right—Swing freely from shoulders and in rhythm—shift weight; (b) Lean well over on supporting arm and swing legs as high as possible; (c) Swing left leg back half circle left—Repeat whole series in rhythm!

Variations.—Various combinations of the above leg circles.

- 374—*From Front Support: Left or Right Leg Full Circle Right or Left.*—(a) Start from front support—Left leg full circle right; (b) Swing leg over side of horse and across pommel—Shift weight away from swinging leg to supporting right arm; (c) Shift weight away from swinging leg to supporting left arm; (d) Swing leg back over horse to front support—Work in rhythm!

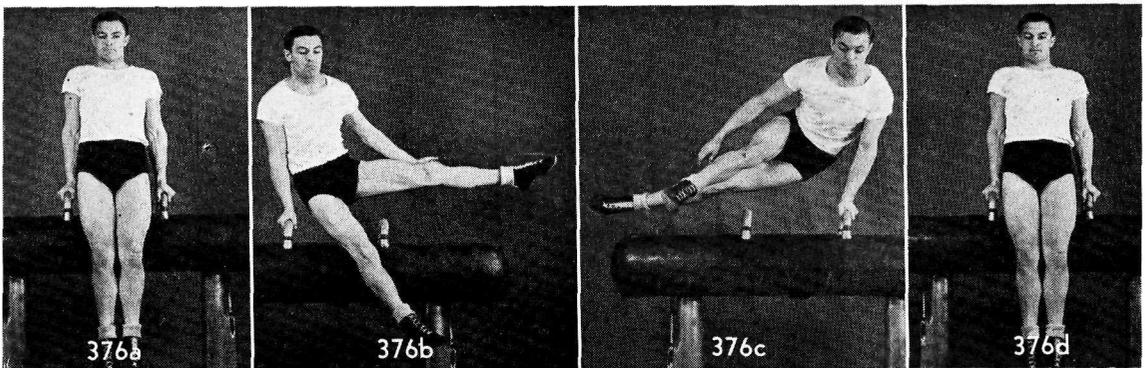
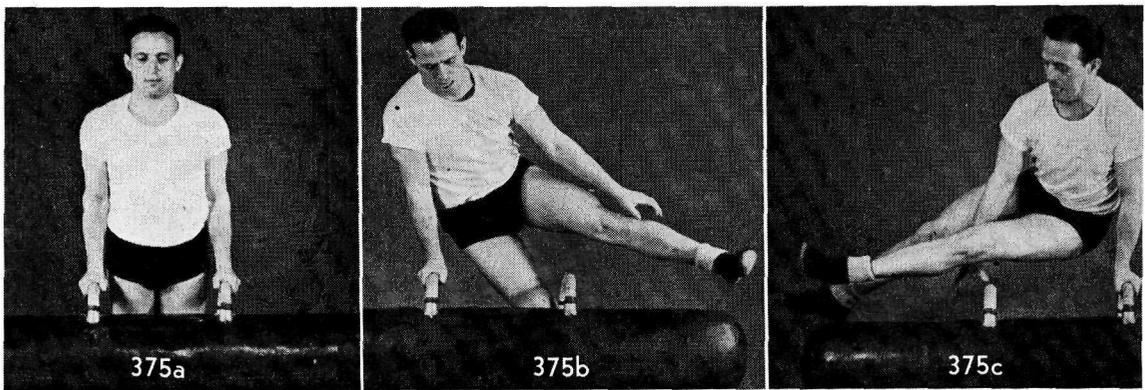
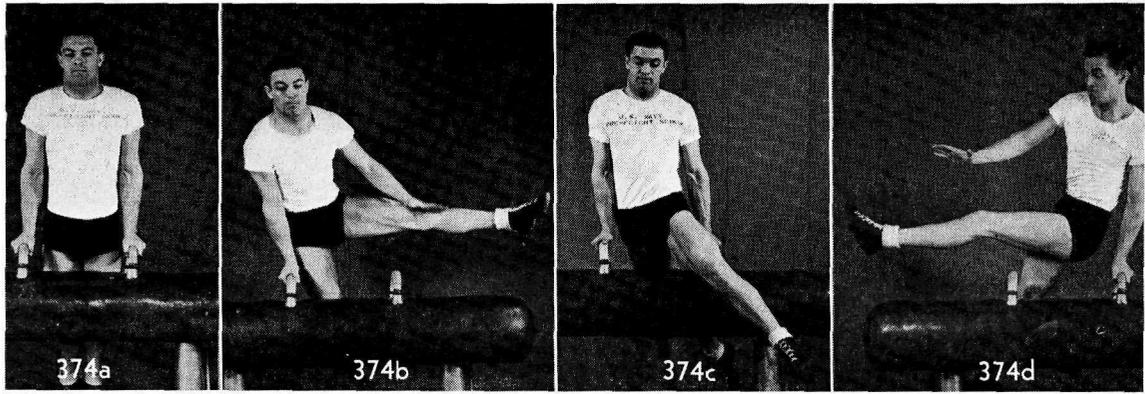
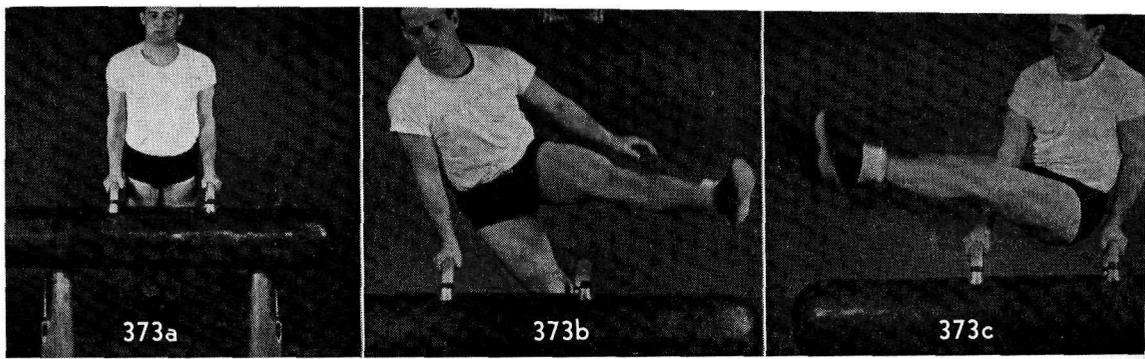
Variation.—Same with opposite leg.

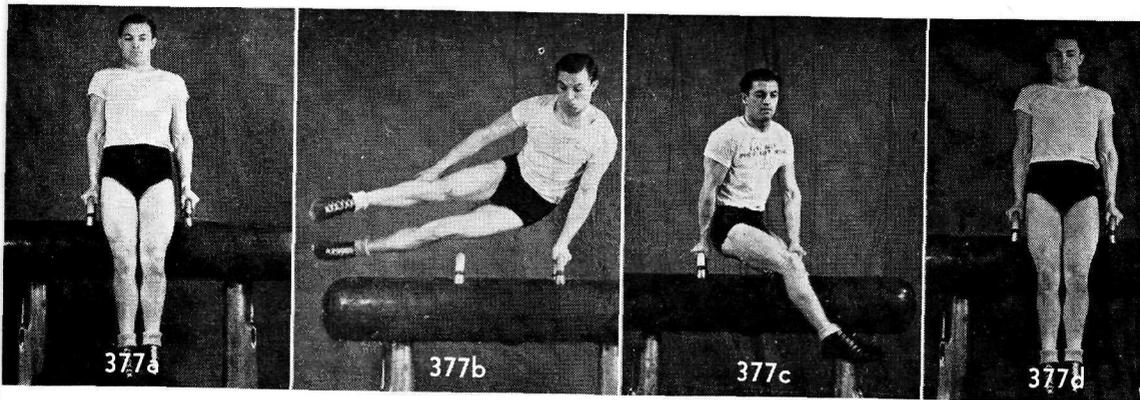
- 375—*Left or Right Leg Full Circle Left or Right.*—(a) Start from front support—Left leg full circle left; (b) Swing leg in front of other leg and over side of horse and across pommel—Shift weight away from swinging leg to supporting left arm—Swing from shoulders; (c) Shift weight away from swinging leg to supporting right arm—Swing leg back over horse to front support—Work in rhythm—Keep legs straight!

Variation.—Same with opposite leg.

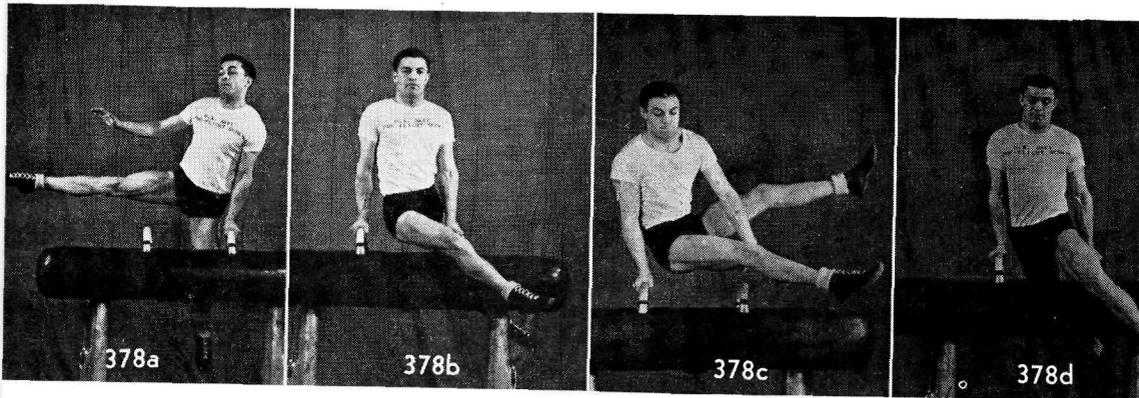
- 376—*From Back Support: Left or Right Leg Full Circle Left or Right.*—(a) Start from back support—Left leg full circle left; (b) Swing leg back over horse and across pommel—Shift weight to right arm—Swing from shoulders; (c) Shift weight to left arm—Lift left foot over horse and across pommel; (d) Return to back rest—Work in rhythm—Keep legs straight!

Variation.—Same with opposite leg.

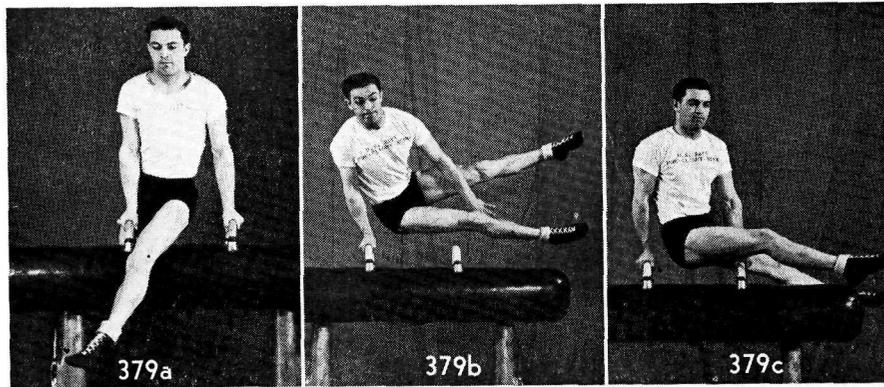




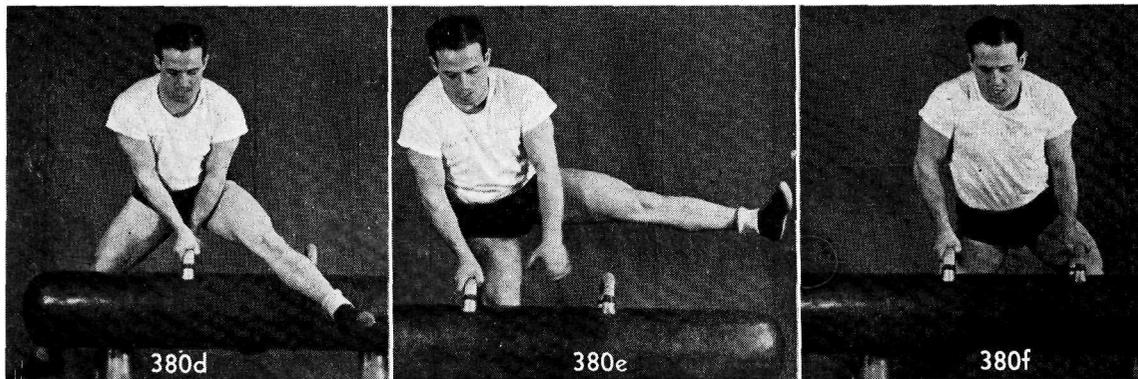
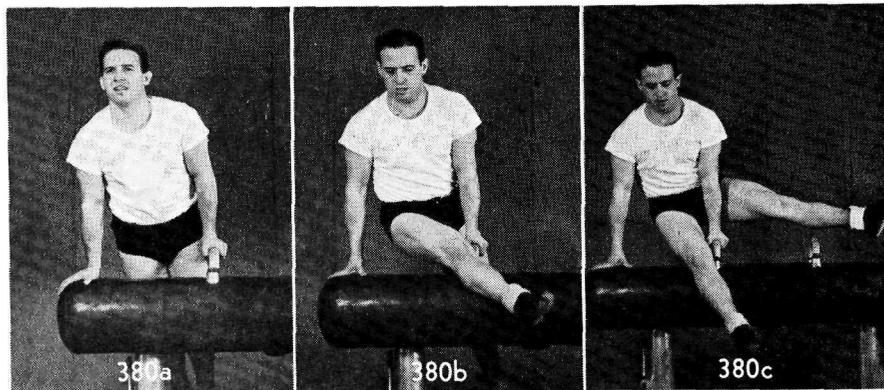
377—*Left or Right Leg Full Circle Right or Left.*—(a) Start from back support—Left leg full circle right; (b) Swing left leg behind right leg, over horse and across pommel—Shift weight to left arm—Swing from shoulders; (c) Shift weight to right arm—Swing leg over horse and across pommel; (d) Return to back rest—Work in rhythm!
Variation.—Same with opposite leg.



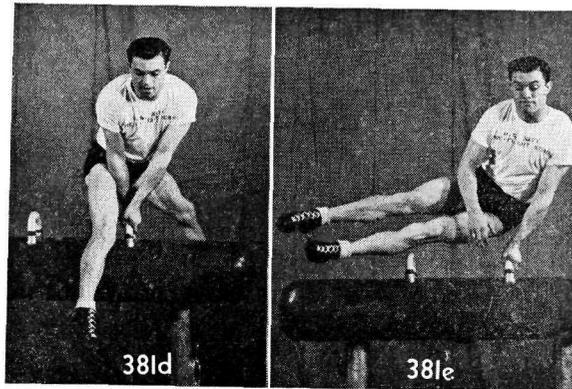
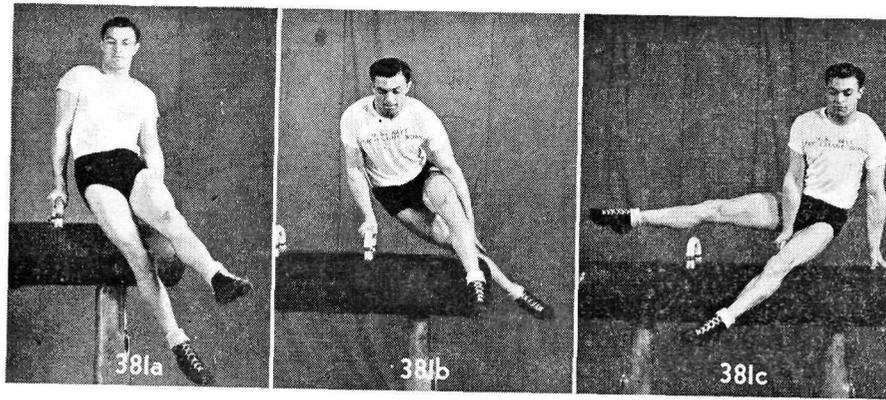
378—*Ordinary Scissors.*—(a) Jump from stand, right leg over horse, regrasp; (b) Shift weight to supporting arm—Feet high before crossing; (c) Rotate hips starting at shoulders to cross legs; (d) Regrasp pommels!
Variations.—Do same with opposite side.



379—*Reverse Scissors*.—(a) Shift weight to supporting arm—Feet high before crossing—Lean forward; (b) Rotate hips starting at shoulders to cross legs; (c) Regrasp pommels!



380—*Travel*.—(a) Jump to support on neck; (b) Right leg, half circle left; (c) Right leg, half circle left, coming outside left arm; (d) Transfer left hand to front of left pommel; (e) Right leg half circle right transferring hand to right pommel; (f) Then continue to travel!



381—*Single Leg Travel*.—(a) Back support on neck—Swing right leg full circle left; (b) Astride right arm on left pommel; (c) Left leg half circle left shifting left hand to pommel; (d) Swing left leg under right leg and over right pommel to back support—Shift the right hand; (e) Continue to travel!

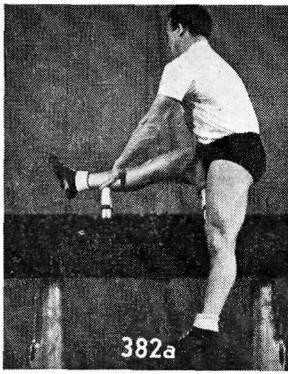
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382—*Double Rear Dismount*.—(a) Feint right; (b) Swing right leg horizontally under left pommel—Lean backward—Lean on right; (c) Swing legs backward, pivot on right hand and bring legs under left hand—Keep right arm straight!

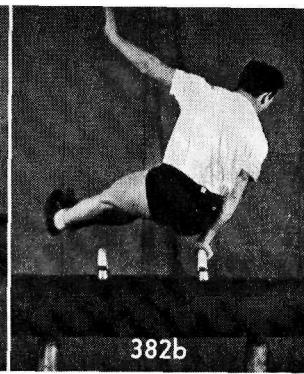
383—*Flank Circles*.—(a) Front support—Swing from shoulders; (b) Swing legs over horse; (c) Pass through back support position and continue circles!

Suggestions for Advanced Support Stunts on Side Horse

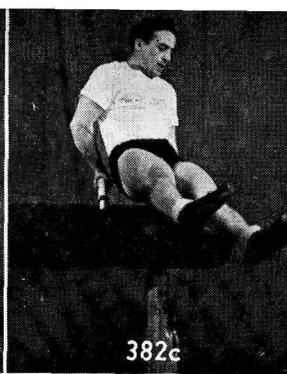
384—*Giant Hip Circles*.—(a) Swing from shoulders—Reach out in front with feet; (b) Shift weight to supporting arm; (c) Raise hips on back end of swing; (d) Shift weight to other arm; (e) Reach out in front with feet; (f) Continue circles!



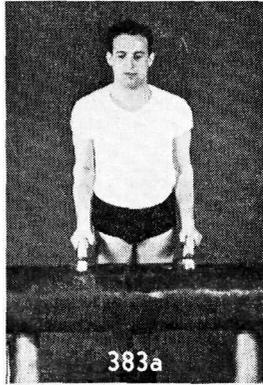
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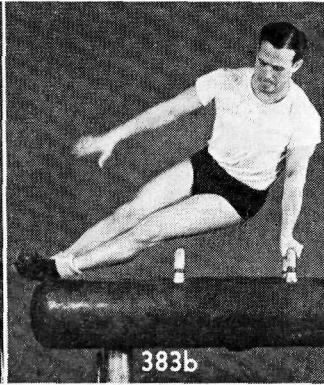
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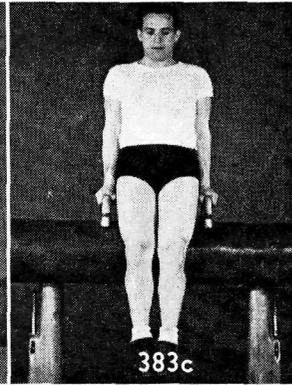
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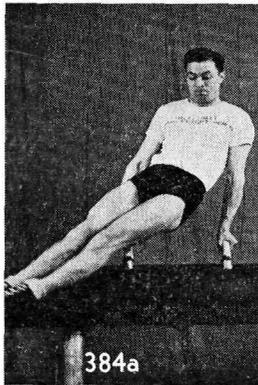
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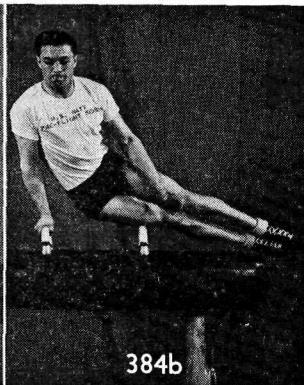
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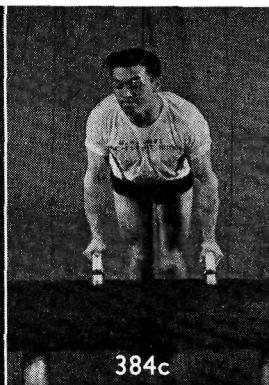
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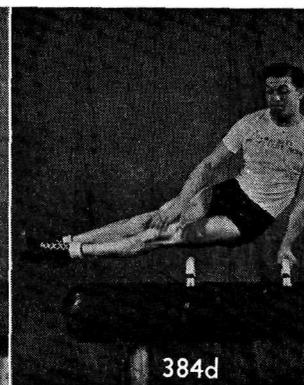
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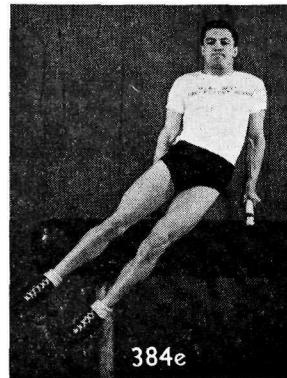
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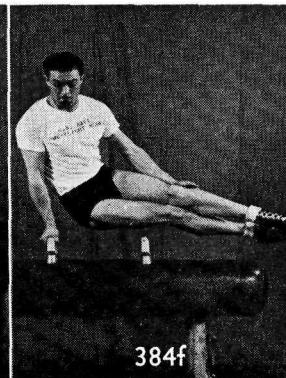
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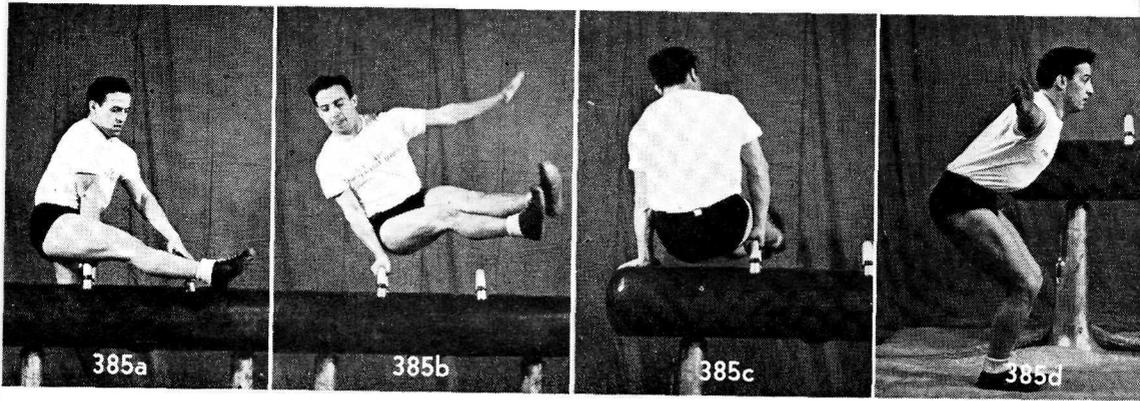
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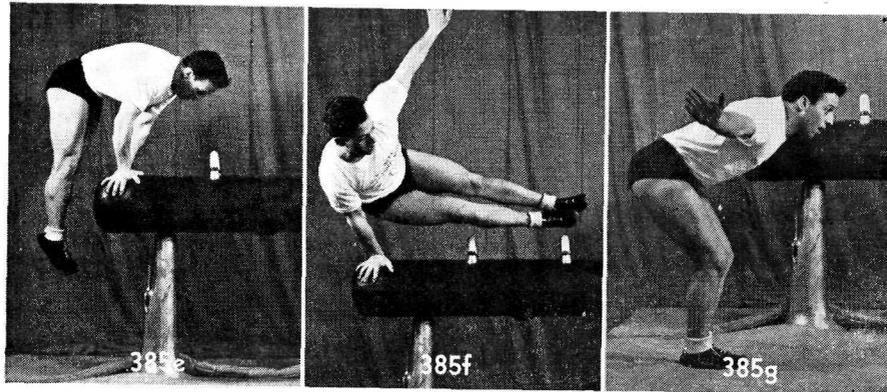
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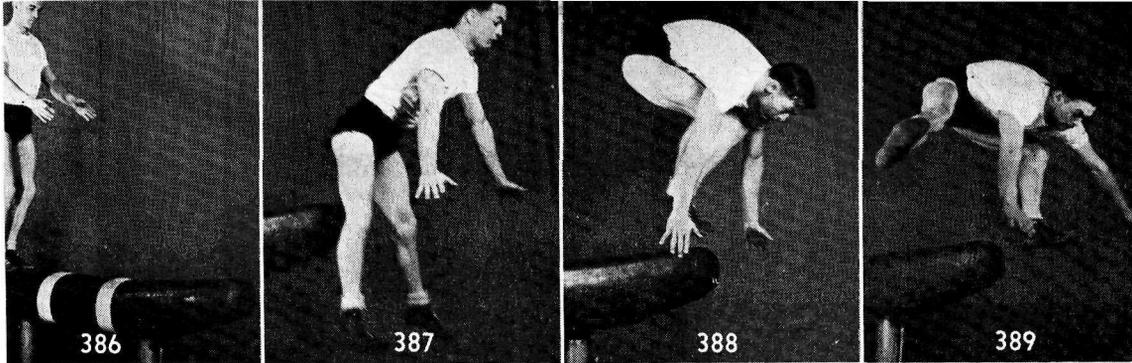


385—*Triple Rear Vault*.—(a) Feint right; (b) Swing right leg backward horizontally under left pommel—Lean backward; (c) Pivot on right hand and reach for end of horse with left hand; (d) Support on left hand as legs swing back and horizontal to dismount sideways right!



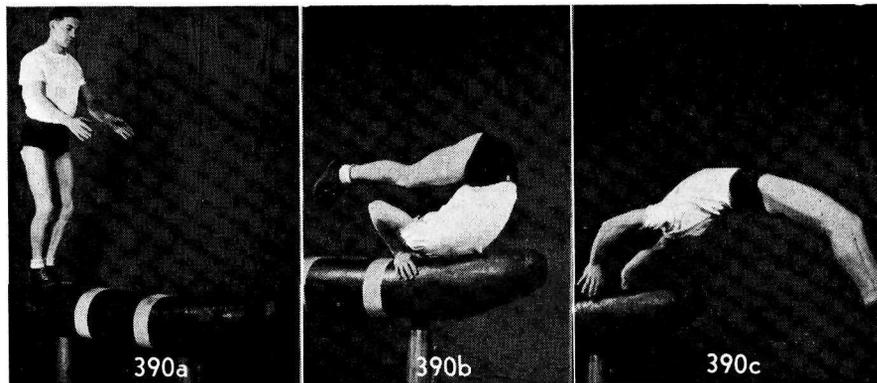
385—*Quadruple Rear Vault* (Same as Triple Rear, Plates above, except).—
 (e) As left hand touches horse reach with right hand for the end of horse;
 (f) Lift hips high—Lean on right arm as body is swung horizontally over horse; (g) Turn inward to dismount!

Other suggestions are the Various Giant Hip Circle Travels—Cross Giant Hip Circles—Double Rear Mount—Triple Rear Mount—Double Front Mount.



LONG HORSE*

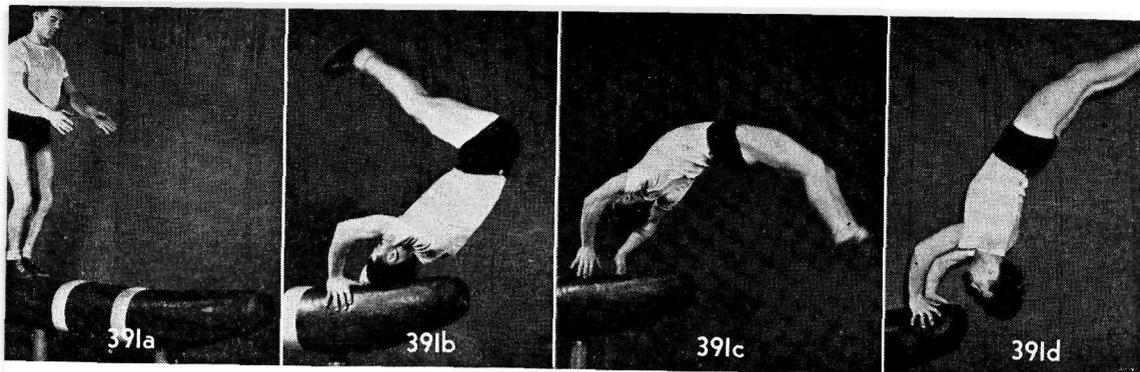
- 386—*Jump to Croup, Straddle Vault Dismount Over Neck.*—Jump to croup—Double foot take off!
- 387—Push hard with the hands—Lift head—Arms straight—Straddle off!
- 386—*Jump to Croup, Squat Vault Over Neck.*—Jump to croup—Double foot take off!
- 388—Push hard with hands—Lift head—Pull thighs to chest—Arms straight—Squat off!
- 386—*Jump to Croup, Wolf Vault Over Neck.*—Jump to croup—Double foot take off!
- 389—Push hard with hands—Lift head—Left leg in squat position, right leg in straddle (or opposite)—Arms straight!



- 390—*Jump to Croup, Neck Spring from Neck.*—(a) Jump to croup—Double foot take off; (b) Hands on neck—Arms straight—Push off croup from balls of feet to get hips up—When hips are off balance tuck nape of neck to horse and flex arms—Keep feet back; (c) Snap body and push with hands—Land on balls of feet!

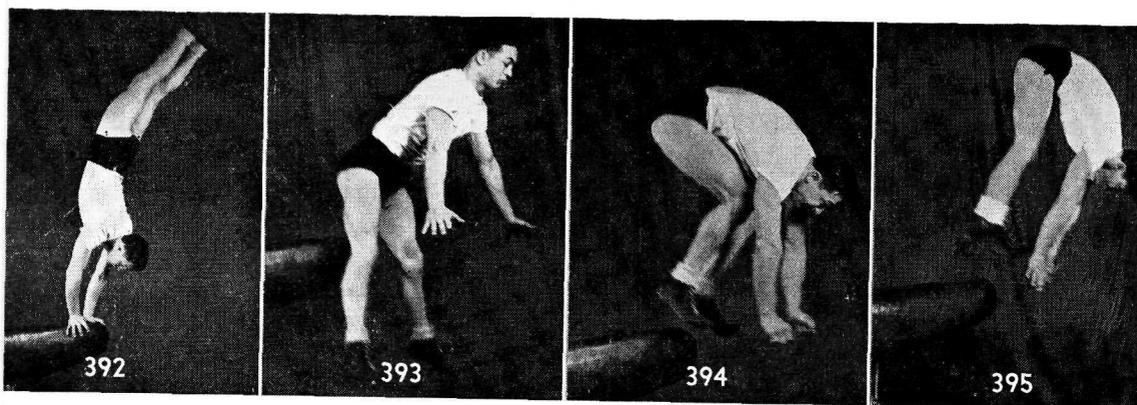
SAFETY HINTS.—In spotting push with one hand under back if necessary—Hold the wrist with the other hand to be sure the performer does not overspin!

* Near end—*croup*. Middle—*saddle*. Raised end—*neck*.



391—*Jump to Croup, Head Spring from Neck.*—(a) Jump to croup—Double foot take off; (b) Head up—Arms straight—Push off croup from balls of feet to get hips high—Place the top of the head lightly on neck; (c) When hips are off balance snap body, and push with hands—Land on balls of feet!
 391—*Jump to Croup, Handspring off Neck.*—(a) Jump to croup—Double foot take off; (d) Arms straight—Head up—When hips are off balance push with hands—Land on balls of feet!

SAFETY HINT.—Spot closely.



392—*Jump to Croup, Hand Balance on Neck, Straddle Vault Dismount.*—Jump to croup—Double foot take off—Kick up to a hand balance position on neck—Let feet go off balance!

393—Push hard with the hands and lift the head—Land on the balls of the feet—Feet apart and legs straight!

SAFETY HINTS.—Have a spotter on each side—Push up on the shoulders.

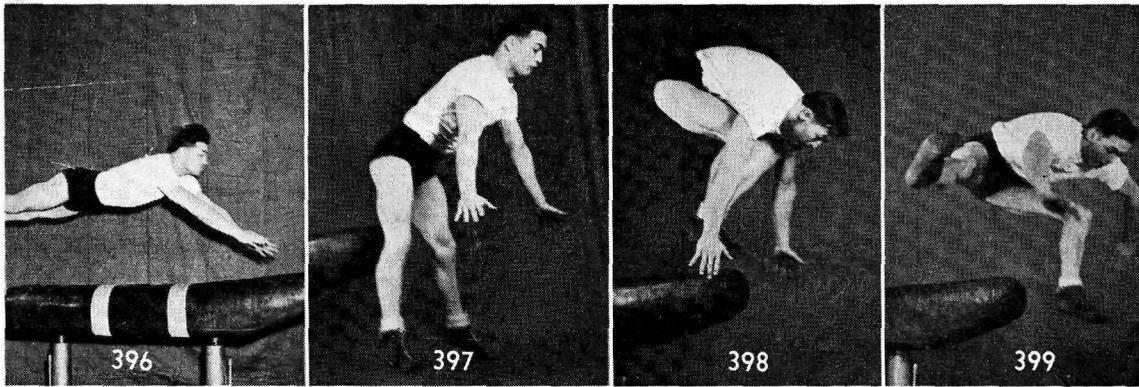
392—*Jump to Croup, Hand Balance on Neck, Squat Vault Dismount.*—Jump to croup—Double foot take off—Kick up to a hand balance position on neck—Let feet go off balance!

394—Push hard with hands and lift the head—Land on balls of the feet—Knees to chest—Feet between hands!

392—*Jump to Croup, Hand Balance on Neck, Straight Leg Cut Through.*—Double foot take off—Jump to croup (Same as previous Jump, only let feet go further off balance)!

395—Push extra hard with hands—Legs straight—Bring feet between hands!

SAFETY HINT—Be spotted closely!



396—*Run, Straddle Vault Over Neck.*—Double foot take off from beat board—Arms straight—Keep eyes on beat board, then on neck or croup!

397—Push hard with hands—Lift head—Legs straight—Feet apart—Cut legs downward—Land on balls of feet!

SAFETY HINT.—Use two spotters!

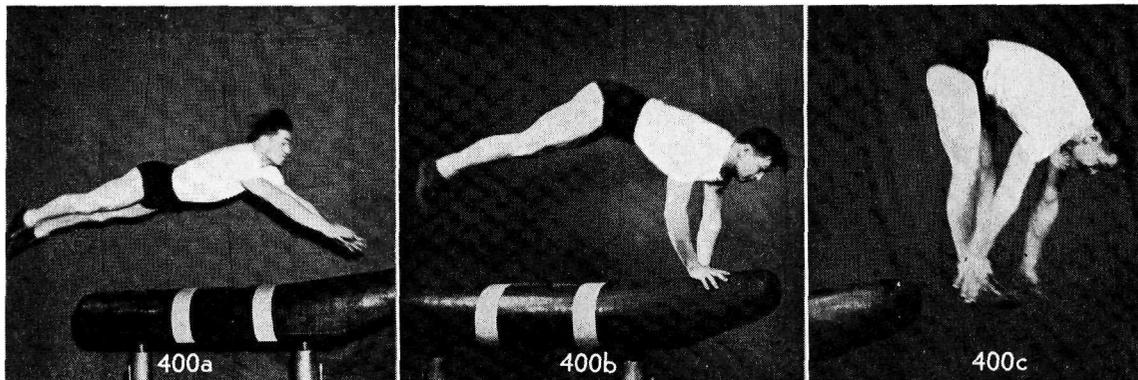
396—*Run, Squat Vault Over Neck.*—Double foot take off from beat board—Arms straight—Keep eyes on beat board, then on neck or croup!

398—Push hard with hands—Lift head—Pull knees to chest—Land on balls of feet!

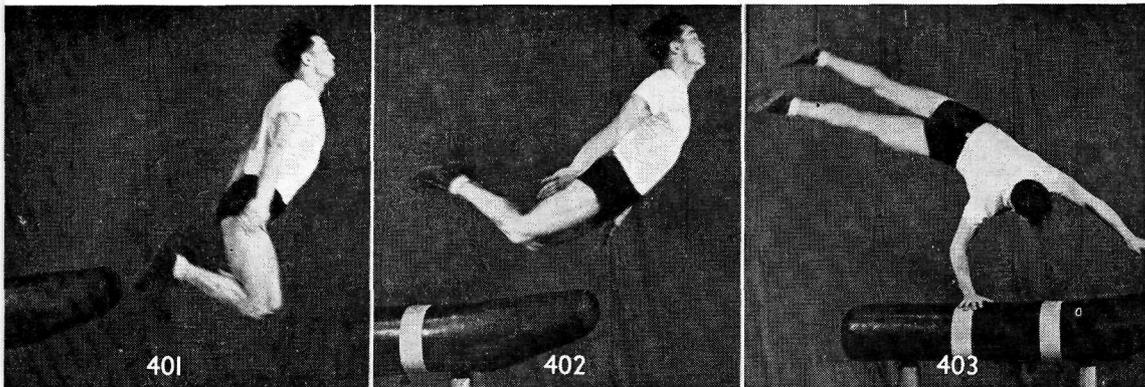
SAFETY HINT.—Use two spotters!

396—*Run, Wolf Vault Over Neck.*—Double foot take off—Dive and touch neck with both hands!

399—One leg bent at knee, other leg straight!



400—*Run, Stoop Vault from Neck.*—(a) Dive and touch neck with both hands—Get a vigorous beat from arched back; (b) Lift hips up; (c) Keep legs straight—Push with hands!



Suggestions for Advanced Vaults on Long Horse

Vaults may also be executed with a tip-off from the croup and a double tip-off (croup to neck). On all vaults it is important that the performer learns to break into his vaults from a position in which he is supported on his hands with the legs straight and together at a 45 degree angle. This 45 degree angle is fundamental to all vaults and when it is mastered the more difficult vaults are achieved. The performer should have an easy relaxed stride at the beginning of his running approach with a definite beating out of the last few steps. Some long horse vaulters measure their running approach.

- | | |
|--|--|
| 401—Run, Sheep Vault from Neck! | 402—Run, Swan Vault from Neck! |
| 403—Run, Cartwheel! | 404—Run, Half Twist Scissors! |
| 405—Run, Headspring from Neck! | 406—Run, Handspring from Neck,
Bent Arms! |
| 407—Run, Handspring from Neck,
Straight Arms! | 408—Run, Giant Straddle! |
| 409—Run, Giant Stoop! | |

Teaching Procedure.—Demonstrate each stunt—Spot closely—Coach performer while he is attempting stunt—Stress double foot take off—for difficult vaults adjust the position of the beatboard to suit the individual.

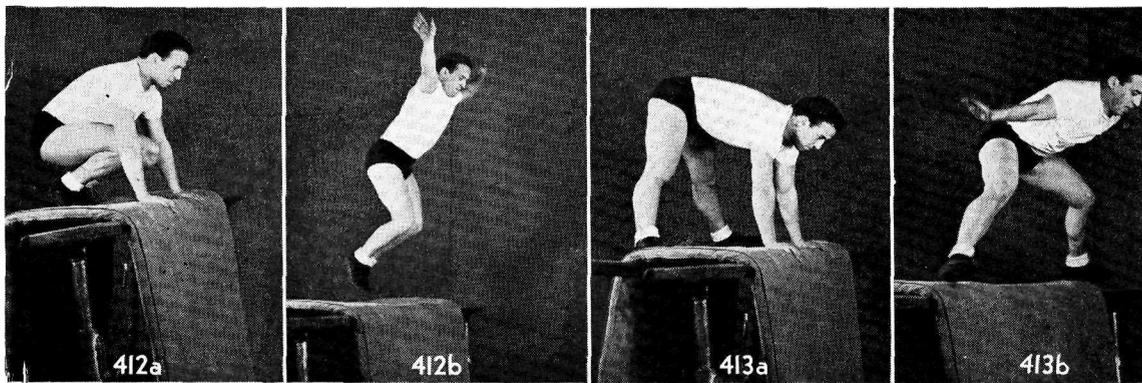
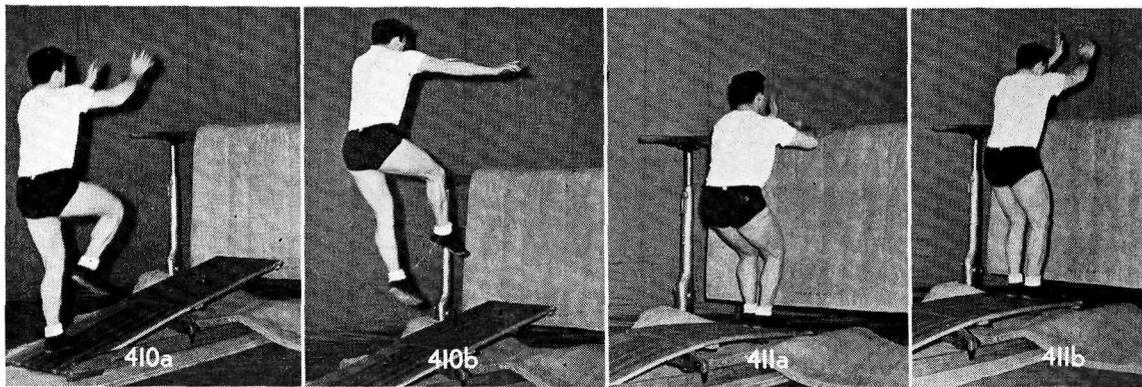
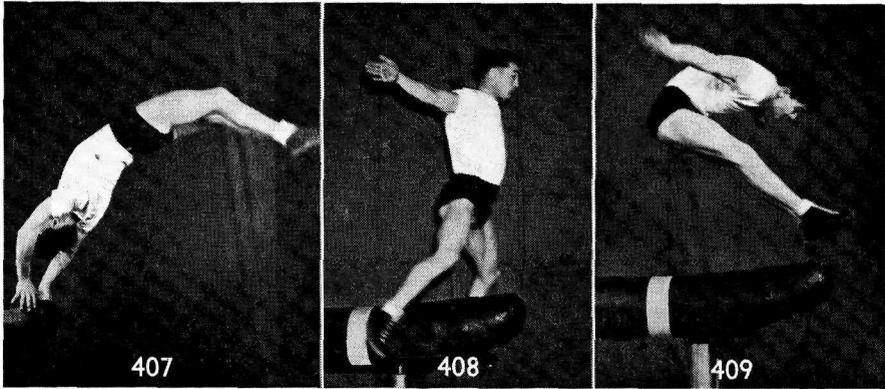
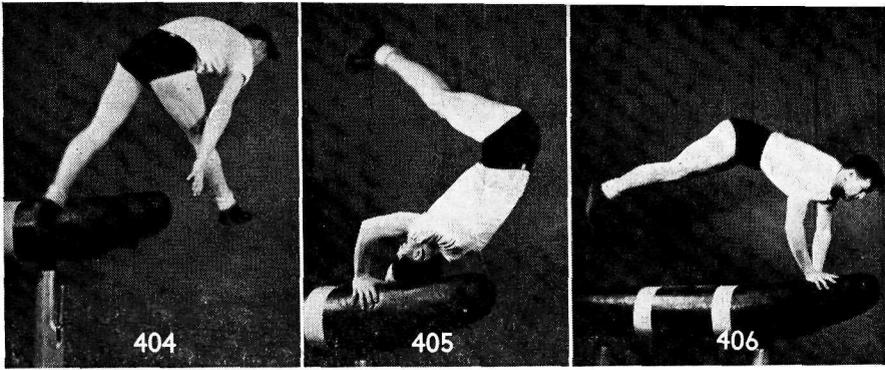
SAFETY HINT.—Use two spotters!

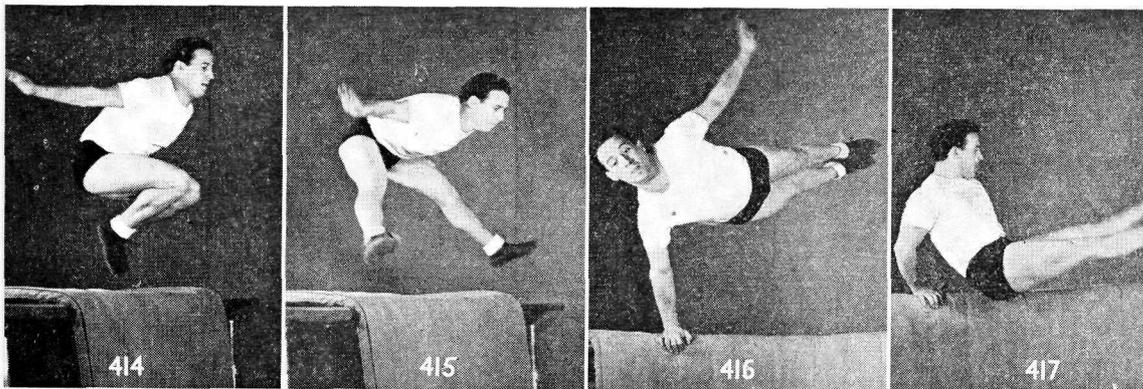
ELEPHANT*

Equipment Needed: One set of Parallel Bars, One Springboard or Trampoline, Mats covering the Bars, Mats to anchor Springboard, Mats for Dismounts.

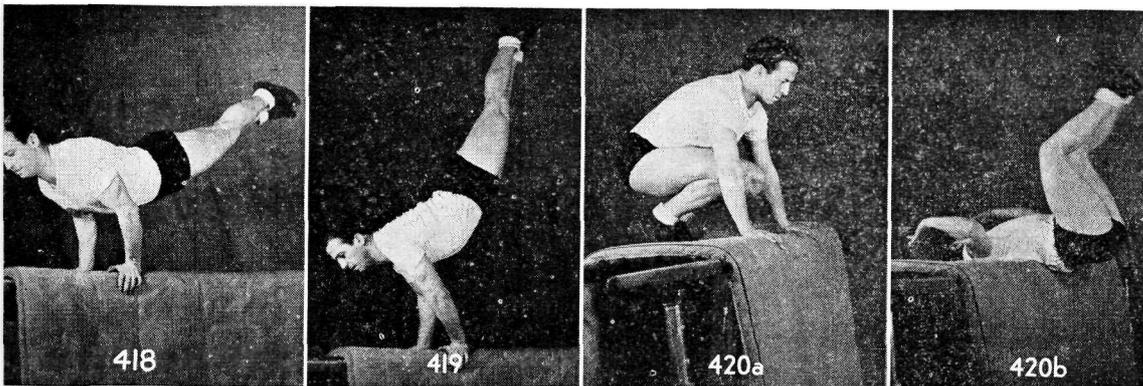
- 410—*Take Off.*—(a) Take off from one foot and land on board; (b) Take off from both feet to do the stunts!
- 411—*Spring Off Board.*—(a) Take off from balls of feet—Feet about ten inches apart—Wait for the spring of the board; (b) Extend the knees and feet!
- SAFETY HINT.—This practice is very important.
- 412—*Jump to Squat Stand.*—(a) Squat, stand; (b) Jump forward!
- Variations.*—Same with turns on dismount—Same with turns and rolls after dismount.
- 413—*Jump to Straddle Stand.*—(a) Spring to a straddle stand; (b) Jump forward!
- Variations.*—Same with turns on dismount—Same with turns and rolls after dismount.

* See pp. 76, 452.

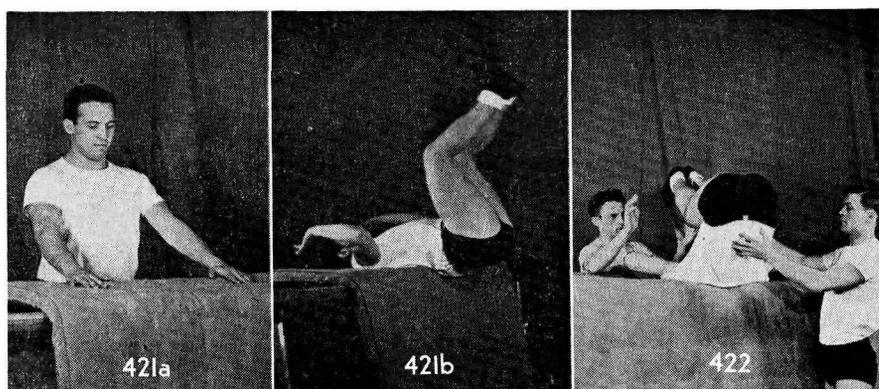




- 414—*Squat Vault*.—Head up—Knees to chest—Push hard with hands!
 415—*Straddle Vault*.—Head up—Feet apart—Push hard with hands!
 416—*Flank Vault Left or Right*.—Trunk and legs on a straight line—Body parallel to deck—Keep supporting arm straight—Lean over supporting arm!
 417—*Rear Vault Left or Right*.—Keep hips low!



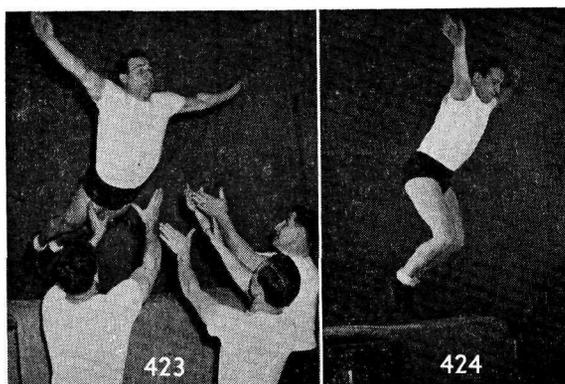
- 418—*Low Front Vault*.—Head back—Arch the back—Body at about 45° angle!
 419—*High Front Vault*.—Head back—Arch the back—Body at about 60° angle!
Variations.—Follow vaults with shoulder rolls.
 420—*Forward Roll from Squat Stand*.—(a) Spring to a squat stand on near side;
 (b) Lift hips—Duck head—Forward roll dismount!
 SAFETY HINTS.—Spotter stand close—Caution performer not to “kip” but roll off easy—Open up when off balance!



421—*Forward Roll from Board (no run)*.—(a) Spring from board (no run)—Stand on end of springboard with hands on near side; (b) Lift hips high before ducking head to mat!

422—**SAFETY HINT**.—Spotter on each side of the elephant.

Variation.—Same with a run.



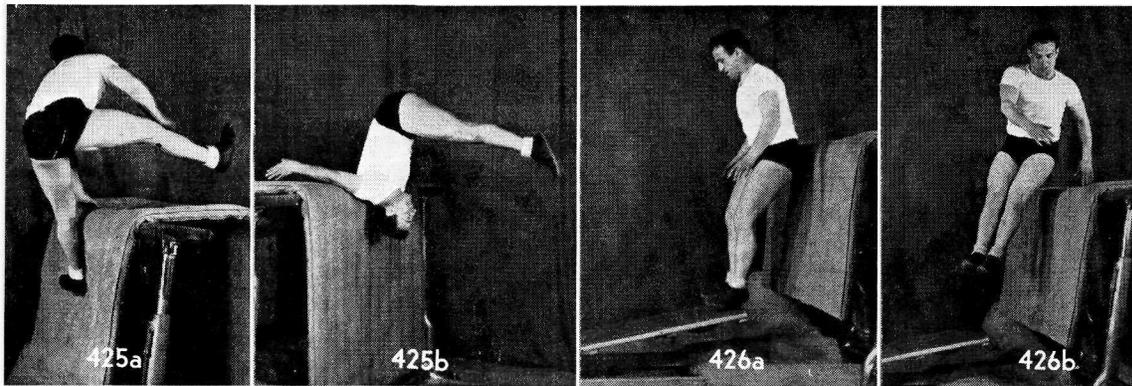
423—*Swan Dive Over Elephant*.—Dive forward and upward—Arms straight and extended sideward—Legs together—Head up!

SAFETY HINTS.—Lower bars at first—Three catchers—Make sure the arms are kept sideward.

Variations.—Same from on top of elephant.

424—*Knee Dismount*.—Rest on knees first—Lift with arms and shoulders when off balance forward—Dismount to mat!

Variation.—Jump from knees to feet before dismounting.

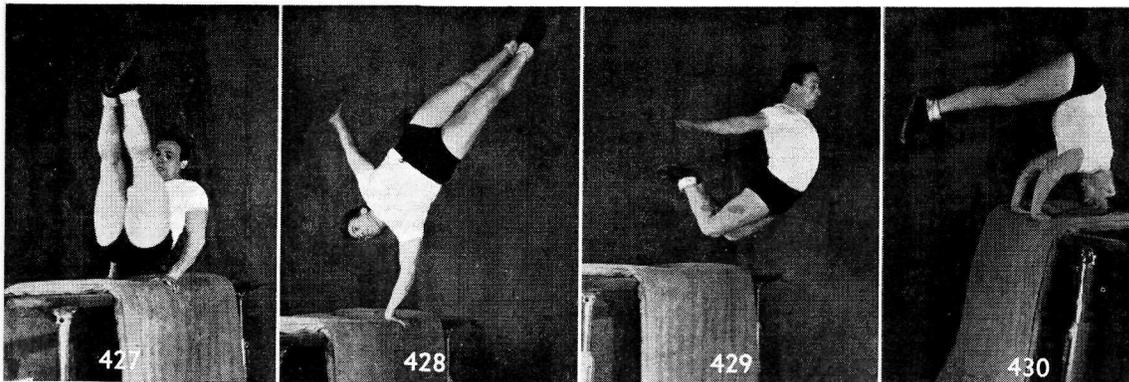


425—*Right Leg Full Circle Left, Backward Turnover.*—(a) Double foot take off—Lean backward toward springboard—Swing leg around in a wide circle to a side seat; (b) Grasp edge of mat—Turn over backward—Do not release grasp until off balance!

Variation.—Swing both legs around to side seat—backward turnover—From momentary hand balance twist to a side seat—backward turnover!

426—*From Elephant, Jump to Board and Return with Rear Vault.*—(a) Lean forward—Land with the knees bent; (b) Straighten the knees to get the spring of the board—Keep hips low!

Variation.—Spring straight back followed by backward turnover.



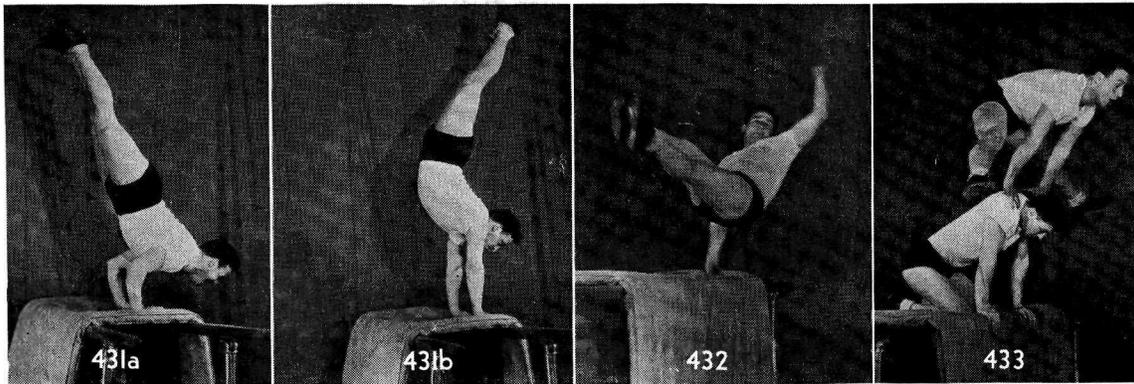
427—*Rear Vault.*—Keep hips low!

428—*Cartwheel.*—Arms and legs in a straight line!

429—*Sheep Vault.*—Body arched—Head back—Arms sideward for balance!

430—*Spring to a Head Balance!*

Variation.—Face Left or Right.



431—*Spring to a Hand Balance*.—(a) Catch balance with bent arms; (b) Press to hand balance!

Variation.—Face Left or Right.

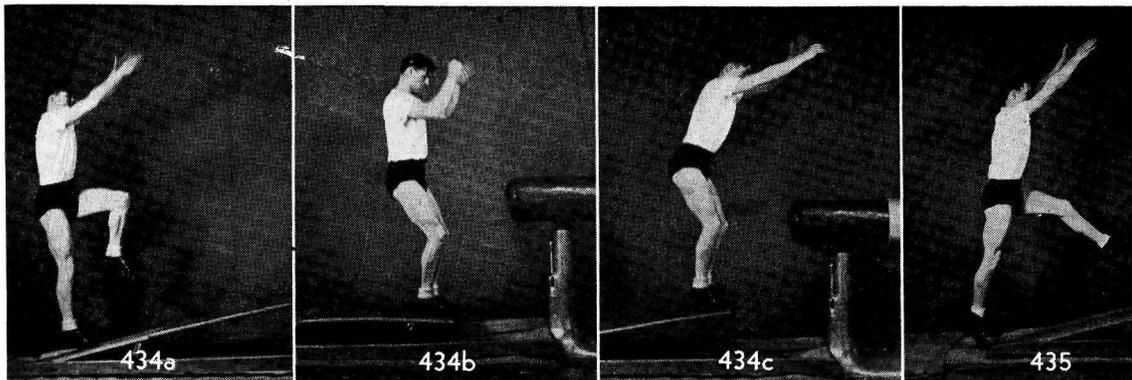
432—*Screw Vault*.—Double foot take off—Place right hand toward the left side—Spring and make a complete turn supported on one hand—Use free hand for balance!

433—*Straddle Vault over Kneeling Person*.—Head up—Push hard with the hands!

Variations.—All the vaults may be performed in this way.

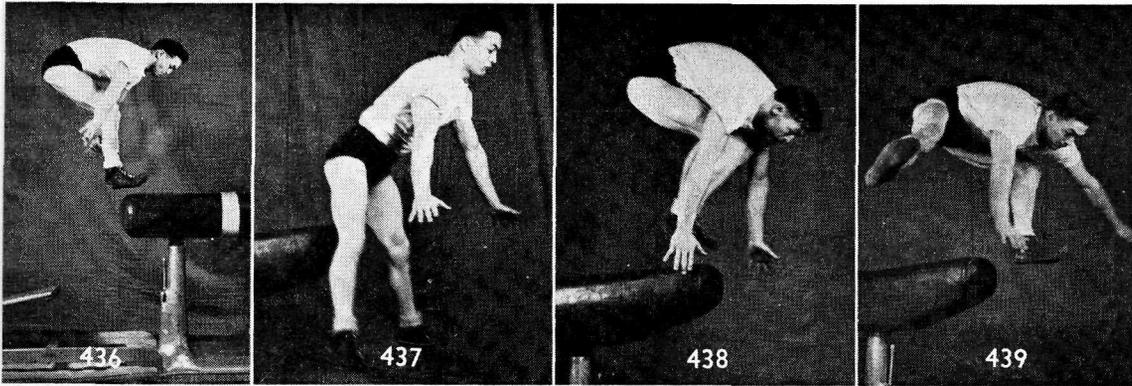
TIGER LEAPING

Equipment Needed: Long Horse, One Springboard or Trampolette, Jumping Standards and Jumping Rope, Mats to anchor Springboard, Mats for Dismounts.



434—*Use of Springboard*.—(a) Take off from one foot about twelve inches from back of board; (b) Land on far end of board with feet about ten inches apart, and knees bent; (c) Wait for the rebound of the board before the knees are extended!

435—Take off from the deck when better control is obtained!



Mounts and Vaults

436—Spring to a stand on croup.

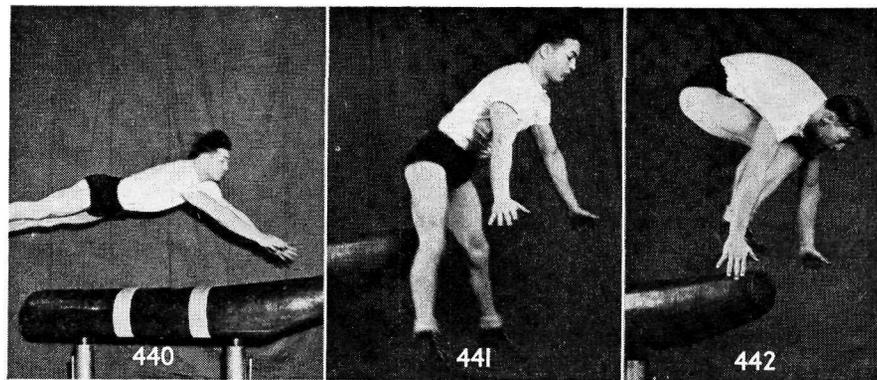
437—*Straddle Vault*—over neck.

436—Spring to stand on croup.

438—*Squat Vault*—over neck.

436—*Wolf Vault*—Spring to stand on croup.

439—*Wolf Vault*—over neck.



440—*Straddle Vault*—Force an arch in back.

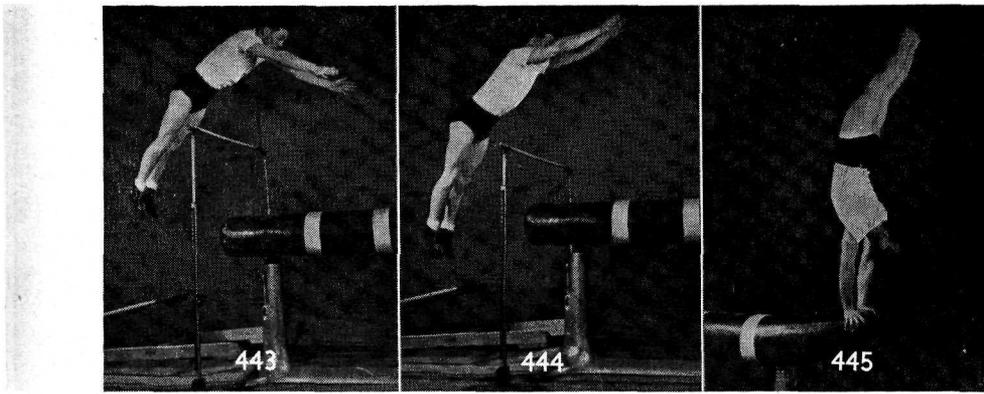
441—Push hard with hands—Lift head—Legs straight!

440—*Squat Vault*—Force an arch in back.

442—Push hard with hands—Lift head—Bring knees to chest!

SAFETY HINT.—Two spotters, one on each side!

Variations.—Vaults with Turns.



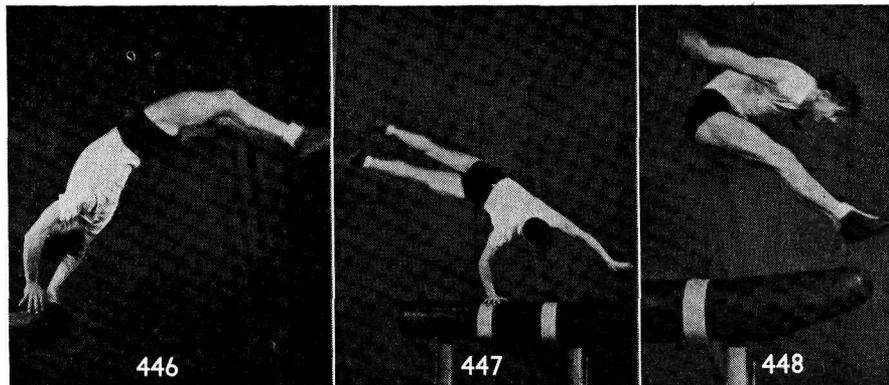
Suggestions for More Advanced Stunts in Tiger Leaping

443—Vaults preceded by a dive over jumping standards.

444—Standards at increasing heights.

SAFETY HINT.—If the vault cannot be executed on the other side, merely land on one side or the other.

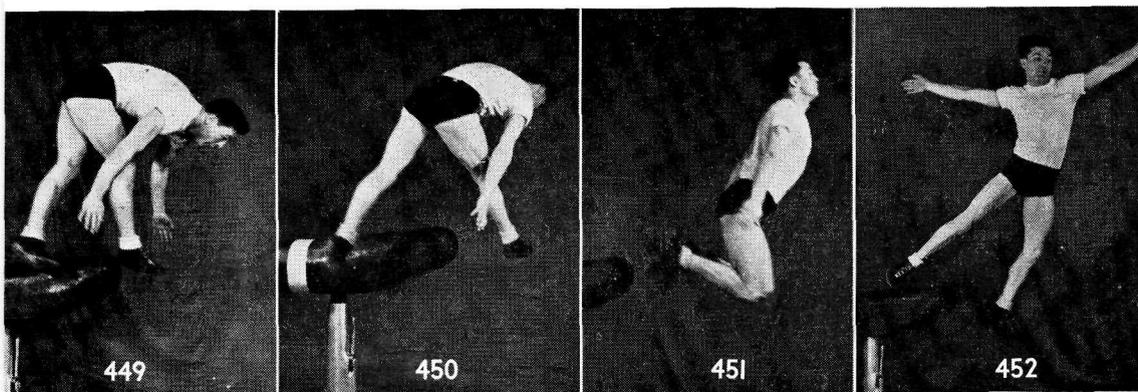
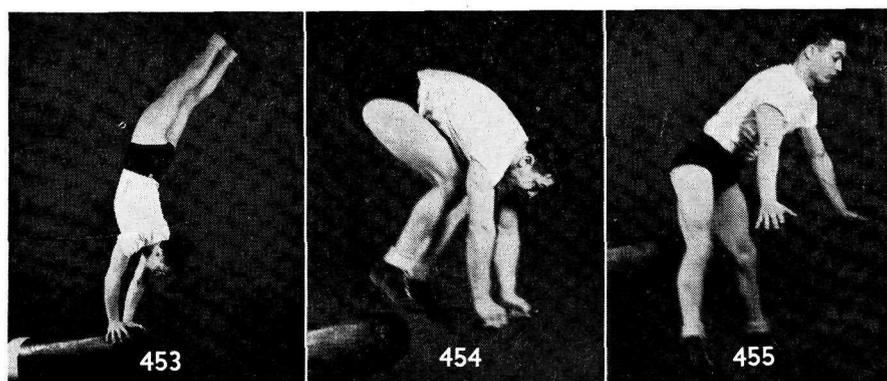
445—*Momentary Hand Balance*.—Dismount sideways!

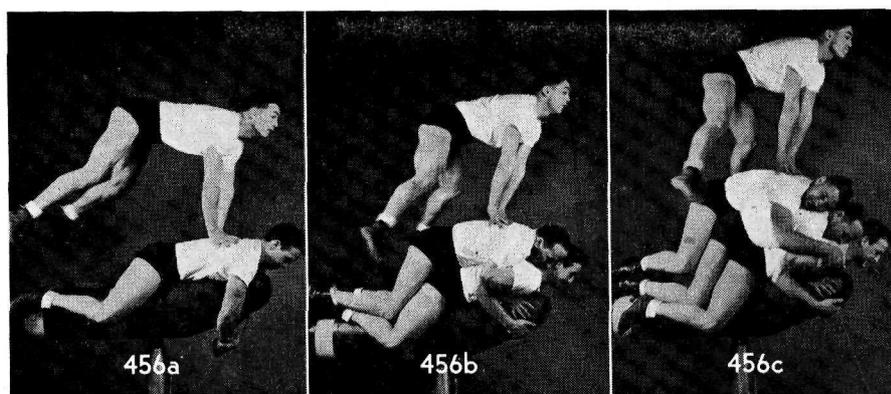


446—*Handspring*.

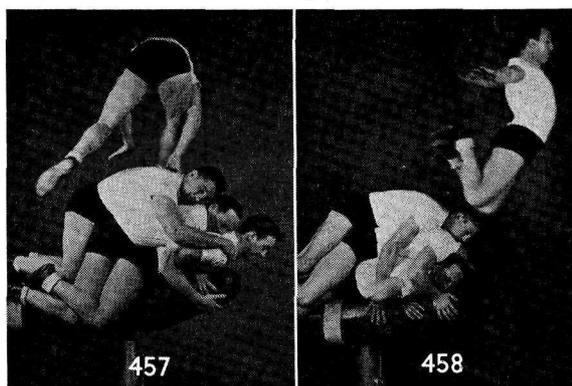
447—*Cartwheel*.

448—*Stoop Vault*.

449—*Scissors.*450—*Back Straddle.*451—*Sheep Vault.*452—*Back Straddle Vault with Half Turn.*453—*Hand Balance.*454—*Hand Balance.—Squat through!*455—*Hand Balance.—Straddle off!*



456—(a) *Vault* over one man lying on top of horse; (b) *Vault* over two men lying on top of horse; (c) *Vault* over three men lying on top of horse.



457—*Back Straddle Vault* over men lying on top of horse.

458—*Sheep Vault* over men lying on top of horse.

SAFETY HINTS.—Do not run very fast—Hit board hard—Provide at least two spotters for this activity—Only the better vaulters should try the more difficult vaults in tiger leaping—Over the jumping standards merely land at the side of the horse if you are not able to complete the anticipated vault over the neck—Do not change mind in the middle of the stunt!

Teaching Procedure—Demonstrate each stunt—Stress proper method of springing from board—Spot closely—Coach performer while he is doing the stunt—Keep springboard in proper position—Keep ends of springboard covered—Do not have bars moved too high.

CHAPTER IX

Climbing Activities*

The ability to climb a rope or lower one's self on a line is essential to every one in the U. S. Navy. It may mean life, or, as past experience has proved, it may result in painful or permanent disability. The latter has happened in a number of cases where inability to lower the body has caused severe rope burn of the hands with resultant permanent disability (claw hands).

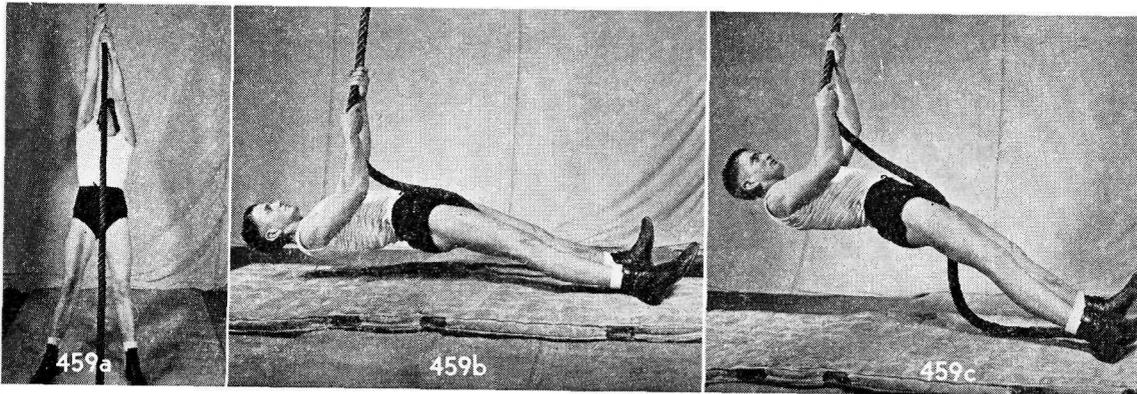
The cadet is instructed how to handle himself both with and without the use of the legs in climbing and lowering himself on a rope or line, and making fast in various ways. The effective use of the legs conserves energy in making long climbs and in climbing when fatigued. The various clamps, making fast and rest, together with the seat positions, are a means of securing to the rope for extended periods.

Preliminary Exercises.

To familiarize the cadet with the "feel" of the rope, and to have him appreciate the resultant stress of raising or lowering his body without the use of the legs, he is given a few preliminary exercises. These are as follows:

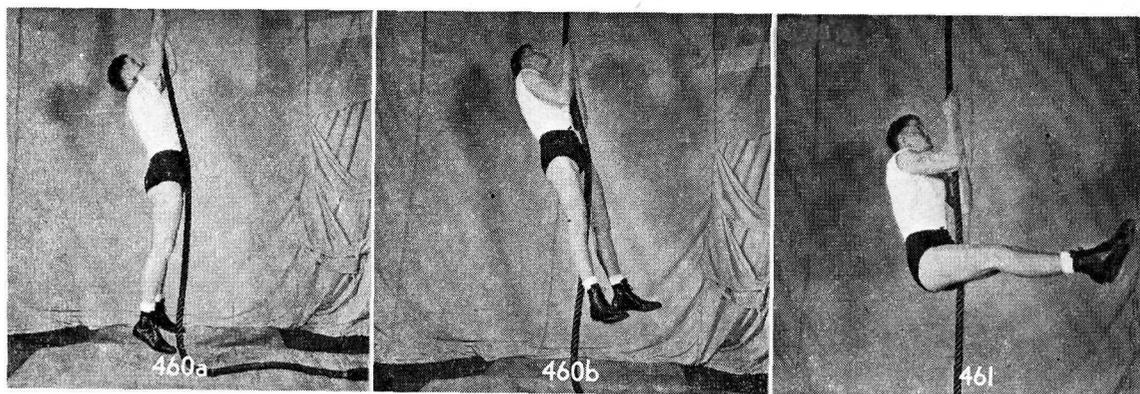
ROPES

Vertical Rope



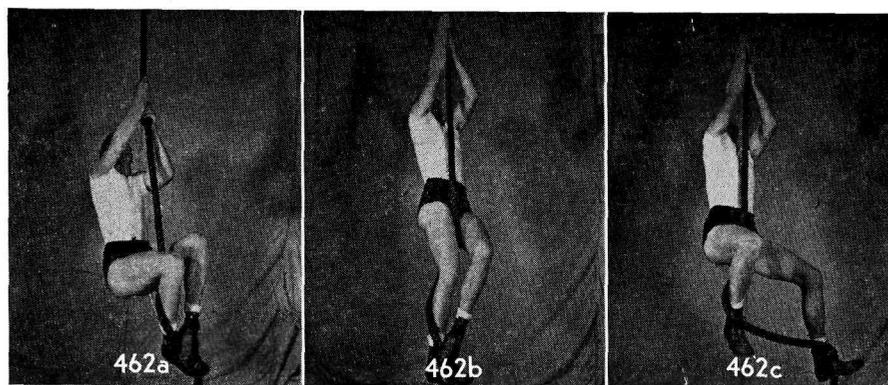
459—*Lower the Back to the Deck and Up.*—(a) Feet about fifteen inches apart—Grasp rope shoulder height—Keep body straight—Lower hand under hand—Keep body straight; (b) Touch back to deck; (c) Pull back to stand!

* Refer also to Rope Climbing in Syllabus.

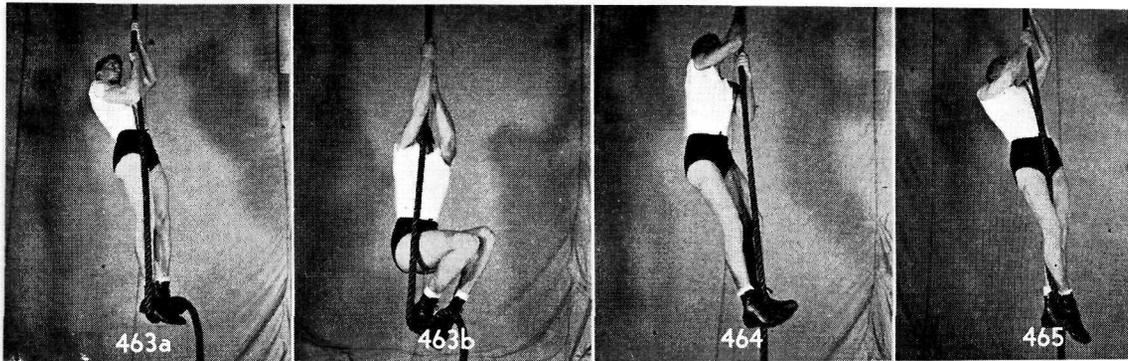


460—*Chin on Ropes*.—(a) Grasp rope high above head—Keep a tight grip; (b) From the hang, pull to a bent arm position and lower.

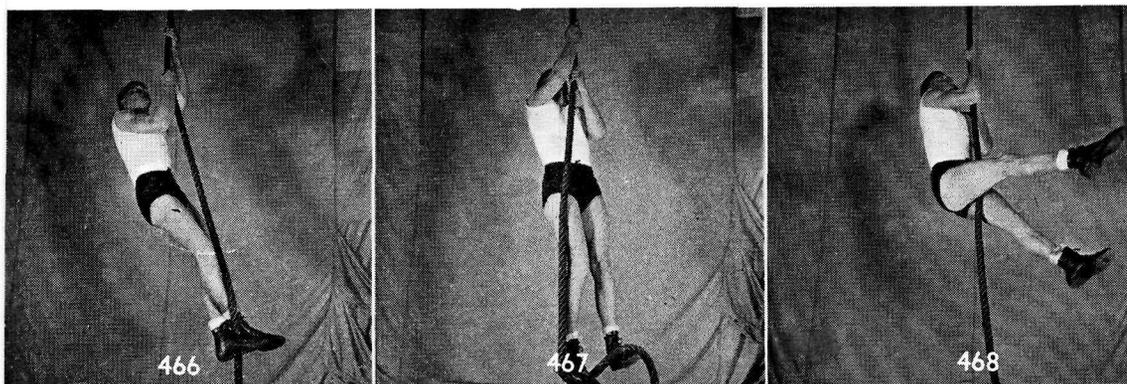
461—*Climb Down and Up*.—Start from stand-line running down mid-line of body—Reach high up and grasp line with both hands—Raise legs parallel to deck ($\frac{1}{2}$ lever)—Arms flexed—Lower hand under hand to the deck—Practice descending till able to raise legs clear of deck and able to climb upwards.



462—*Climbing the Rope Using Foot and Leg Lock*.—(a) Rope between legs and around the back of right leg—Rope then passes across instep of right foot—Left foot steps on rope across instep; (b) While holding with arms, flex knees—Make fast with foot clamp—Straighten legs and reach above with hands; (c) Take up the slack with left foot to aid in the climb and to eliminate rope burn.



- 463—*Climb the Rope Using Stirrup*.—(a) Rope passes along side of body—Rope passes under one foot and over other—Flex knees, bring legs high up as possible; (b) Close feet, clamp rope tight—Push rope with feet as body is brought into perpendicular position by leg extension—Reach upward with arms as high as possible and repeat.
- 464—*Descending Rope between Arches of Feet*.—Rope passes between arches of both feet—Legs straight, slightly bent at hips—Flex arms while descending.
- 465—*Cross Leg Climb (Shinny Up)*.—Start with hands over head—Legs overlap line—Rope passes down and over instep of one foot—Clamped to foot by back of ankle of other foot—By flexing and straightening knees, assist arms in climbing.

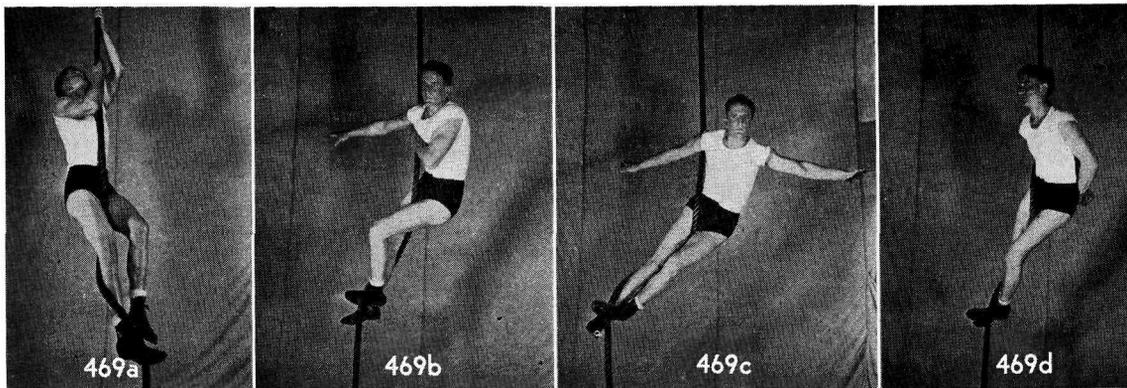


- 466—*Cross Leg Descend*.—Legs crossed in same fashion as above—Descend by either relaxing on foot grip or by flexing knees and alternating grip with hands and legs—Speed is regulated by amount of pressure applied by legs on rope.
- Cross Leg Secure*.—Make fast by gripping rope firmly with knees and feet.
- 467—*Descend Rope Using Stirrup*.—Rope passes down side of body—Rope passes under near foot and over instep of far foot—Open and close distance between feet to control speed of descent.
- 468—*Climb, Hands Only*.—Grip tightly—Shift weight from side to side—Kick with legs—Knees slightly flexed—Kick outward, in walking motion—Rotate shoulders with each stroke of arms—While arm and shoulder action are taking place the hips are rotating in the opposite direction.

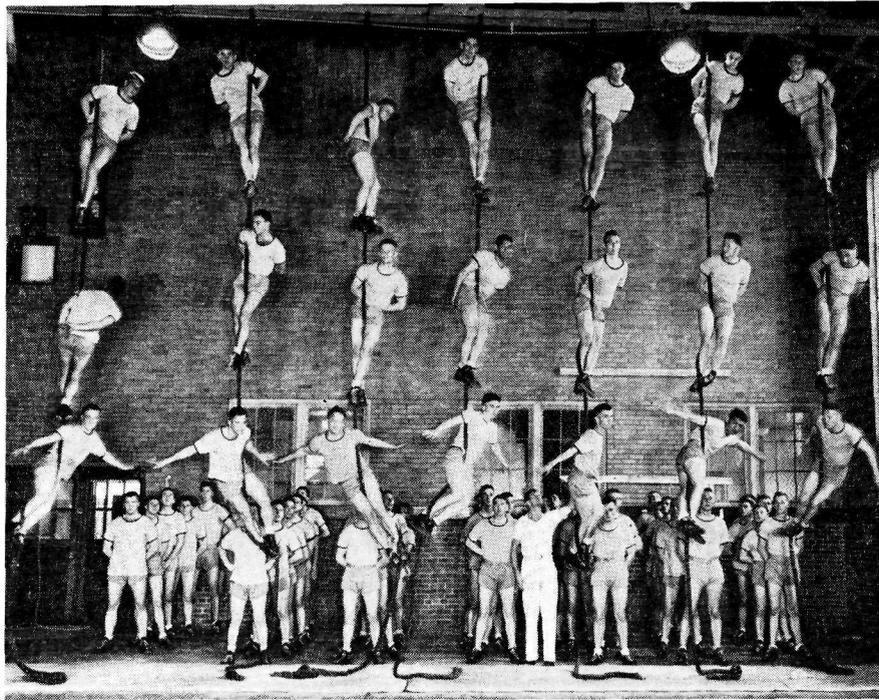
Any of the above climbs, descents, and secures can be used when only one man is on the line at a time. When more than one is on the line, the straight hand-over-hand and cross-leg climbs are recommended: In descending the cross-leg, rope between arches (instep squeezed), or straight hand-under-hand descent. When exhausted the leg around is advised in climbing, securing, and descending, but is difficult when more than one is on the line.

Make Fast and Rest

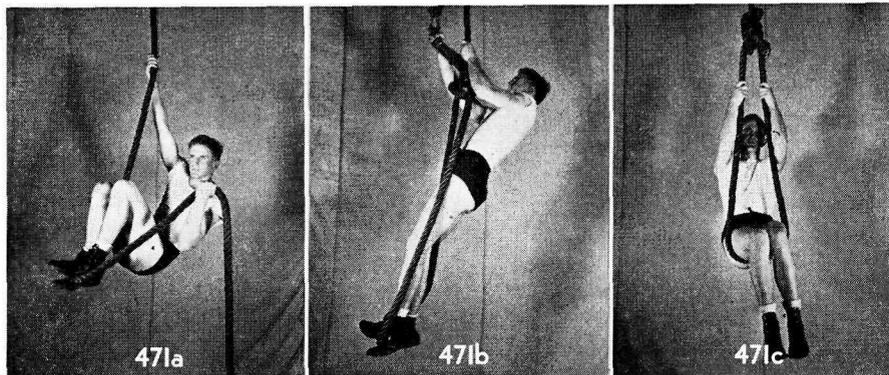
The "make fast" is usually used when it is desired to rest on a line. It is assumed that the line is midline of the body, passing between the legs around the right leg (for sake of illustration; either side will do) and over the dorsum (instep) of the right foot and held in place with the instep sole of the left foot on top of rope and right foot. The leg is fully extended and straight; the line is held against the body by the left hand, and the left hand is pressed into and on a level with the right axilla (armpit). The right arm is brought between the chin and the line on a horizontal plane, forward to outward-and-backward, bringing a backward traction on the line. When this is accomplished, the left hand is released and placed behind the back where it grasps the right wrist to maintain the backward traction on the line. The head is erect, chest out, in order to assure a large part of the body to be pressed against the line to facilitate the make fast rest. In coming away from "make fast," the left hand releases the right wrist, and grasps the line in front of the body at the right axilla (armpit), and then the right shoulder is released and the right hand also regrasps the line, and descent is made as previously described.



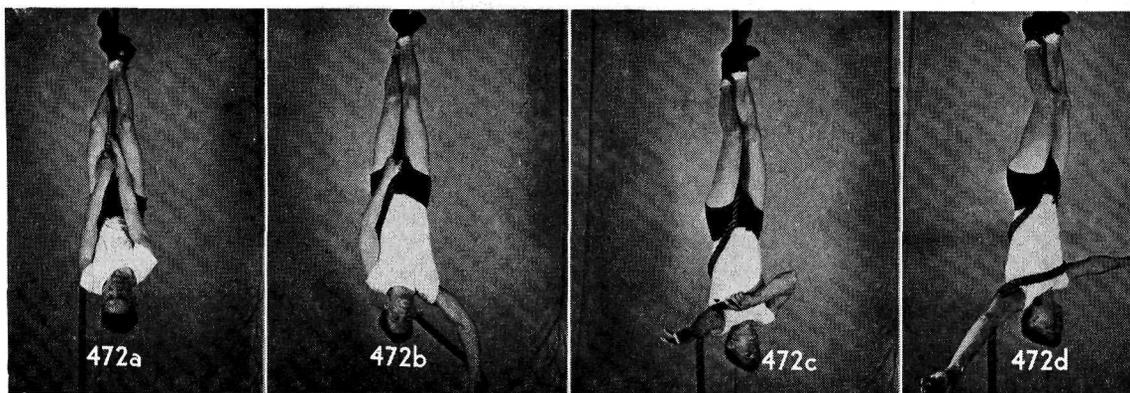
469—(a) Line is midline of the body—The line passes between the legs, around right leg and over the instep of the right foot—Press the sole of the left foot against the right instep; (b) Extend the right leg fully—Hold the line against the body with the left hand with the left hand pressed into the right armpit—Bring the right arm between the chin and a horizontal plane, forward to outward-and-backward—Bring a backward traction on the line; (c) Release the left hand—The legs will maintain the body on the line with a minimum of backward traction of the right arm; (d) Place the left hand behind back and grasp right wrist—Head erect, chest out!



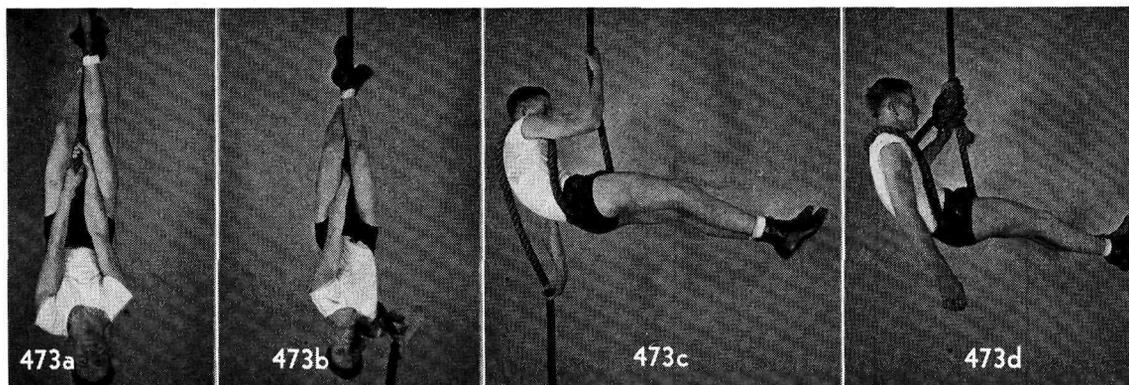
470—“*Make Fast and Rest.*”



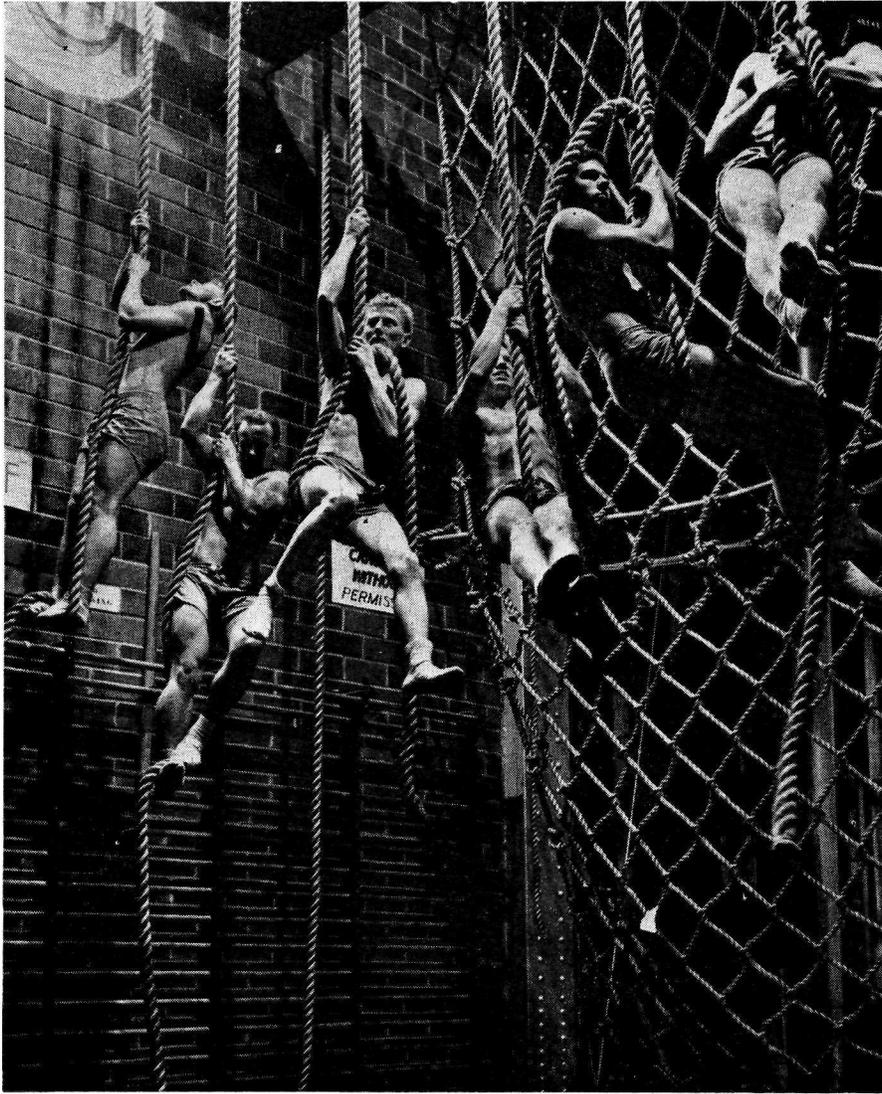
471—*Stand and Seat Mount.*—(a) From a “make fast” position—Bend knees and bring rope up from below the clamp position; (b) Then straighten knees—Tie rope above making a loop; (c) Complete the seat mount!



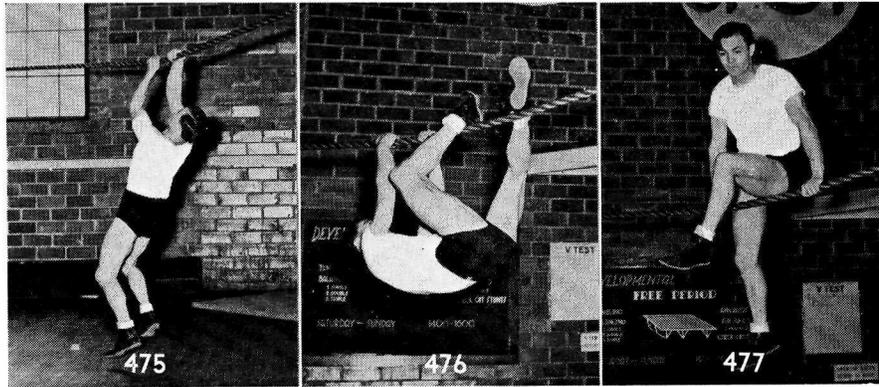
472—*The Inverted Hang, Make Fast and Rest.*—(a) Grasp rope above head—Swing legs aloft—One foot in front and one in back of rope; (b) Rest in inverted position—Right hand grasps line preliminary to passing across chest; (c) Rope passes under armpits and back and across chest; (d) Complete the inverted hand and rest!



473—*Rocking Chair.*—(a) Swing to an inverted position—Clamp rope with legs; (b) Bring free end up and under back and across chest—Over shoulder front to rear; (c) Wind rope around body under opposite armpit to line and secure; (d) Complete the Rocking Chair and rest!



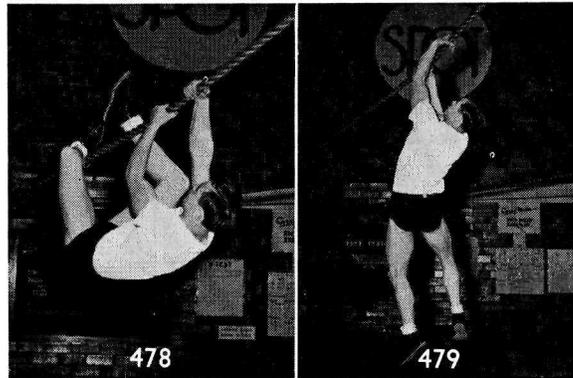
474—*Seats and Stirrups.*

Horizontal Rope

475—*Hand-over-Hand*.—Grasp tight—Flex arms—Kick with legs!

476—*Sloth Walk*.—Heels resting on rope—Knees well out to the side—Same leg as arm while moving!

477—*Side Straddle Seat (Upward Glide)*.—Grasp rope in combined grasp—Rope passes under thigh of one leg—Balance with legs!

Inclined Rope

478—*Variations*.—Sloth Walk—Heels resting on rope—Knees well out to the side—Same leg as arm while moving! Turn and descend—Work in opposite direction!

479—*Hand-over-Hand*.—Grasp tight—Flex arms—Kick with legs!

PROGRESSIVE ROPE ACTIVITIES

1. Grasp rope lying on floor, arm bending and stretching.
2. Grasp, stride standing, climbing downward hand under hand, upward hand over hand.

3. Make fast on floor; climb upward, hand over hand, and make fast.
4. Climb upward five (5) strides, climb downward two (2) strides, make fast.
5. Grasp, standing, raise legs to inverted hang.
6. Climb upward three strides, raise legs to inverted hang, lower legs and climb downward.
7. Climb upward four (4) strides, raise legs to inverted hang, lower legs and make fast, climb down.
8. Grasp, standing on two ropes, climb upward and downward.
9. Grasp, standing on two ropes, raise legs to inverted hang.
10. Lying supine on floor, grasp both ropes, arm bending and stretching.
11. Climb upward five (5) strides, raise legs to inverted hang, change hands and climb downward, head first.
12. Climb upward, hand over hand, for distance.
13. Grasp, standing on two ropes, climb upward, make fast and rest on one rope.
14. Grasp, standing on two ropes, climb upward, raise legs to inverted hang, lower legs and make fast on one rope.
15. Grasp, standing on two ropes, climbing upward for distance.
16. Grasp, standing on two ropes, climb upward about four feet, raise legs to inverted hang on one rope (both hands on one rope), lower legs and climb downward on one rope.
17. Climb upward on one rope (5) (strides), change one hand to other rope and climb downward on two ropes.
18. Work on horizontal and inclined ropes.

IMPORTANT!

Learn to Climb

Downward

as well as

Upward!

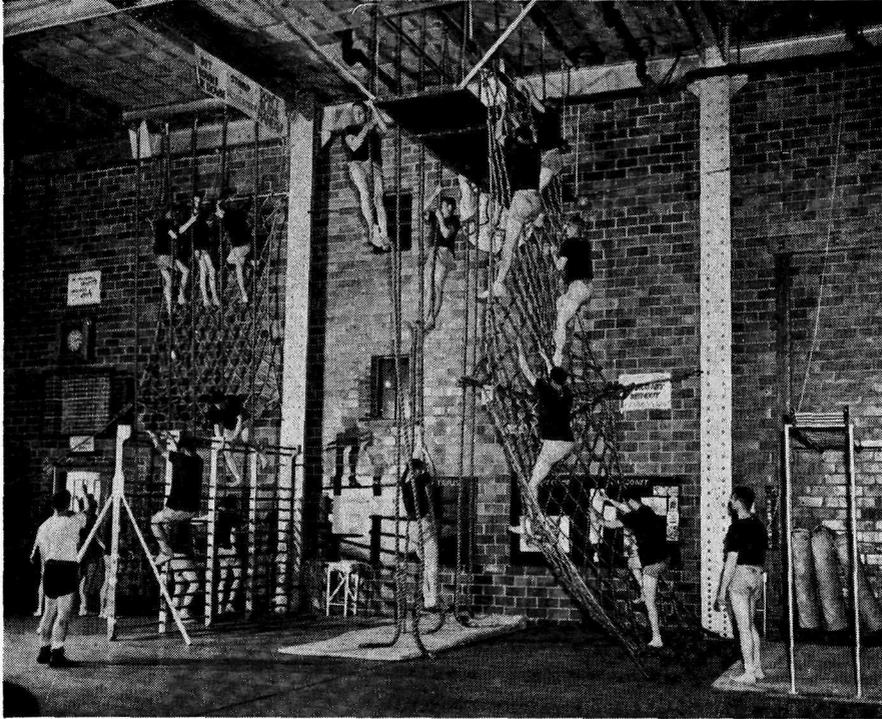


PLATE 480

CARGO NET

Rope climbing training may be supplemented to advantage if a cargo net is available. If installed, hazards should be reduced to a minimum as far as the average performer is concerned. (See Plate No. 480.) As a greater safety measure, the cargo net should be extended above the platform upon which the cadet mounts. It is also advisable to provide stays which the cadet may reach up and grasp when he is at the top of the cargo net, and which will assist him in lifting first one leg and then his body over the top of the cargo net. The nervous and unsteady feeling that is apt to exist when the platform is level with the top of the cargo net is removed when the cargo net extends up higher than the platform.

The platform should be set high enough to accommodate a six-foot individual and should be enclosed with a railing so that no cadet may fall off.



PLATE 481

Six ropes should be installed on the other side of the platform in order to provide practice in descending the ropes. (Plate No. 481.) To keep hazards at a minimum it is a good procedure to insist that the cadet sit down. In order to enforce the rule an angle-iron railing should be installed about waist high, thus providing a barrier so that the cadet cannot descend the rope from a standing position.

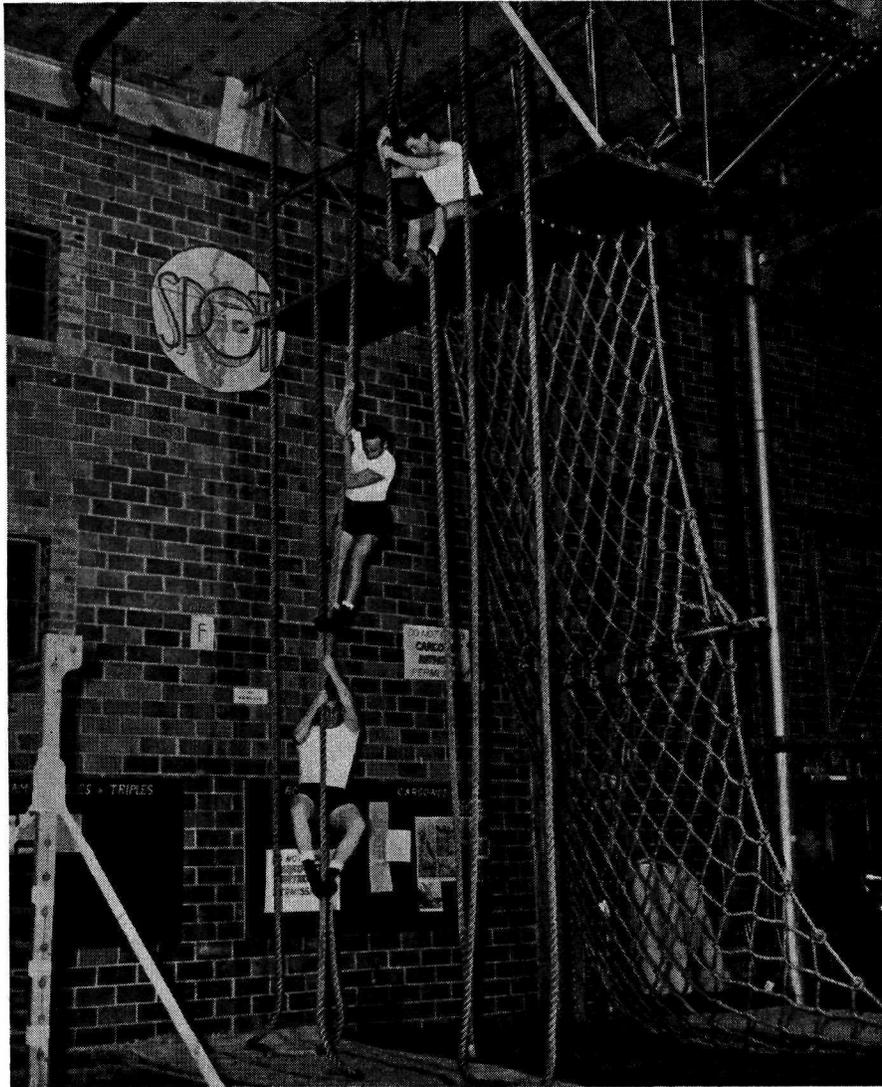


PLATE 482

From a sitting position on the edge of the platform, the stirrup is put on before taking off for the descent. (Plate No. 482.) The cadet is instructed to look down toward the feet and not to slide the hands. By looking downward, he will not hit the back of his head on the edge of the platform. This procedure should be followed in any type of rope climbing. When two or more men are on the rope at the same time, the stirrup cannot be put on; the descent is made by flexing



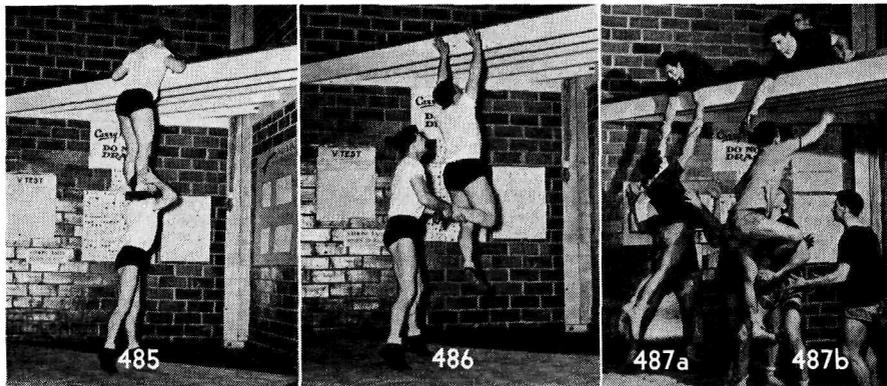
PLATE 483

slightly at the waist and pushing hard against the rope with the soles of the feet. (Plate No. 482.) Here again, the cadet must remember to look downward so that he does not interfere with the man below. This same procedure should be followed if the cargo net is installed against the bulkhead. (Plate No. 483.) Look upward when ascending! Look downward when descending!

CLIMBING SHELF

Singles

- 484—(a) *Hip Circle Mount*.—Reverse grasp—Lift hips over shelf before lifting head; (b) *Muscle Up Mount*.—Over grasp—Lean forward—Lift one elbow at a time; (c) *Single Leg Mount*.—Chin as high as possible—Throw one leg over shelf—Lift one elbow and kick with free leg!

Doubles

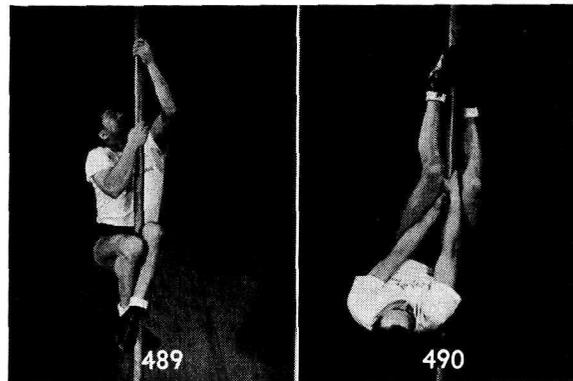
- 485—*Shoulder Stand Mount*.—Mount shoulders and complete climb with a muscle up or with a single leg mount!
 486—*Bent Knee Mount*.—Look upward—Get the timing for the lift—Follow through on lift!
 487—(a) *Pitch Mount*.—Look upward—Get the timing for the lift—Follow through on lift—Complete climb with muscle up or single leg mount; (b) *Assist Partner Up*.—Lean over shelf—Partner grasps wrists—Pull partner up until hands are level with shelf—Change hands one at a time—Complete climb with muscle up or single leg mount!

Dismounts

- 488—(a) *Hip Circle*.—Reverse grasp—Lean well over shelf—Turn over forward;
 (b) *Sit and Push Off*.—Lean slightly forward for the push off—Land on the balls of the feet; (c) *Half Turn to Hang*.—Grasp with both hands at the side of the hip—Turn toward that side to a bent arm hang—Dismount!

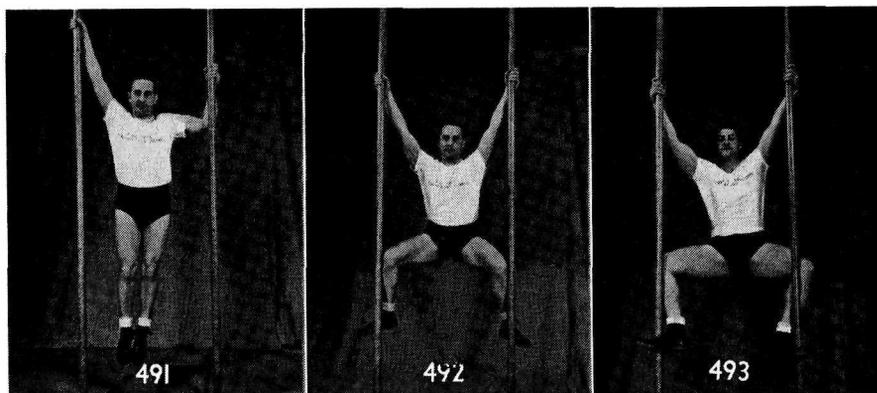
POLES*

Climbing poles are used to strengthen the upper body, arm, shoulder, back and abdominal muscles.

Climbing One Pole

- 489—*One Pole Climb*.—Knees are drawn up, feet around the pole—Hips can be straightened. Hands are free to reach upward hand over hand!
 490—*Inverted Climb*.—Feet close to pole—Climb hand over hand!

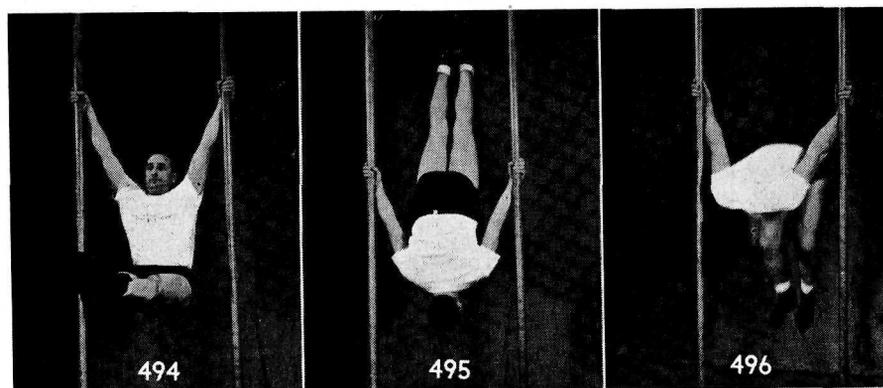
* See p. 283.

Climbing Two Poles

491—*Two Pole Climb*.—Climb by alternating left and right hand on pole. Weight is held by the arms—Feet are free!

492—*Knees Inside*.—Climb with knee inside. Feet outside!

493—*Knees Outside*.—Climb with knee outside. Feet inside!

Hangs on Two Pipes

494—*Half Lever*.—Hang with arms extended—Feet extend frontways from hips parallel to deck!

495—*Inverted Hang*.—Hang by hands—Feet extend upward—Head downward!

496—*Skin the Cat*.—From an inverted hang, bring feet down rearways and hang!

CHAPTER X

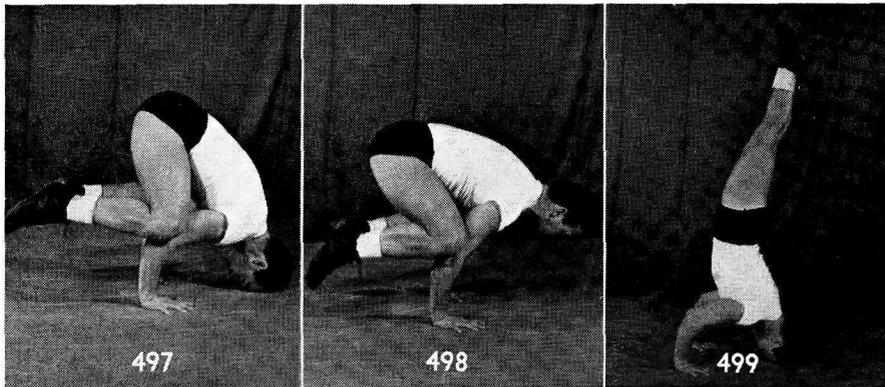
Balancing and Tumbling Activities

BALANCING

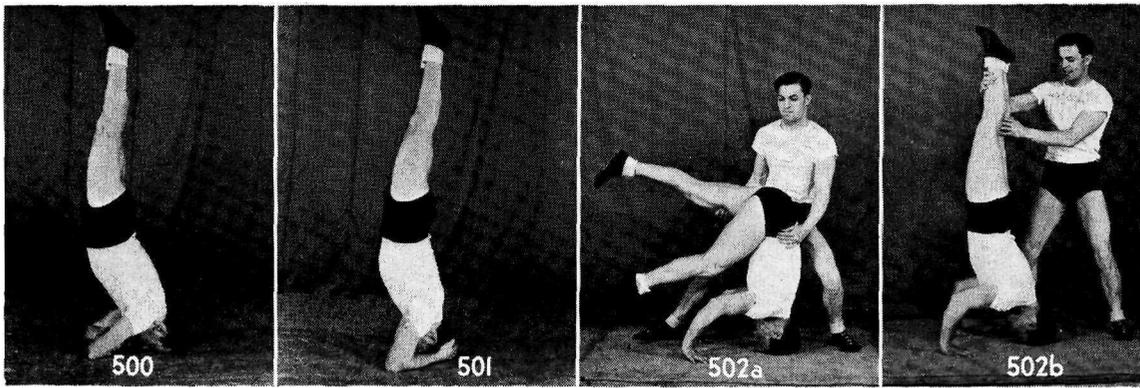
SINGLES

Balancing and Tumbling contribute to the development of coordination, strength, endurance and agility. The cadet should be able to proceed with confidence and safety since he will be able to fall properly if the emergency arises. For additional material on singles balancing and tumbling, refer to articles in the "Athletic Journal" and the "Journal of Health and Physical Education" by Hartley Price.

Squat Head and Hand Balances



- 497—*Squat or Frog Head Balance or Head Stand.*—Knees on elbows—Keep hips high—Rest head on hairline—Fingers pointed forward—Bend arms slightly!
- 498—*Squat or Frog Hand Balance.*—Knees on elbows—Bend arms slightly—Head up—Fingers pointed forward—Push knees against arms and arms against legs—When balanced, eyes are directed downward—Arch hands—Grip floor with finger tips!
- 499—*Head Balance.*—Rest head on hairline—Hands shoulder width apart—Head about ten or twelve inches in front of fingers—In kicking up one knee should be close to hand—Keep the other extended and back—Push off flexed leg as extended leg is kicked upward—Keep weight of body on hands—Body arched—Lift one leg at a time into position—Flex at waist in returning to starting position!

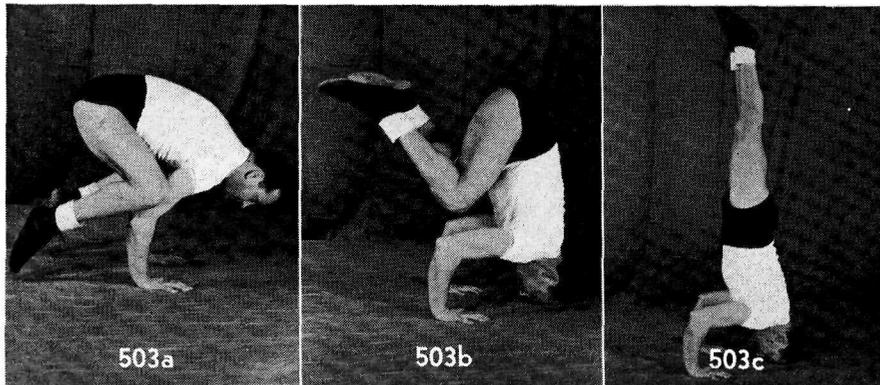


500—*Head Balance, Arms Folded.*—Keep weight of body on arms—Head on the mat at hairline—Arched back—Pointed toes!

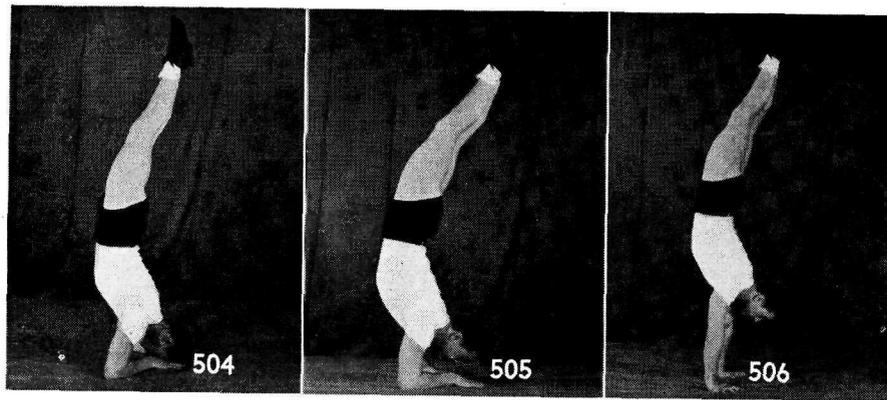
501—*Head Balance, Hands Behind Head.*—Lock fingers behind head—Forearms flat on mat—Keep weight of body on forearms—Heels in line with back of head—Arch back—Keep elbows at shoulder width—Flex at waist in returning to starting position!

SAFETY HINTS.—Keep the neck muscles tight—When off balance, tuck and forward roll—Work across the mat—In returning to mat, flex at waist—Do not return with body straight!

502—*Spotting.*—(a) Work with assistance at first—The beginner is almost lifted into correct position; (b) Keep the performer in correct position!



503—*Squat Balance to Head Balance.*—(a) Keep hips up; (b) Lower head to mat at hairline; (c) Keep weight on hands when going up!



504—*Elbow Balance*.—Form a cup with the thumb and forefinger of each hand—Hands flat on mat—Place forehead in cup on mat—Forearms flat on mat—Keep elbows at shoulder width—Weight back on elbows—Heels in line with back of head—Arch back—Point toes!

SAFETY HINTS.—In returning to mat flex at waist—Do not return in an extended position!

505—*Forearm or Tiger Balance*.—Rest on forearms—Fingers pointed forward—Head up—More weight on hands than in the elbow balance—Keep elbows at shoulder width—Try to make a right angle with upper arm and forearm—Back arched—Point toes!

SAFETY HINTS.—In returning to mat flex at waist—Do not return in an extended position!

506—*Hand Balance*.—Arms straight—Head up—Balance with upper back—Heels in line with back of head—Feet together and toes pointed—Fingers pointed forward—Slight arch in hands, rest mainly on fingers and heel of hands—Grip floor with finger tips—Push up with foot near hands rather than swinging upward with the rear foot!

★ ★ ★

507—*Teaching Procedure*.—Work in pairs—One coaches the other—Hold partner in correct position—Aid learner in bending and strengthening arms!

SAFETY HINTS.—In returning to mat flex at waist—Do not return in an extended position—If overbalanced, tuck and forward roll!

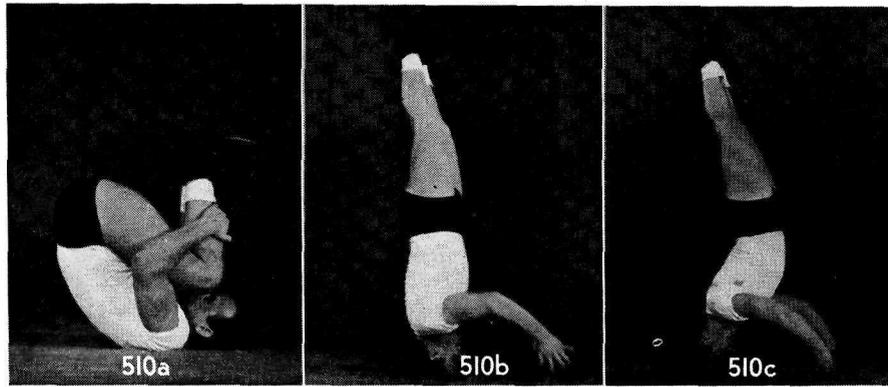
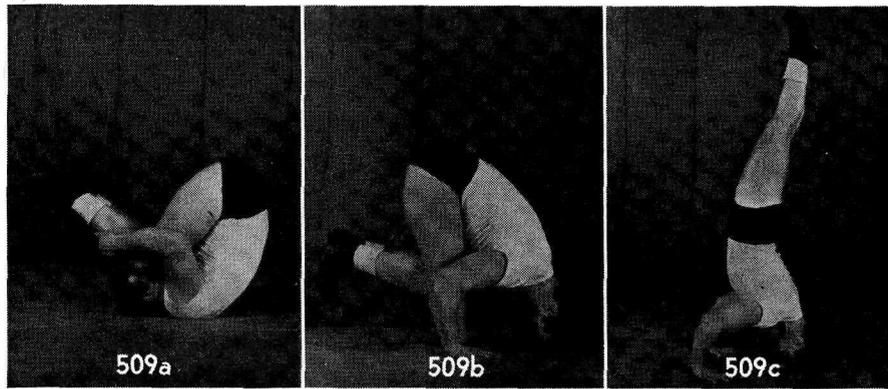
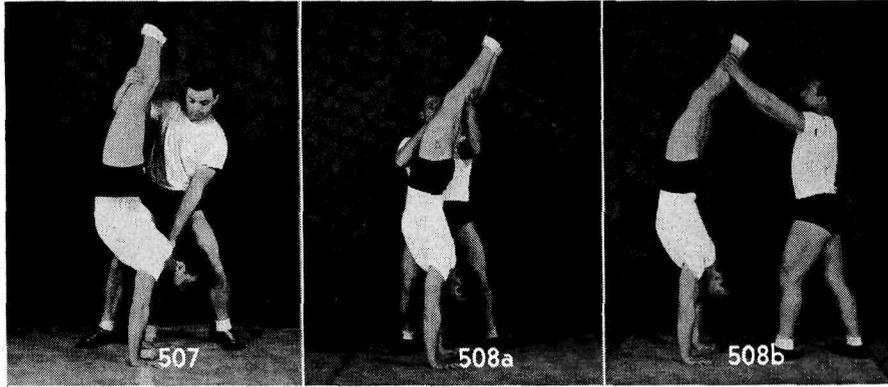
508—*Spotting*.—(a) If the performer tends to hold his position, spot from the side; (b) If the performer tends to move forward, spot from in front, one knee on his shoulder!

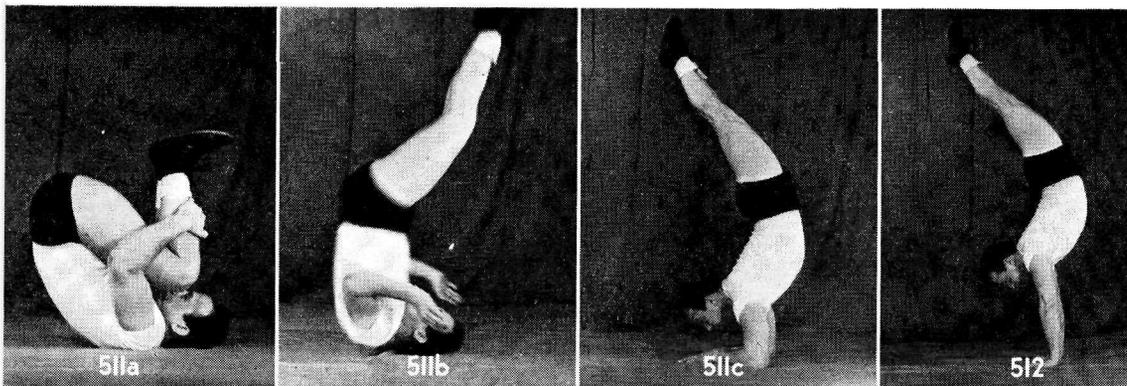
GENERAL HINTS.—Grasp one leg at a time—In returning to position, push down one leg at a time!

509—*Forward Roll to Head Balance*.—(a) Duck head; (b) Wait till you get on feet before kicking; (c) Execute slowly!

510—*Backward Roll to Head Balance*.—(a) Grab tuck—Chin on chest; (b) Roll to top of head before placing hands to the mat—Shoot the legs upward and arch back—A double touch with hands is helpful; (c) Place hands on mat two feet from the head!

SAFETY HINT.—If falling backward, duck head and roll!





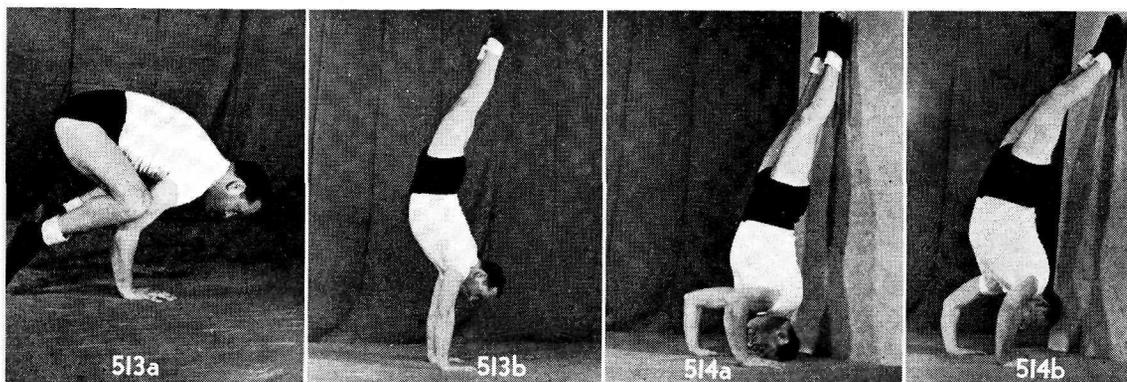
511—*Backward Roll to Forearm Balance.*—(a) Shoot feet straight up; (b) Keep elbows close; (c) Arch body—Toes pointed!

512—*Backward Roll to Hand Balance.*

511—(a) Shoot feet straight up; (b) Push hard with hands!

512—Lift the head back forcefully!

Variations.—Press-Ups.

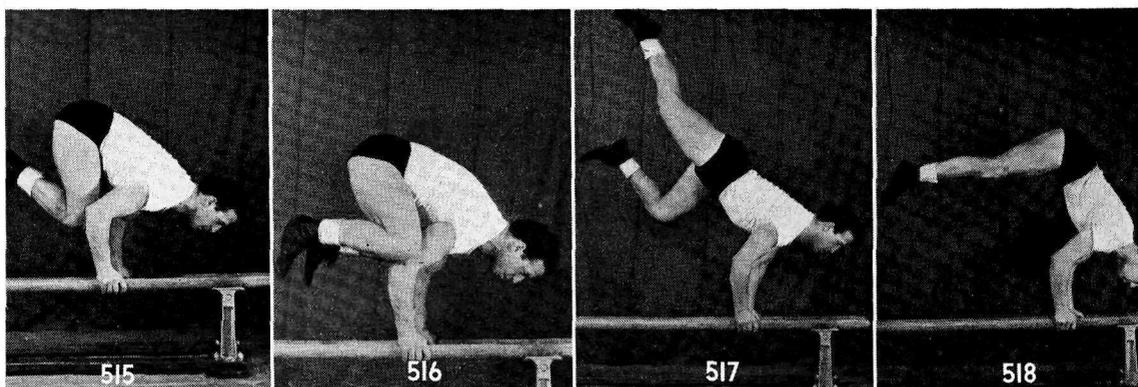


513—*Squat Balance to Hand Balance.*—(a) Keep weight forward—Hips high—Drop feet a little to get a beat; (b) Raise legs up to balance—Keep head up and body arched!

514—*Head Balance to Hand Balance against Bulkhead.*—(a) Bring feet back slightly to put weight on hands; (b) Push hard with hands and put feet back into position—Keep head back and up!

Variations.—Head Balance to Hand Balance.

Try all Hand Balances on Low Parallels.



515—*Tuck Up*.—Keep head up—Hips high—Shoot legs up and push with arms!

516—*Frog Up*.—Lean forward when taking knees off elbows—Keep head up!

517—*Kick Up*.—Keep shoulders forward—Keep head up—Bring back leg up to kicking leg!

518—*Pike Up*.—Keep legs straight—Bend arms slightly—Keep head up—Get hips up high before arching body!

SAFETY HINT.—Spotter alongside and hold legs!

Doubles Balancing (See pp. 190-193)

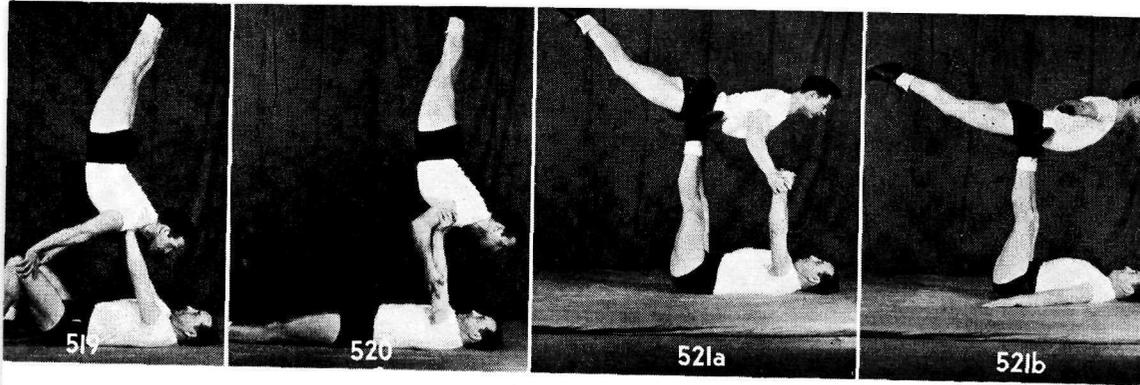
Triples Balancing (See pp. 194-197)

Suggestions for Advanced Singles Balancing

Press-up from forearm to hand balance—Straight leg, bent arm press to hand balance—Straight leg, straight arm press to hand balance—Dead press—One arm balance—Free planche (two arm).

Class Procedure for Balancing

1. Work across mats.
2. Up and down together. (Command or set number of times at will.)
3. Progression of lead-up to hand balance.
 - a. Working in pairs each coaches the other. The assistant holds the learner in correct position. He aids the learner as he bends and straightens the arms. (Plate No. 507)
 - b. Kick up. Partner assists slightly.
 - c. Kick up against wall.
 - d. Put head on rolled mat and kick up to hand balance. This activity stresses the important point that the head must be back. For this activity there should be a spotter.
 - e. Kick up against wall. Try to bring feet back to regular hand balance position. (Plate No. 514b)
 - f. Independent hand balance.
 - g. Hand balance and forward roll when off balance.
 - h. Hand balance and snap down when balance is not attained.
 - i. Hand walk.



DOUBLES

Elementary Doubles

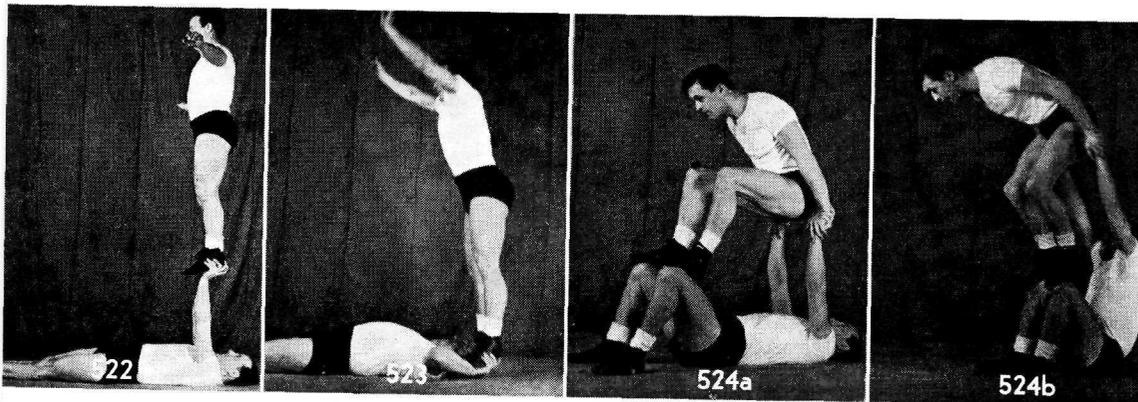
519—*Hand, Knee Shoulder Balance*.—Head up—Back arched—Elbows locked—All weight on bottom man's arms—Shoulder over shoulder!

520—*Arm to Arm Balance*.—Bottom man grasps inside of arms on biceps—Top man grasps outside of arms on triceps—Kick up or press!

Variation.—Top man releases shoulders.

521a—*Belly Swan Balance, Grasping Hands*.—Feet in groin pointing outward—Legs straight—Back arched and head up—Reverse grasp!

521b—*Belly Swan Balance, without Hands*.—Seek points of balance in groin—Hands, arms out straight to side—Look straight ahead!

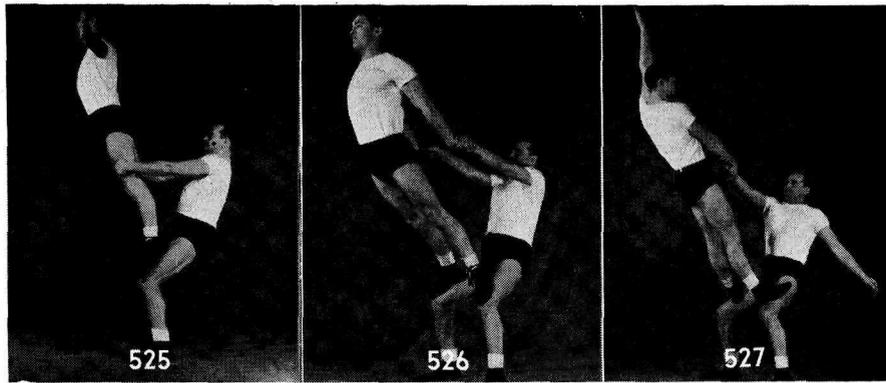


522—*Foot to Hand Balance*.—Top man grasps bottom man's feet until balance is gained—Top man stands rigid—Bottom man does all balancing—Top man looks straight ahead—Bottom man grasps arch of feet!

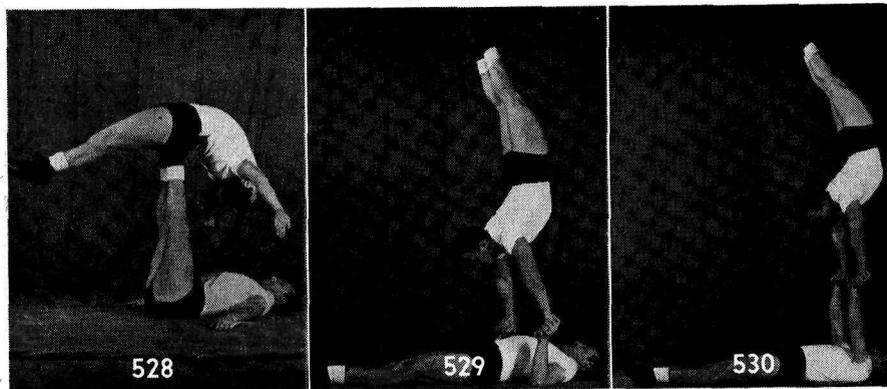
523—*Jump to Foot to Hand Balance*.—Bottom man holds hands steady—Do not reach for feet—Top man places feet in hands—Top man jumps straight up—Do not lean forward—Bottom man does all the balancing!

522—*Foot to Hand Balance*.

524—*Jump Through to Knees and Pull Up to Balance*.—(a) Top man leans forward a little—Bottom man sits up; (b) Top man straightens legs and pulls up with arms simultaneously—Fan out easily to hold balance!



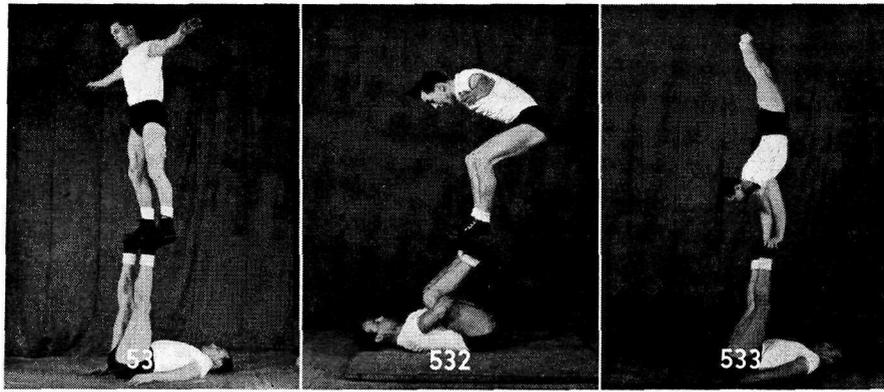
- 525—*Hold-Out (Top mounter stands on knees facing out)*.—Legs straight—Head up—Back arched—Bottom man grasps just above knees—Feet flat on floor—Bottom man leans backward—Mount to sit on shoulder!
- 526—*Hold-Out (Two hands, face to back)*.—Jump up to knees—Fan out easily—Top man arch back—Bottom man leans backward to counteract forward pull!
- 527—*Hold-Out (One hand, facing)*.—Grasp left hand on bottom man's neck—Step up to knees, facing in—Fan out easily—Top man body straight—Both men place left arms over head for balance!



- 528—*Back Balance on Feet*.—Top man lie on bottom man's feet—Bottom man puts feet in small of back—Top man arches and puts head back—Arms out to side!

Intermediate Doubles

- 529—*Low-Low, Hand to Hand, Elbows on Floor*.—Elbows to side on floor—Keep arms rigid and forearms perpendicular to the floor—Use comfortable grip and wrist angle—Top man kick up or press—Bottom man does balancing!
- 530—*High-Low, Hand to Hand, Kick Up, Press Up*.—Bottom man locks shoulders and elbows—Bottom man keeps tight grip—Control top man!

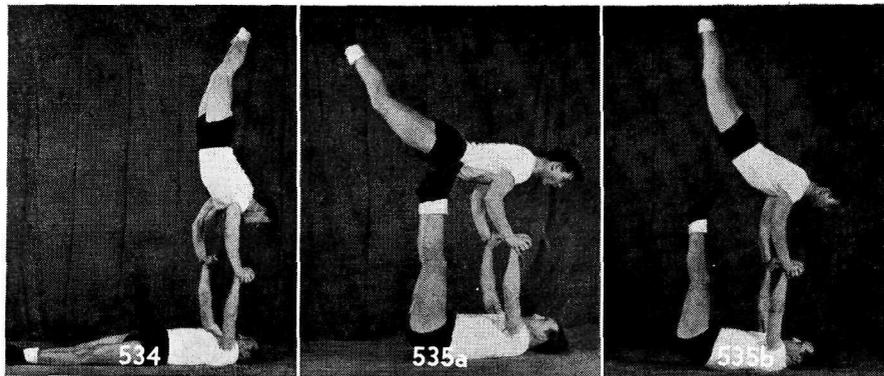


531—*Foot to Foot Balance*.—Mount from third man's shoulders—Feet eighteen inches apart—Top man keeps body straight—Legs straight—Keep soles flush!

Variation.—Face in other direction and mount from buttocks.

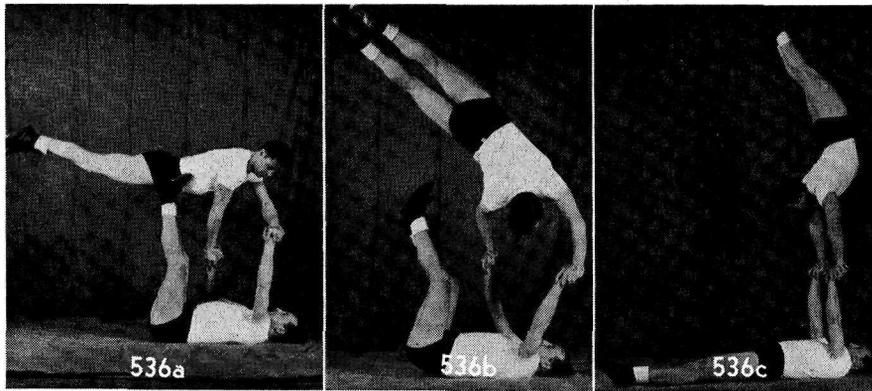
532—*Jump to Foot to Foot Balance*.—Top man takes a couple of steps—Take off from two feet—Keep eyes on the spot—soles of bottom man's feet—Not too much forward momentum—Jump high enough to come down on the spot—Bottom man keeps legs bent to absorb shock and reduce height of jump—Keep heels down and toes up to stop forward motion—When top man is balanced on bottom man's straightened feet, legs are straightened!

533—*Hand to Foot Balance*.—Top man grasps heels of bottom man, press to hand balance—Bottom man keeps legs perpendicular and rigid—Top man does balancing!



534—*Reverse High-Low, Hand to Hand*.—Top man grasps with knuckles on outside—Bottom man grasps with knuckles on inside—Bottom man keeps arms perpendicular and rigid—Top man kicks up or presses up!

535—*Belly Throw to Reverse High-Low Hand to Hand*.—(a) Feet in groin—Bottom man keeps arms straight and perpendicular—Top man whips legs a little when bottom man gives kick; (b) Bottom man bends legs slightly for throw—Throw up and slightly backward!



536—*Belly Throw From Cross Grip to Ordinary Low Hand to Hand.*—(a) Bottom man bends knees ready to throw—Top man leans and twists, keeping weight on hands; (b) Bottom man fights balance; Top man keeps body arched and head up; (c) High-low, hand to hand balance!

Suggestions for Advanced Doubles Balancing

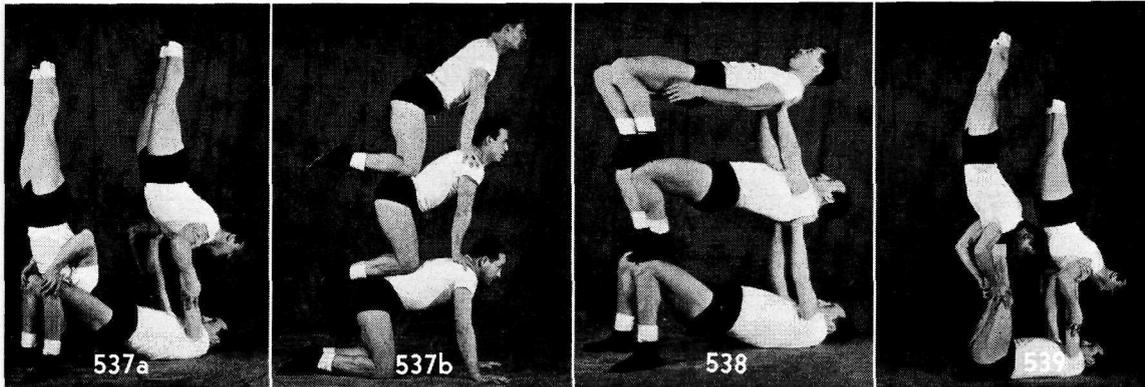
1. *Fairly Advanced Doubles Balancing.*—Back throw to ordinary hand to hand.—Roll down from hand to hand—Roll up to hand to hand: on chest, on knees, on shins—Curl down from hand to hand—Curl up from hand to hand—Half twist from belly swan to seat on feet or back balance—Shoulder-knee-full lever, feet as fulcrum—Chest to back, full lever, hands as fulcrum—Buttocks to back lever, hands as fulcrum—Foot stand on head, holding—Foot stand on head, free—Free shoulder stand on feet—Pitch to stand on shoulders—Foot flag.

2. *Advanced Doubles Balancing.*—High arm to arm: throw up, jump up and press—High hand to hand, press up—Get up, from low hand to hand to high—Get down, from high to low—Get up, one arm or chest balance—Slide down chest from high to shoulder knee lever—Seal or octave rolls both ways—Round-house to a high hand to hand—Cannon-ball to high hand to hand—Get down and get up, foot stand on head—Stand on knees, jump to small of back—Jump to stand on shoulder—Jack-knife hand to hand—Pitch to hand to hand—One hand to hand—Seal or octave rolls, foot to foot.

Possibilities of various doubles balancing routines are numerous and wide in scope. The skill and the comparative weight of the partners determine the relative limit.

A smooth sequence demands a mastering of all the fundamental hand balancing positions. A hand balancing routine demands endurance and stamina. The performers also should learn to take advantage of every opportunity to relax. The routine is most effective when the participants proceed slowly with their tricks. Spotting each other is very important until the trick is mastered.

TRIPLES

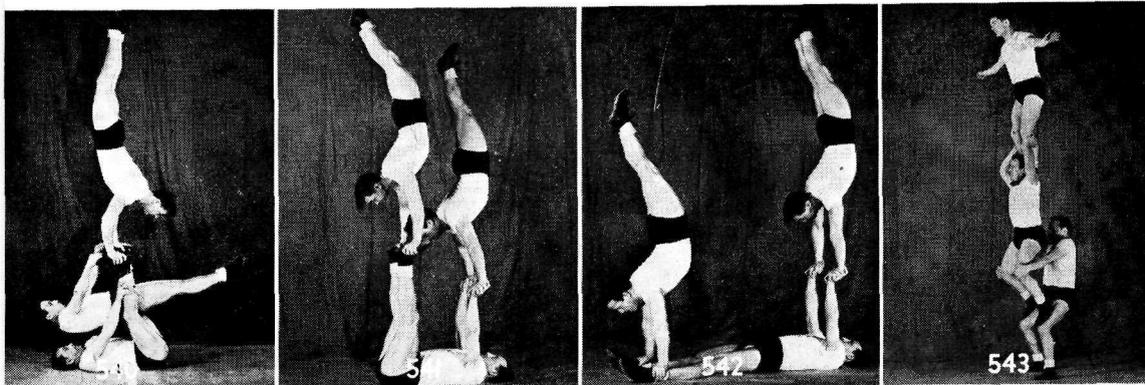
Low Understander or Bottom Man Lying Down

537a—*Arm to Arm, Shoulder Balance on Knees.*—Bottom man keeps body arched—Keep knees apart—Balancers keep bodies arched and heads up!

537b—*"Triple Decker" Hands on Ground and Deltoids.*—Lock arms—Keep body arched—Keep knees wide!

538—*"Triple Decker" Back on Ground, Hands on Scapula.*—Keep body arched—Lock arms—Keep knees wide!

539—*Arm to Arm and Shoulder Balance on Feet.*—Both topmounters hold positions—Understander arches back!

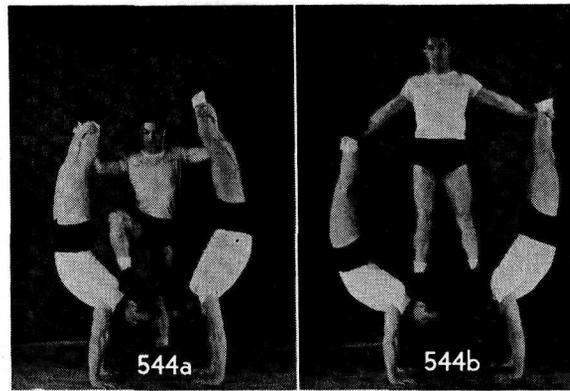


540—*"Father Time."*—Understander on back; middle man does a front lever between knees of understander—Topmounter performs a hand balance on feet!

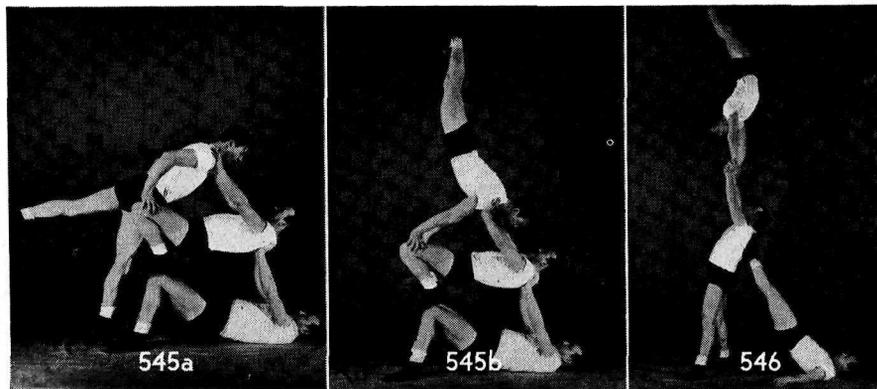
541—*Hand Balance on Feet and Low Hand to Hand Balance.*—Understander on back, feet up—Middle man kicks to a hand balance on feet—Top man does a hand balance on hands of understander!

542—*Variation.*—Hand balance on ankles and low hand to hand balance.

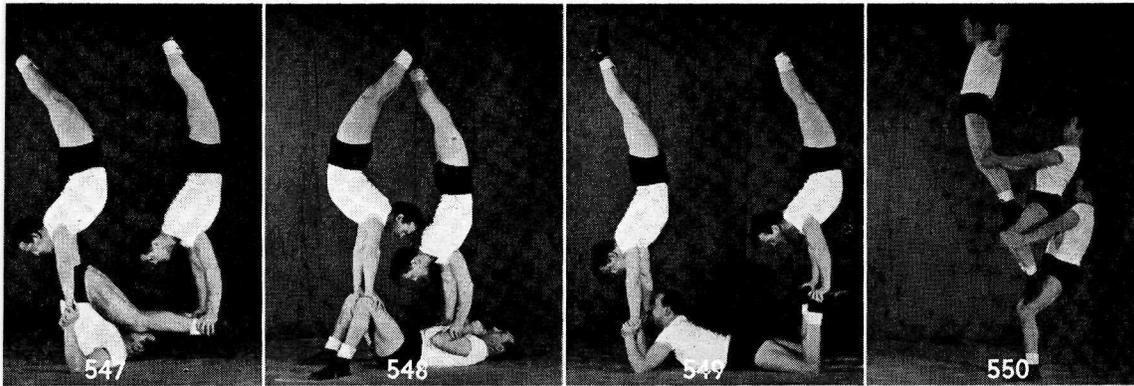
543—*Hold Out, Two High.*—Topmounter is on understander's shoulders before mounting on middle man's shoulders!



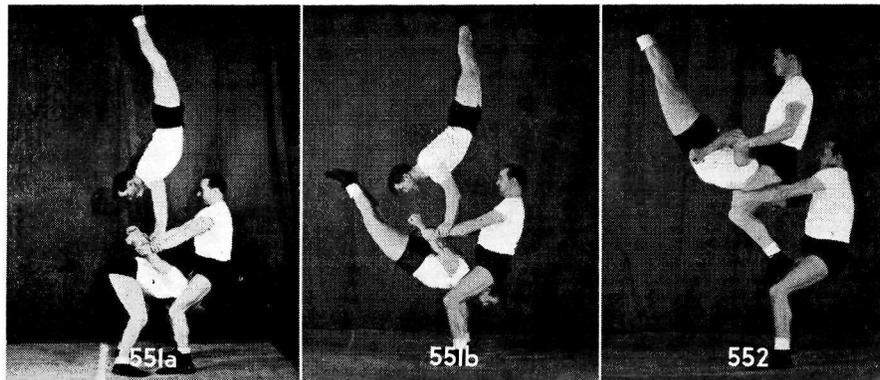
544—“Candle Stick” Double Hand Balance on Floor and Foot Stand on Necks.—
 (a) Middle man holds balance (uses arms); (b) Hand balancers about
 four feet apart!



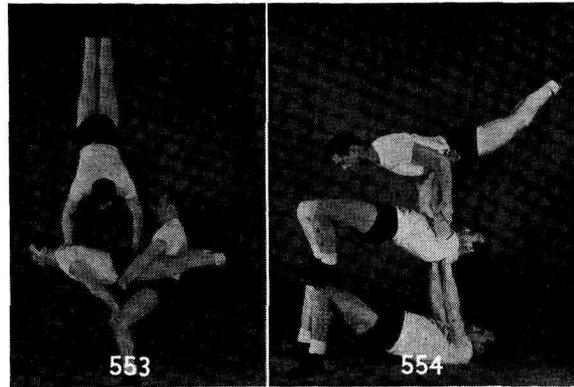
545—“Double Decker” and Knee and Shoulder Balance.—(a) Understander keeps
 knees apart, locks arms—Topmounter get shoulders over as far as possible;
 (b) Keep top man forward—Bodies arched!
 546—“Tepee” (Feet in Back of Middle Man and Hand to Hand).—Top man
 mounts to hand balance from bottom man’s hand!



- 547—*"Pretzel."*—Bottom man keeps hands close to back—Bottom man keeps toes hooked—Both top men kick to hand balance!
- 548—*Elbow and Knee Hand Balances.*—Both men kick up at same time—Bottom man keeps steady!
- 549—*"U" Pyramid.*—Bottom man keeps hands close to shoulders—Keep feet together and cup them—Hand balancers fight to maintain balance!
- 550—*"Double Holdout."*—Top man sits on middle man's shoulders—Bottom man lifts two men and each step out on thighs—Bottom man fights all the time for balance—Bottom man controls equilibrium by counterbalancing.



- 551—*"The Three Jacksons."*—(a) Topmounter holds hand balance first; (b) Middle man pushes out to a lever!
- Variation.*—*"The Three Jacksons"* on elbows (Shoulder knee lever and hand balance on elbows).
- 552—*Hold Out With Back Lever.*—Understander must counterbalance!



553—*Old Faithful*.—Middle man clasps legs around understander's waist—Hold arch—Lock elbows—Understander counterbalances—Topmounter presses hand balance!

554—*Double Decker, Belly Swan on Hands*.—Topmounter mounts on hands of middle man—Hold arch—Head up!

Suggestions for Advanced Triples

"Double Decker" and Belly Swan on hands—"Double Decker" and hand to hand—Standing three high: bounce up, climb up, lean to break—Hold-out on thighs and a high hand to hand—Two high on bottom man's feet—Two high and hand to hand—Triple decker, roll around to knees or back and build up to a three-high.

Triples Balancing is a gymnastic art in which three men execute pyramids of many kinds. These pyramids may be performed on the ground or on apparatus such as tables, chairs, etc. In this branch of gymnastics the human form is used to build pyramids which embody symmetry, strength, skill, endurance and agility. These tricks may be coordinated into smooth and continuous routines.

Triples depend upon the execution of certain basic fundamentals by the three performers: The ability to press hand balances, to execute front and back levers and to make fine adjustments of balance both in standing and hand balancing positions.

All new tricks should be spotted or guarded properly. Progression from the simple to the difficult is essential if injury is to be avoided.

PYRAMID BUILDING

Pyramid building is stimulating to any program of gymnastics and tumbling. It can be adapted to both the beginner and the expert in gymnastics. This training is especially valuable since it depends upon the cooperation and teamwork of every man in the pyramid. In addition, it provides a means of presenting a demonstration or exhibition which will further promote the gymnastic program.

Pyramid building takes care of all available men. The heavy men can be used on the bottom or the base of the pyramid. Average size individuals can be used in the middle and the lightest individuals can be used on top. In every case it is important that the individual selected has the necessary skill, strength and balance to perform his part of the pyramid with confidence.

For simplicity pyramids may be classified into two main groupings:

1. Ground pyramids or pyramids without apparatus.
2. Pyramids on various apparatus, such as parallel bars, side horse, ladders, tables and chairs, etc.

Ground pyramids may be designed on a straight line,* on a curved line, or with a round or square base. They may also be designed so that the pyramids might cross each other in the center. It is also possible to plan ground pyramids so that the pyramid is able to move. Such pyramids are called Marching or Walking Pyramids.

Various combinations of pyramids may also be formed such as:

1. Pyramids using the various apparatus together.
2. Pyramids combining ground and apparatus pyramids.

Planning Straight Line Pyramids

The shape of the pyramid is decided upon and then the men are selected who have the physical qualifications to perform the parts. The smallest number of men who may build an effective pyramid is three.

Pyramids may be formed by grouping the various combinations used in doubles and triples balancing** and group balancing into symmetrical patterns. A pyramid is designed by choosing one grouping as a center piece and by then placing end pieces on each side to make the pattern symmetrical.

Teaching Cues.—A sound base prevents collapse—Heaviest men at the base—Distribute load properly—Lightest on top—Every man should know exactly what he is supposed to do—Full cooperation and confidence in each other should be encouraged—The pyramid should be flexible so that small adjustments may be made without the collapse of the pyramid—Simplicity of design should be the rule—Building and dismounting pyramid should be done smoothly!

Signals for Building the Pyramid

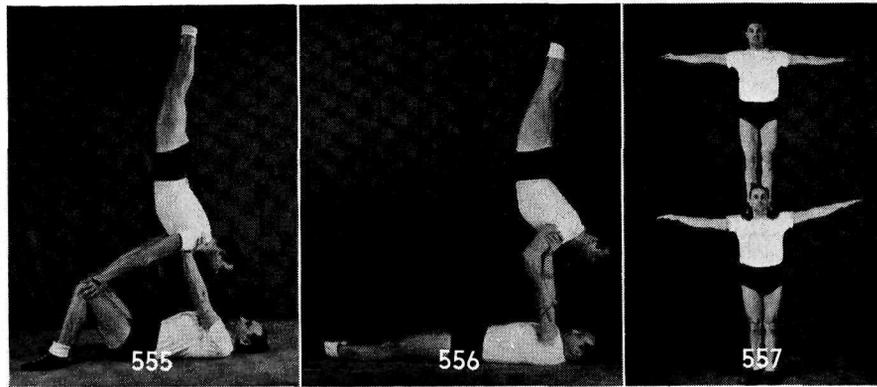
Start from a straight line with a given signal—Return to the straight line after each pyramid—The leader of the group will call the cue number to build the pyramid: Count 1, Bottom men take positions; Count 2, Top men take position ready to mount; Count 3, Mount—Everybody in position—Hold; Count 4, Dismount—Return to straight line on the double! Increase the counts when a large group is used—For a skillful group the counts may be reduced!

* This discussion will be restricted to straight line pyramids.

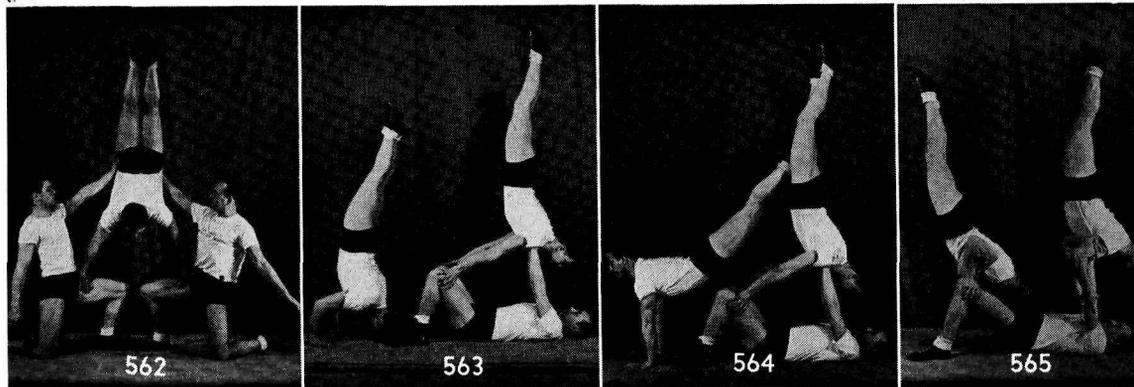
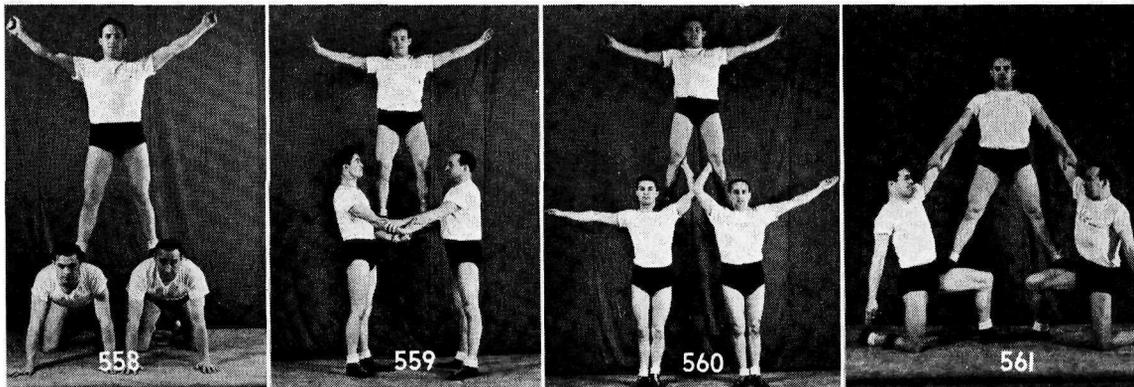
** See pp. 190-197, 312, 448 on Doubles and Triples Balancing.

Sample Pyramids

Sample Two Man End Pieces.

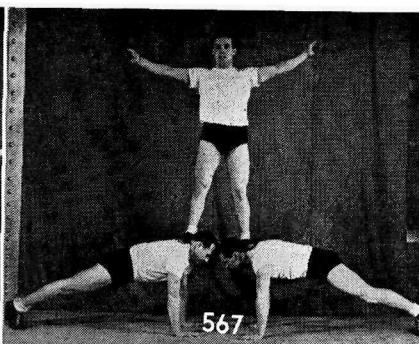


Sample Two and Three Man Center and End Pieces.





566



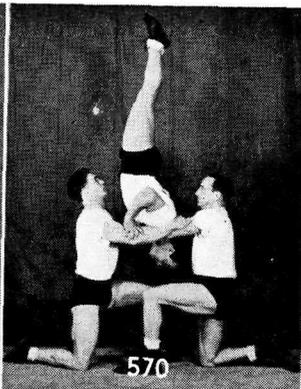
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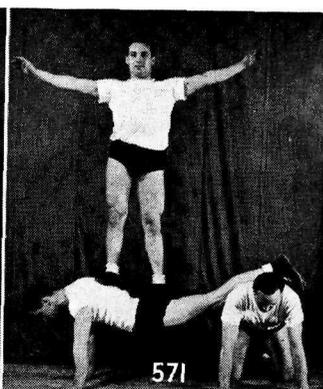
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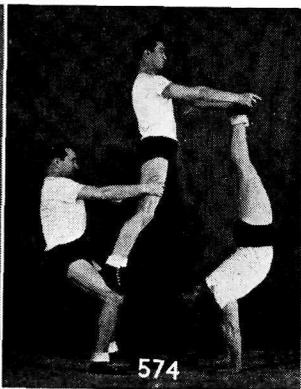
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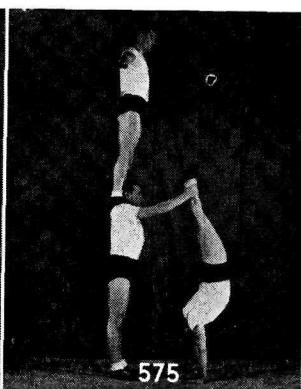
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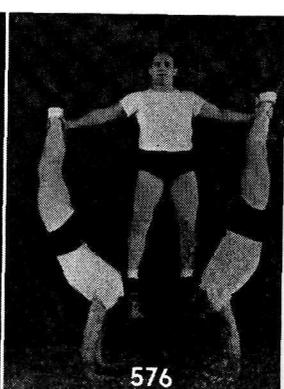
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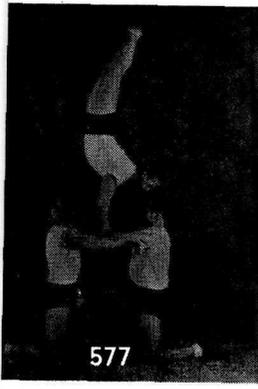
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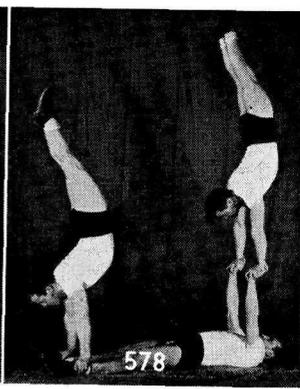
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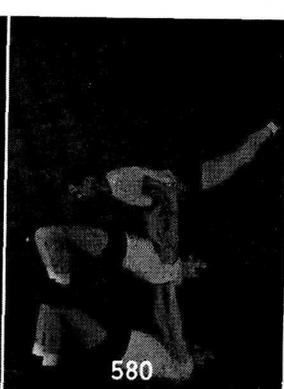
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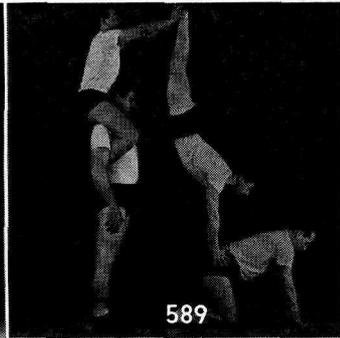
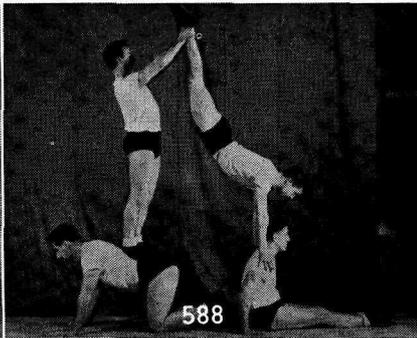
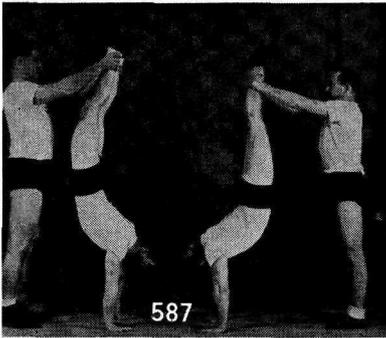
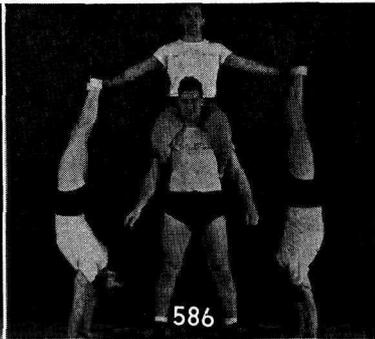
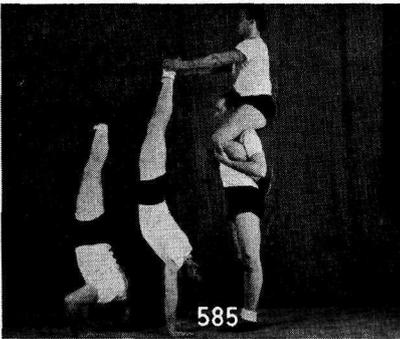
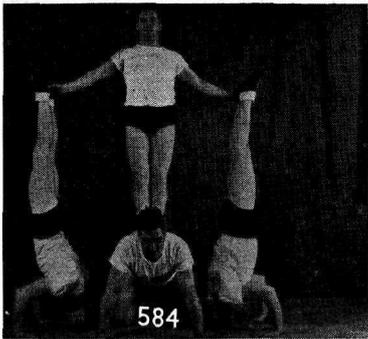
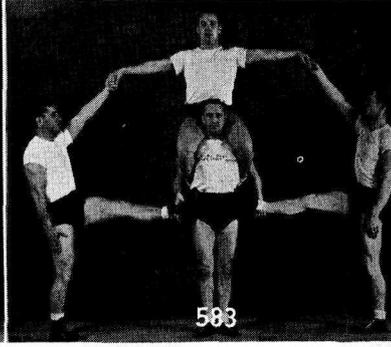
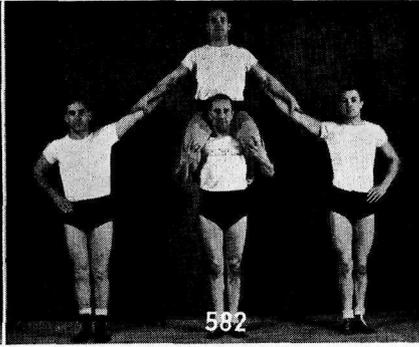
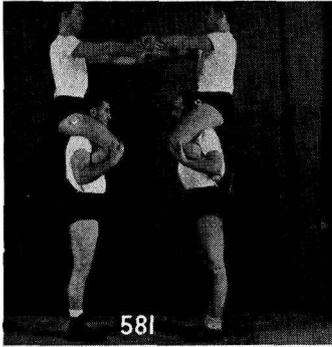


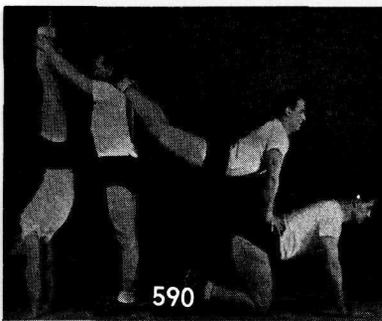
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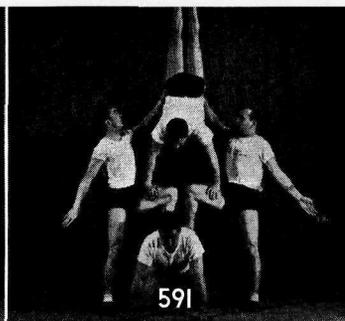
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Sample Four Man Center Pieces.





590

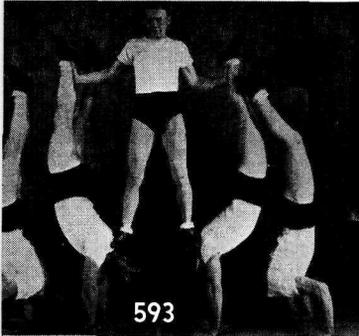


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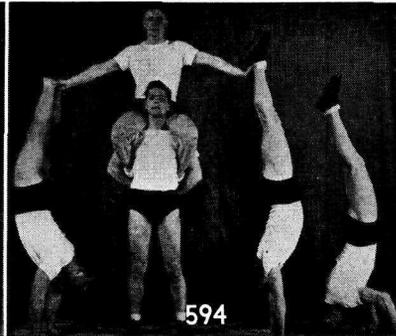


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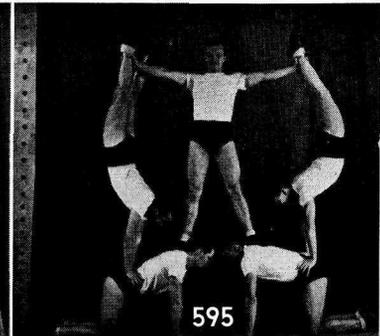
Sample Five Man Center Pieces.



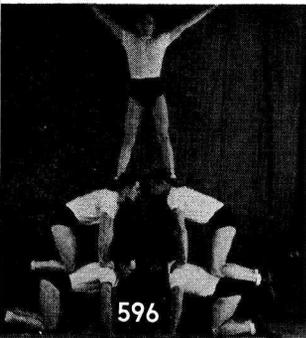
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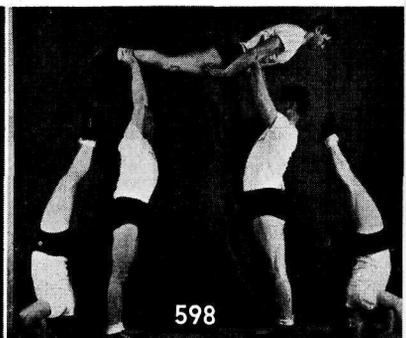
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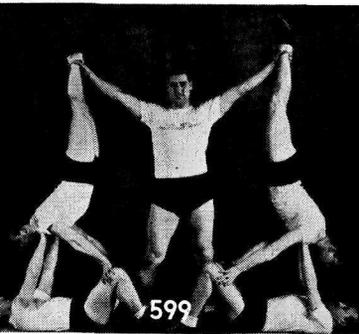
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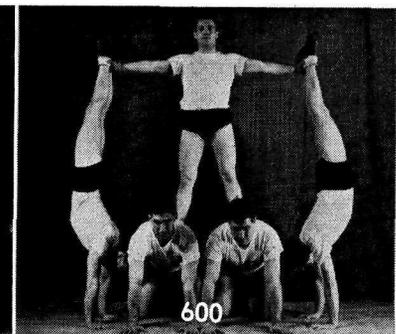
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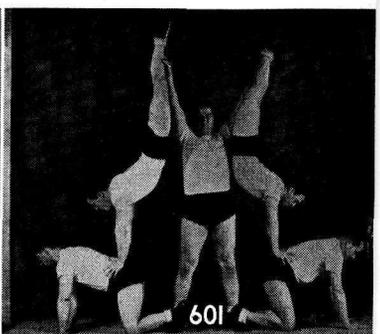
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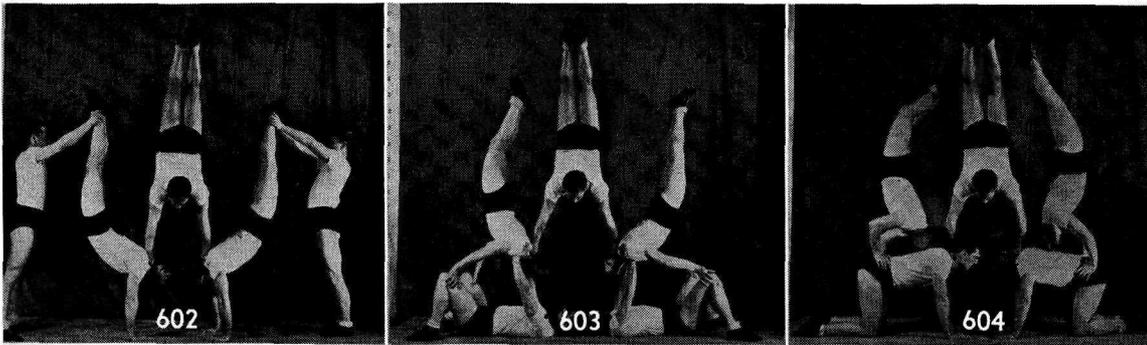
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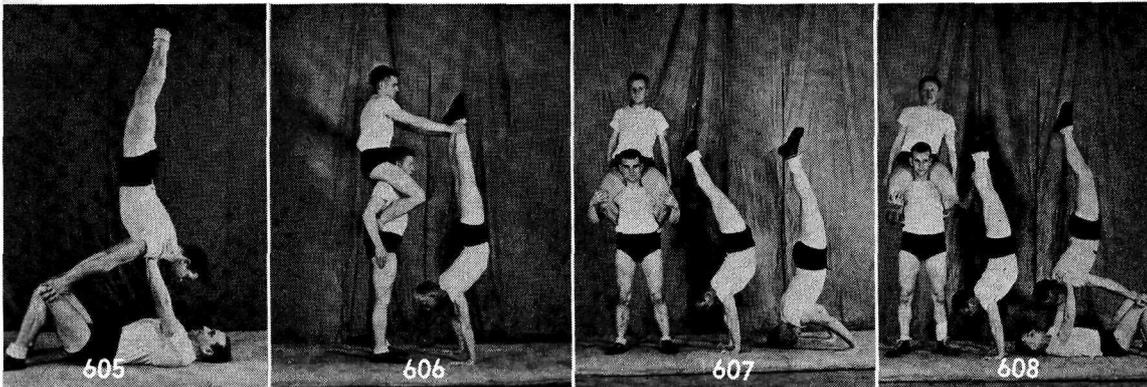


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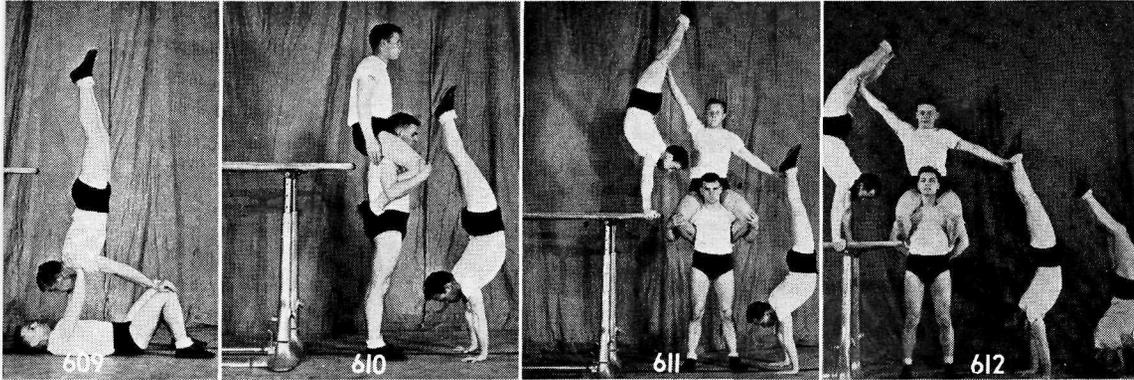
The above may be applied on Parallel Bars, Horse, and Tables and Chairs.
 From the preceding center and end pieces a pyramid may be organized without much difficulty. Such a pyramid can be adapted as a Ground Pyramid or a Pyramid on the Apparatus. The following plates will serve to show the basic plan of building pyramids from the center and end pieces.

Ground Pyramids

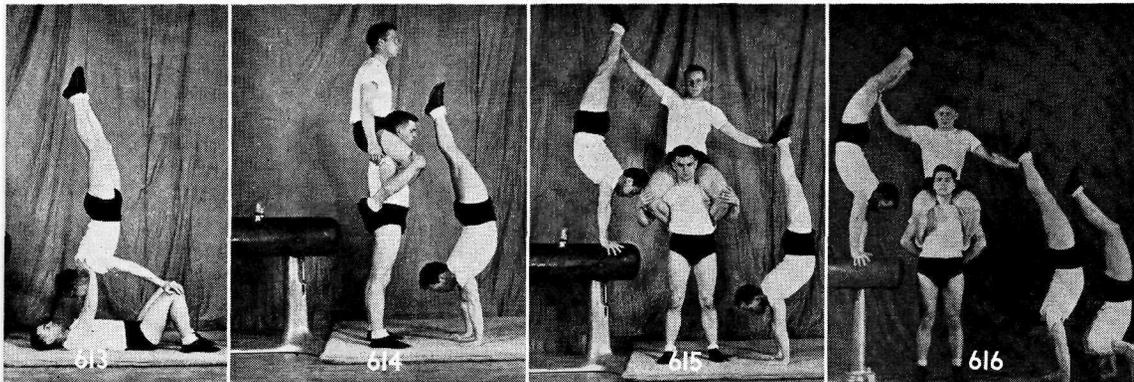


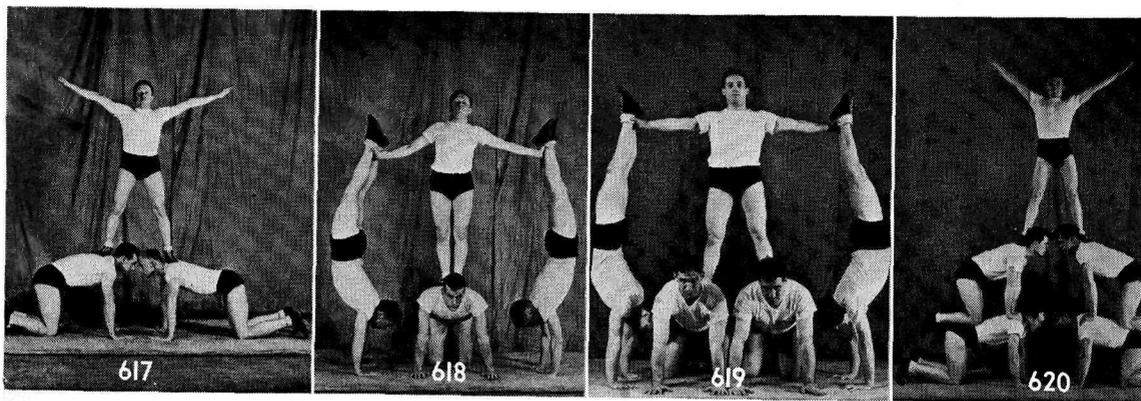
- 605—*Two Man End Piece.*
 606—*Three Man End Piece.*
 607—*Four Man End Piece.*
 608—*Five Man End Piece.*

Application to Parallel Bars.



Application to Horse.





Ground Pyramids

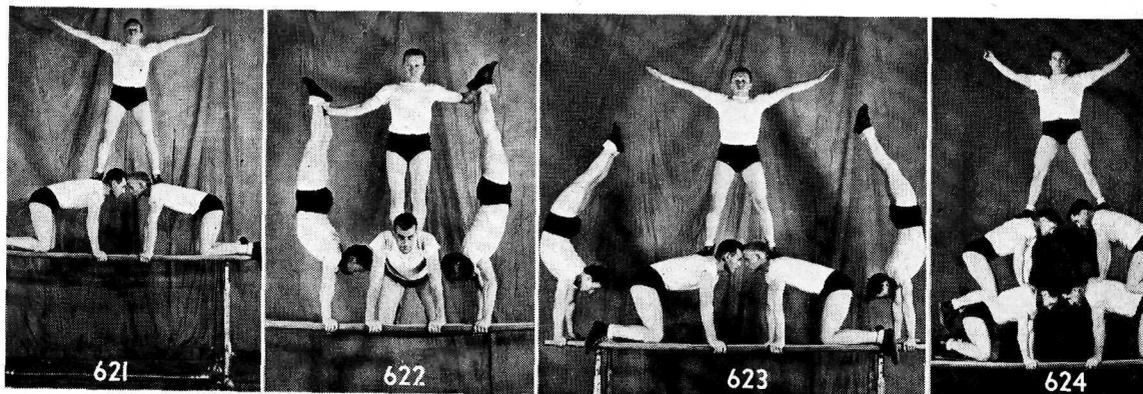
617—*Three Man Center Piece.*

618—*Four Man Center Piece.*

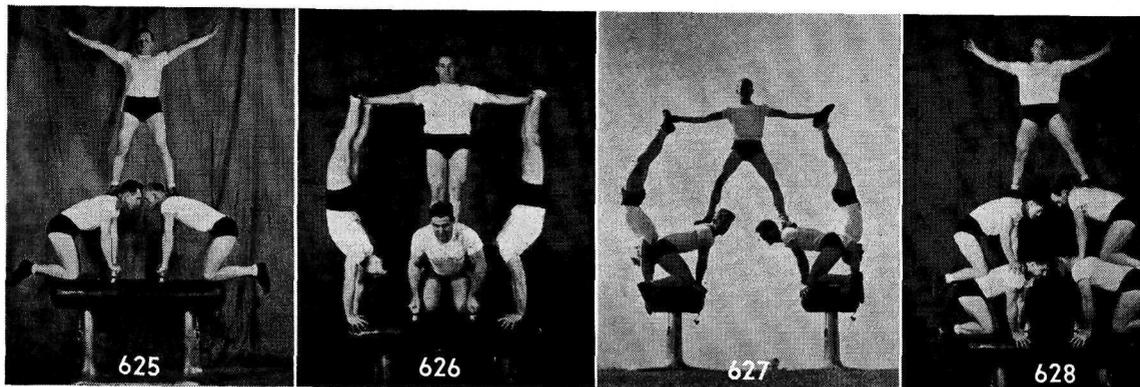
619—*Five Man Center Piece.*

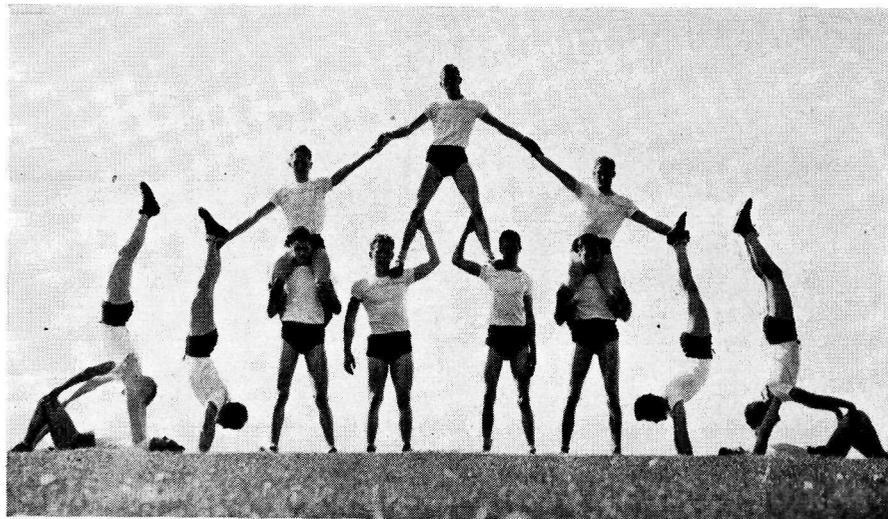
620—*Five Man Center Piece.*

Application to Parallel Bars.

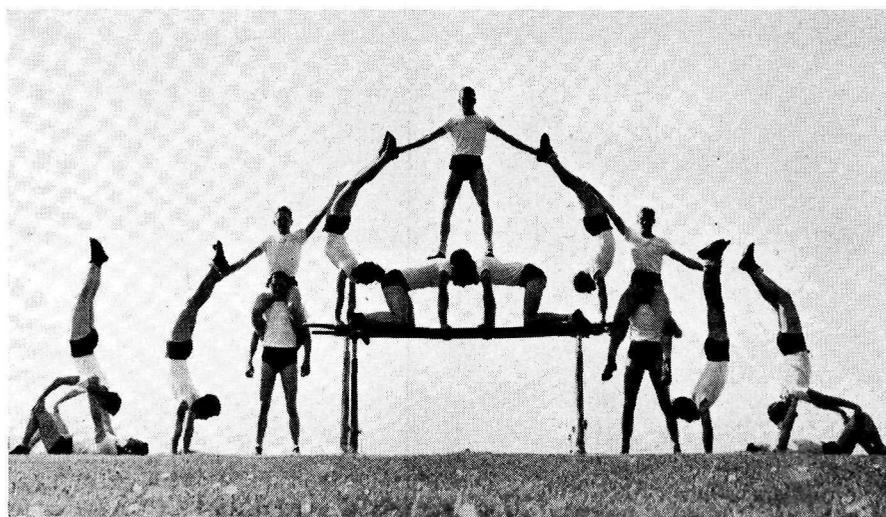


Application to Horse and Buck.

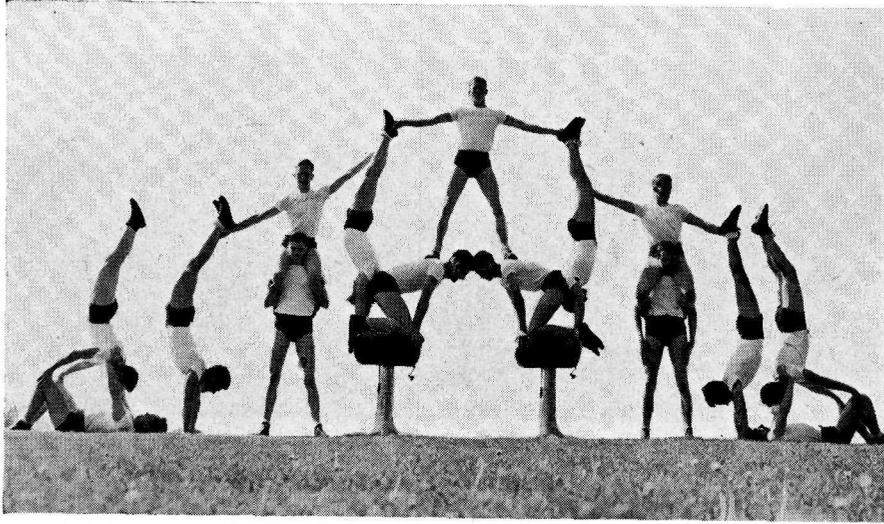




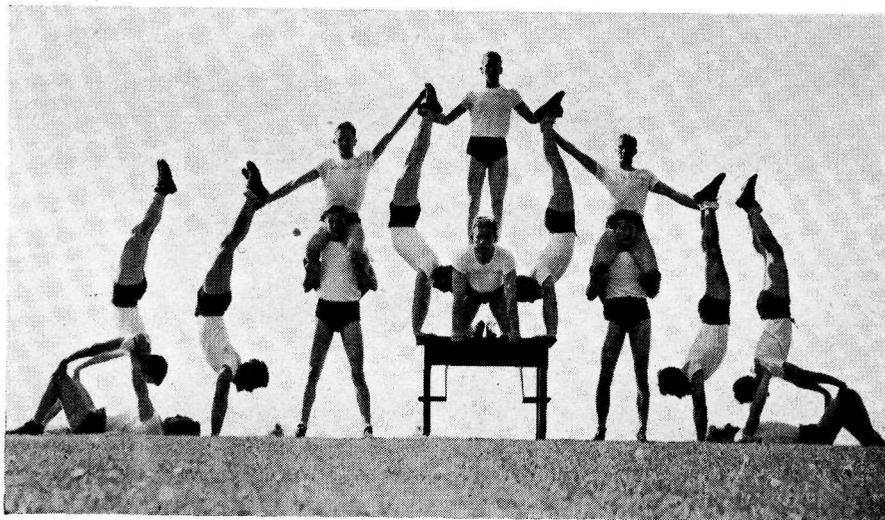
629—*Sample Ground Pyramid.*



630—*Sample Parallel Bars Pyramid.*

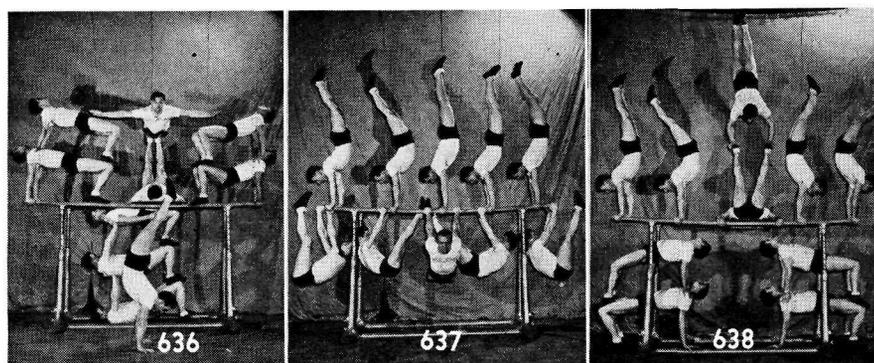
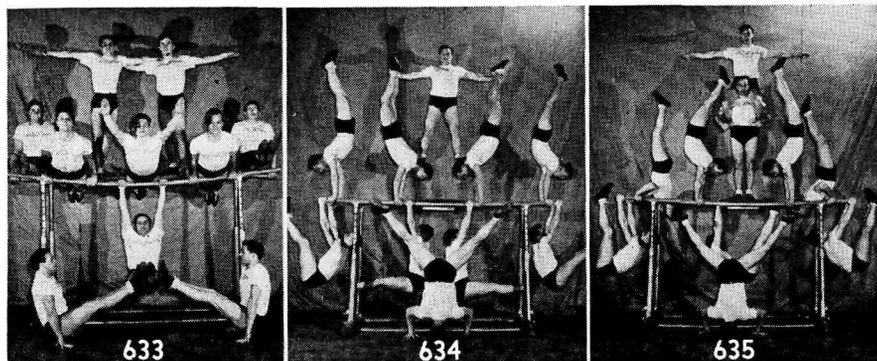


631—*Sample Buck Pyramid.*



632—*Sample Tables and Chairs Pyramid.*

Suggestions for More Advanced Pyramids



Suggestions for More Advanced Ground Pyramids



PLATE 639

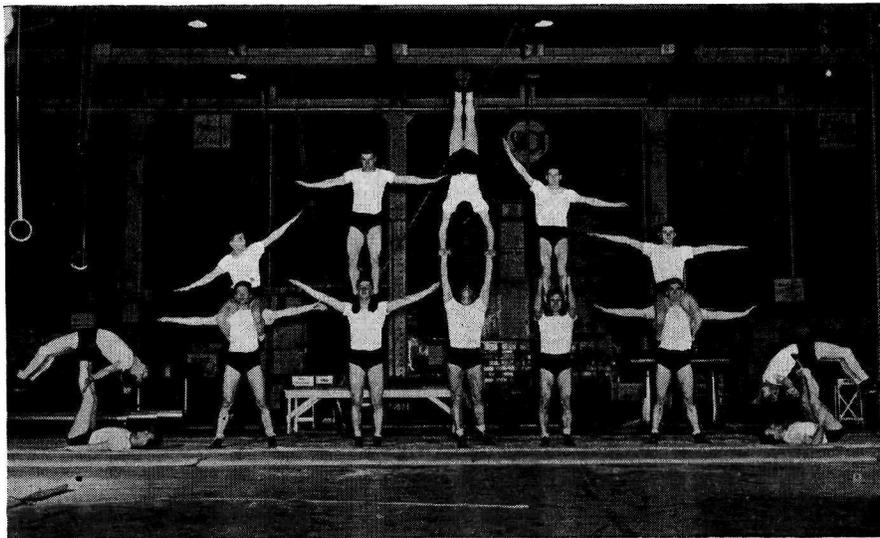


PLATE 640

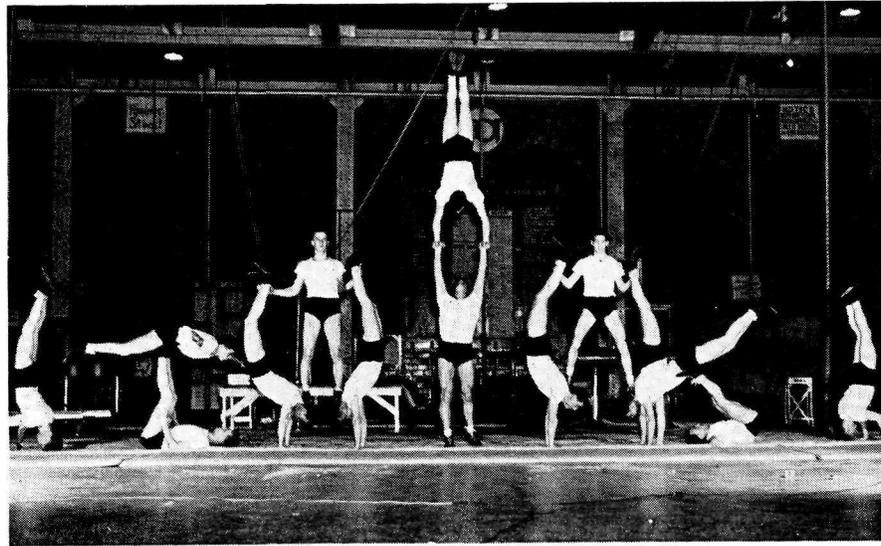


PLATE 641

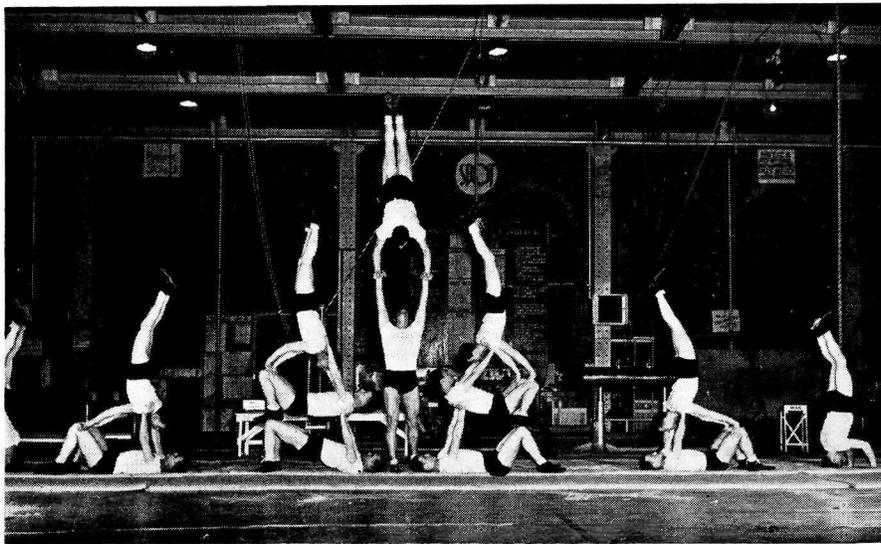


PLATE 642

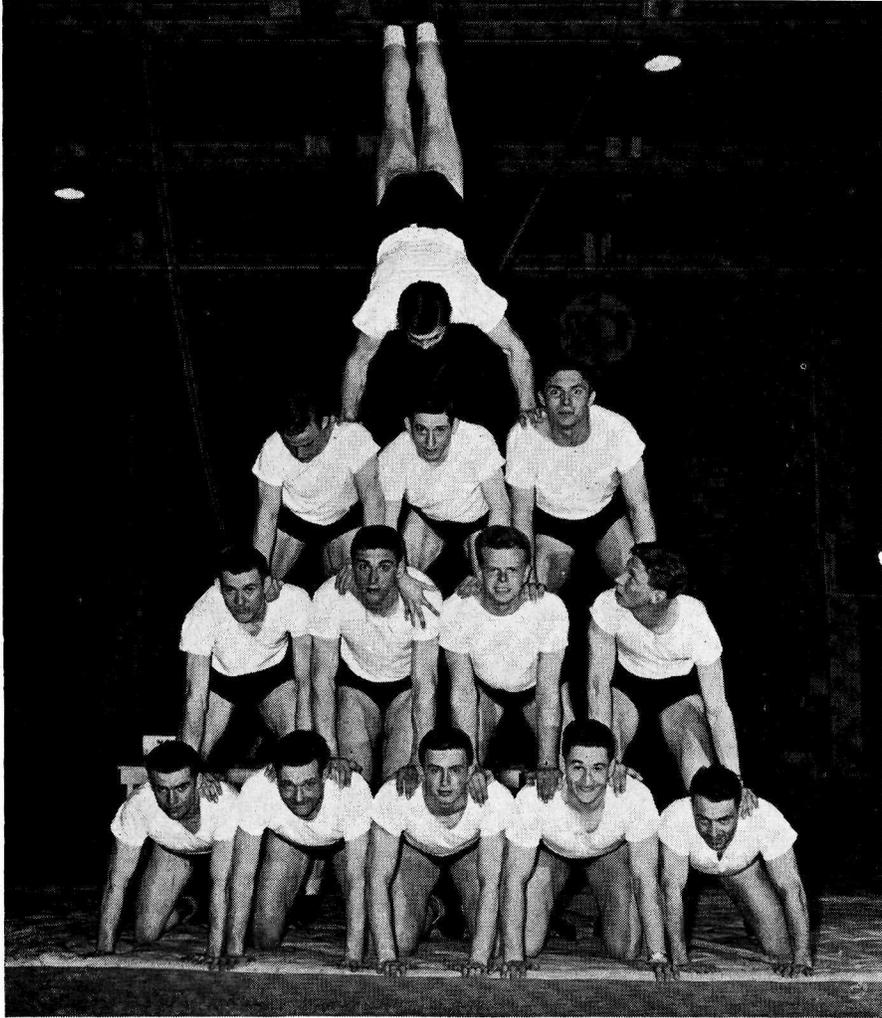


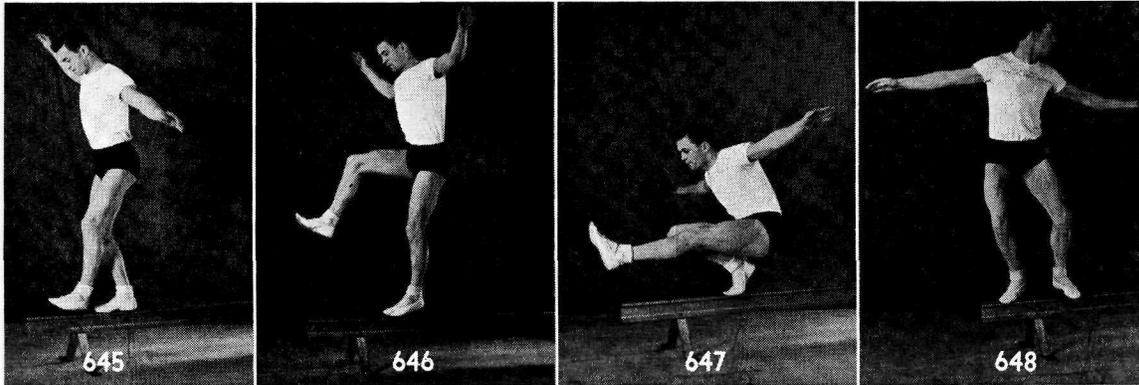
PLATE 643



PLATE 644

BALANCE BEAM

Activities on the Balance Beam provide excellent training in balancing. The following activities* may be done on horizontal beams ranging in height from about eighteen inches to about three feet from the ground. The work may also be done on an inclined balance beam. Balance beams that are three feet from the ground may be used for vaulting.

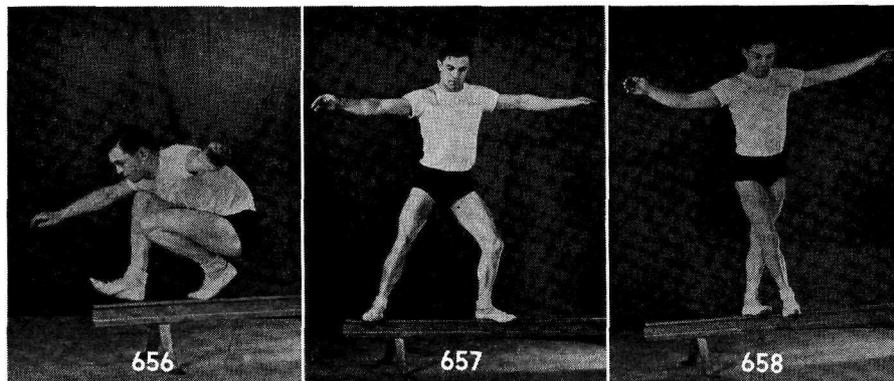
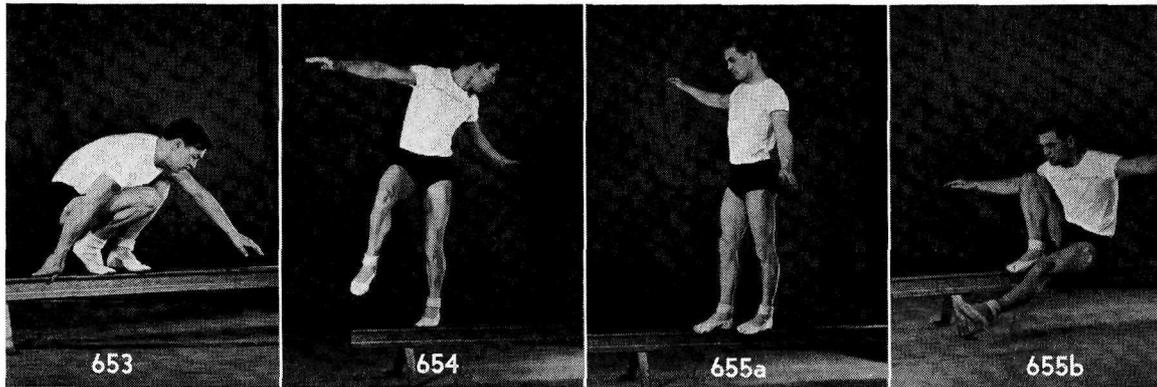
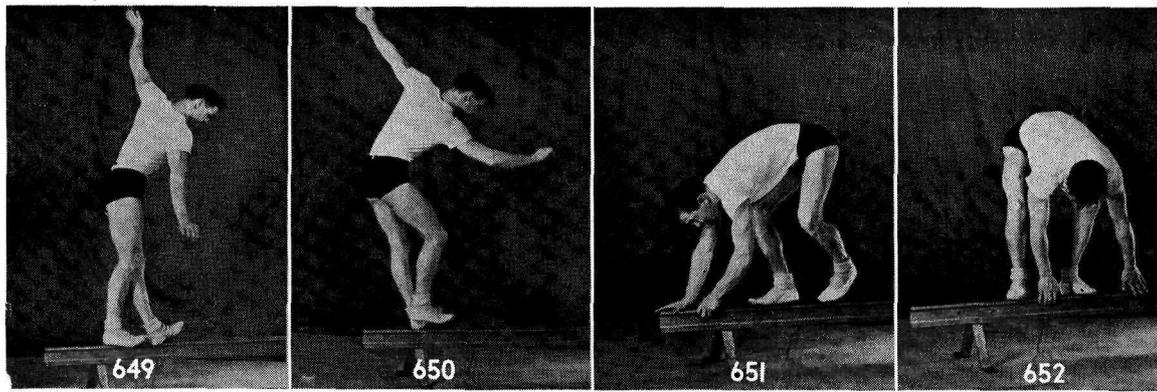


- 645—*Walk Forward and Backward.*—Arm extended sideward to aid in balancing—Take short steps—Flex knees slightly!
Variations.—Run forward and backward.
- 646—*Hop Forward and Backward.*—Arms extended sideward—Bend knee!
Variations.—Hands forward, Hands sideward, Hands upward, Hands behind back, Arms folded, Eyes closed.
- 647—*Squat on One Leg.*—Keep shoulders forward—Arms extended sideward—Keep free leg forward!
- 648—*Turn on Balance Beam.*—Arms extended sideward—Turn on the balls of the feet!
Variations.—Hands forward, Hands sideward, Hands upward, Hands behind back, Arms folded.

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- 649—*Walk Forward on Heels.*
- 650—*Walk Backward on Heels.*
Variations.—Hands forward, Hands sideward, Hands upward, Hands behind back, Arms folded.
- 651—*Cat Walk.*—Forward and backward—Walk on all fours—Take short steps!
- 652—*Cat Walk.*—Sideward—Walk on all fours—Take short steps!
- 653—*Full Turn in Catwalk Position.*—Turn close!
- 654—*Full Turn One Leg.*—Arms extended sideward—Turn on the ball of the foot!
- 655—*Stand, Sit on Beam, Stand.*—(a) From stand lean forward; (b) Squat on one leg before sitting—From sitting lean forward to squat, then stand!

* Other balance beam stunts appear in the syllabus.

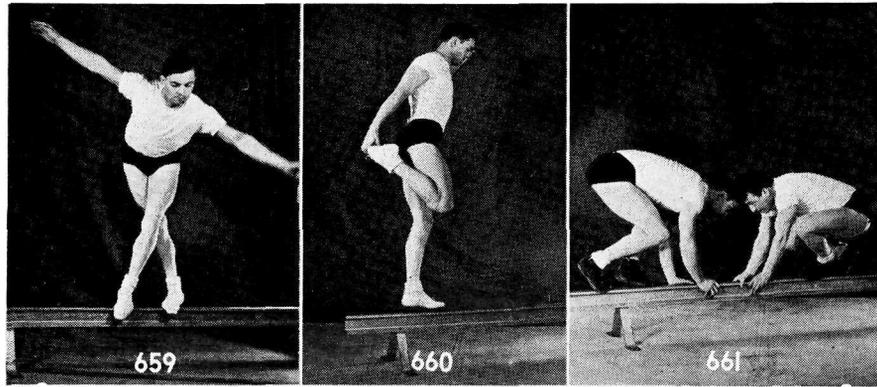


656—*Duck Walk*.—Walk in full squat position!

Variations.—Hands forward, Hands sideward, Hands upward, Hands behind back, Arms folded.

657—*Travel Sideward Sliding Feet*.—Slide foot—Don't step over foot!

658—*Travel Sideward Stepping Over Front of Foot*.—Take short steps!



- 659—*Travel Sideward Stepping in Back of Foot.*—Take short steps!
 660—*Hop Length of Beam Holding Heel of Free Foot.*—Take short hops—Hop on ball of foot!
 661—*Head Wrestling.*—Tight grip on rail—Push with feet and head!

Suggestions for Advanced Balance Beam

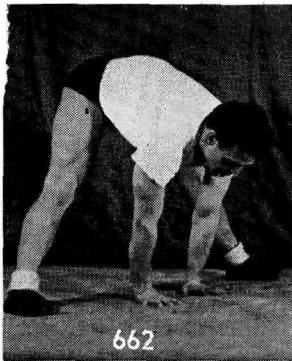
From side stand, half cartwheel to handbalance—Forward roll to seat, forward roll to dismount—Cartwheel—Handbalance Dismounts (Straddle, Squat and Stoop)—Single rear vaults from cross straddle seat—Horizontal single kneestand swan (with and without hands—Walking on hands.

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JUMPS

Various forms of jumps may be used to advantage for the purpose of conditioning and a preparation for elementary tumbling and balancing. The variety of such jumps is wide, and some suggestions are shown in the plates below:

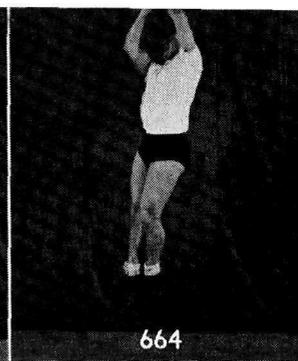
- 662—*Straddle, Forward and Backward.*
 663—*Hopping, Left and Right Foot.*
 664—*Jumping—Half and Full Pirouettes.*
 665—*Running Length of Mat* using left foot to left side and right foot to right side.
 666—*Running Length of Mat* using left foot to right side, and right foot to left side.
 667—*Straddle Forward and Backward with Hand Clapping.*—(a) Feet apart, hands sideward; (b) Feet together, hands on hips!
 668—*Running on All Fours, Forward and Backward (Left and Right).*
 669—*Lame Dog, Running on Hands and One Foot (Right and Left).*
 670a and b—*Frog Jump.*
 671—*Rabbit Hop.*
 672—*Squirrel Jump, Hands In, Feet Out (Alternate).*—(a) Feet together; (b) Feet apart!



662



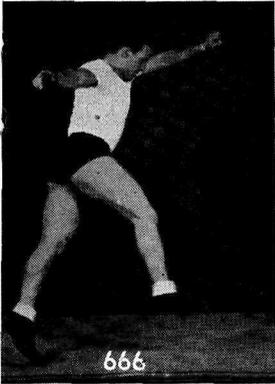
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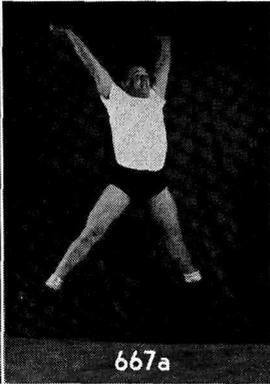
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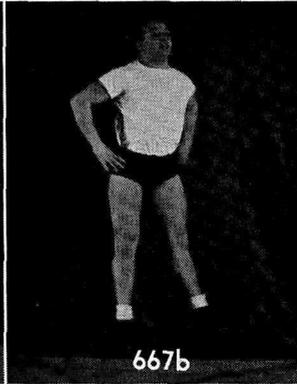
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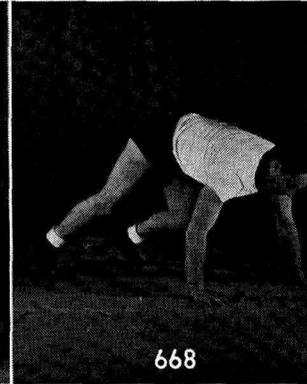
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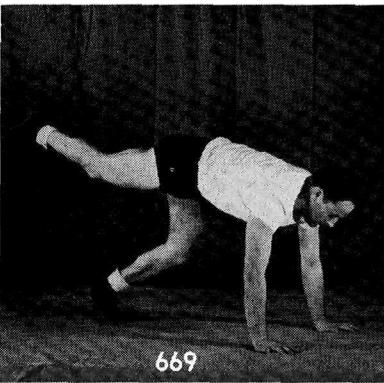
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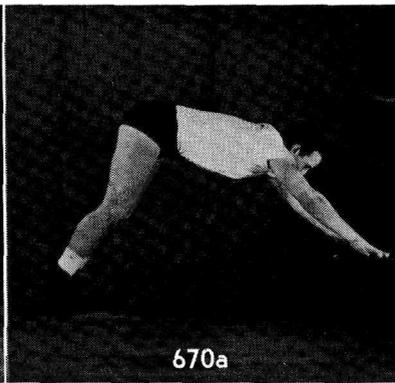
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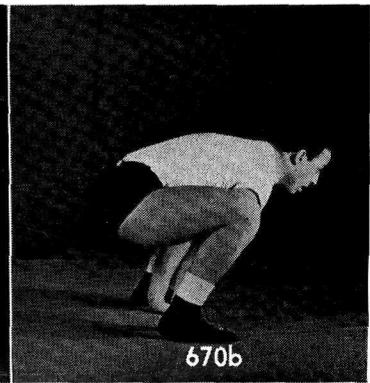
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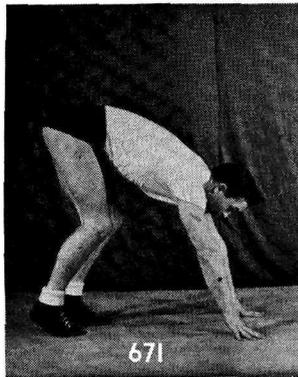
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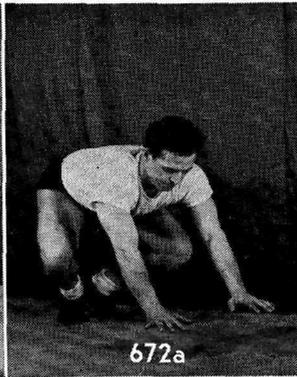
670a



670b



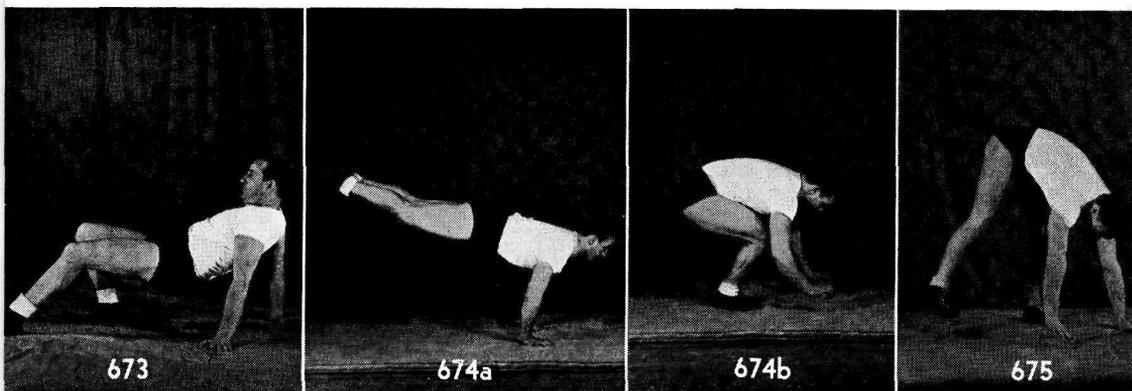
671



672a



672b



673—*Front and Back Crab.*

674—*Kangaroo Jump.*—(a) Spring to legs in fully extended position; (b) Return to a squat position!

675—*Elephant Walk.*—Arms and legs straight!

676—*Seal Crawl.*—Fingers pointed backward—Drag insteps along mat—Swing from the hips!

677a—*Duck Waddle.*—Heels up!

677b—*Variation.*—Heels down!

Frog Jumps and Forward Rolls.—Work in rhythm!

Squirrel Jumps and Forward Rolls.—Work in rhythm!

678—*Alligator Walk.*—Work from elbows at first!

679—*Crocodile Walk.*

680—*Gorilla Hop.*—Land on hands and feet together!

In organizing relays, use any of the above mentioned stunts.

TUMBLING

SINGLES

Rolls

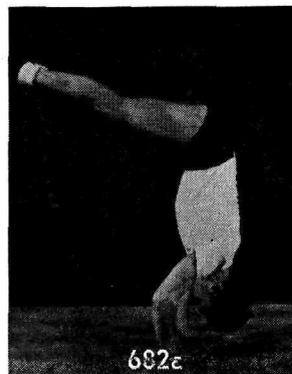
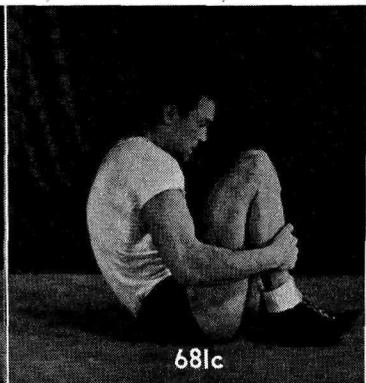
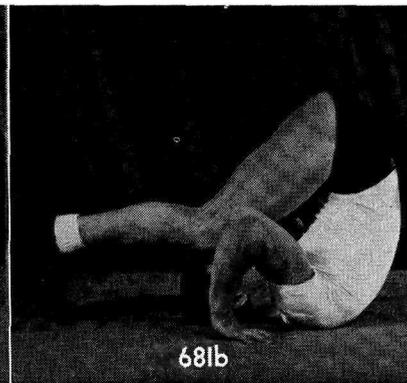
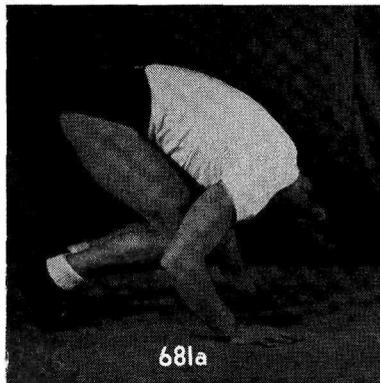
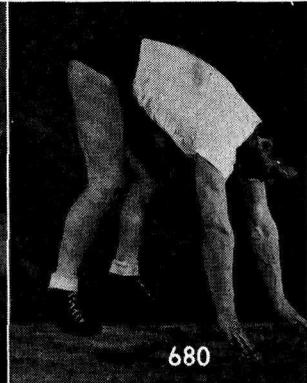
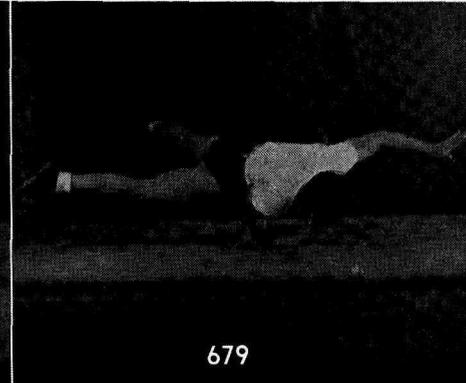
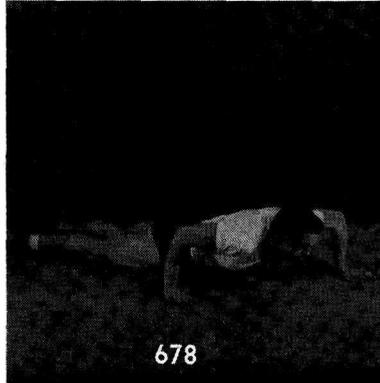
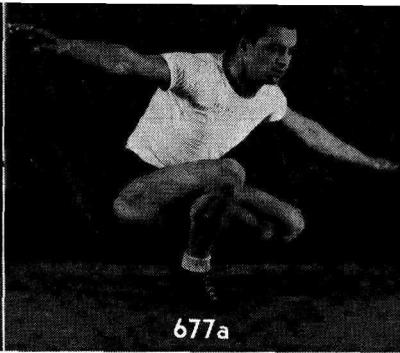
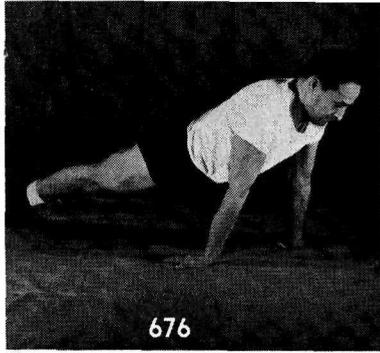
Forward Roll

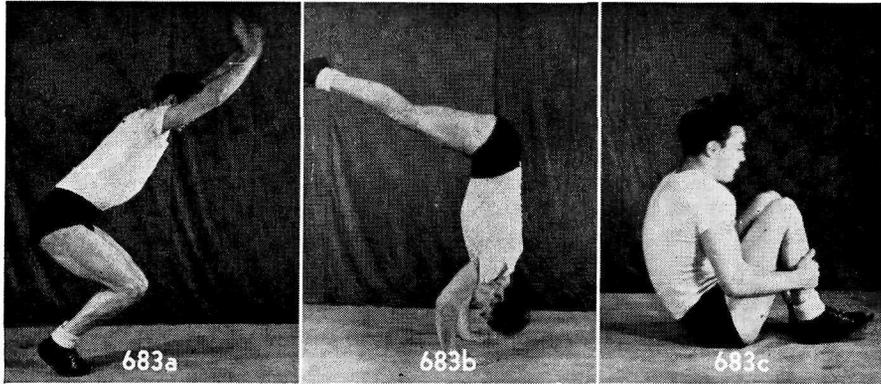
681—*From Squat Stand Position.*—(a) Knees between arms—Chin on chest—Hands flat on mats in front of feet—Straighten knees and raise hips putting body weight on toes; (b) Push off balls of feet—Lower nape of neck to mat—Start the roll at the back of neck; (c) Grab shins and pull into a tight tuck after start of roll—Finish roll in standing position!

SAFETY HINT.—Keep pushing with the hands until the nape of the neck touches the mat!

From Stand.—Lean slightly forward before rolling—Body is arched before ducking into roll! Execute roll in correct form.

682—*From Run.*—(a) Take off both feet—Lean forward before rolling; (b) Land with arms straight—Push with arms until nape of neck touches mat! Execute roll in correct form.



Dive and Forward Roll

683—*From a Stand.*—(a) Push off both feet—Extend arms—Lift hips high—Keep head up until hands land on mat—The body is not parallel to deck; there is a slight arch in body; (b) Flex arms slowly—Break at waist when forward impetus has been spent—Start roll at back of neck—Weight is supported by hands first, then bend elbows; (c) Grab tight tuck after start of roll!

From a Run.—Bounce off both feet! Execute dive in correct form.

SAFETY HINTS.—Keep head up in air—Do not tuck too soon—Do not relax arms, keep pushing until nape of neck touches deck!

★ ★ ★

684a—Place hands on performer's waist to get height!

684b—Gradually set the performer on to nape of neck!

Dive Variations.—Consecutive Dives, Over Standing Bent, Over Inverted Balance Straddle, Over Squash Pyramid, Stride Jump and Roll-Shuttle, Over Low Roll in Opposite Directions, Over Cross Low Dive, Through Hoop, Between Cross Bars, Over Cross Bars, Swan Dive.

Backward Roll

685—*From a Squat Position.*—(a) Knees between arms—Chin on chest—Lean forward slightly before rolling—Keep leaning forward—When off balance lean forward—Reach back with buttocks to get momentum; (b) Push off hard with hands—Start roll from feet to buttocks, etc.; (c) Place hands above shoulders at side of head, thumbs next to ears—Push hard while rolling on top of head—Roll over to feet *not* knees!

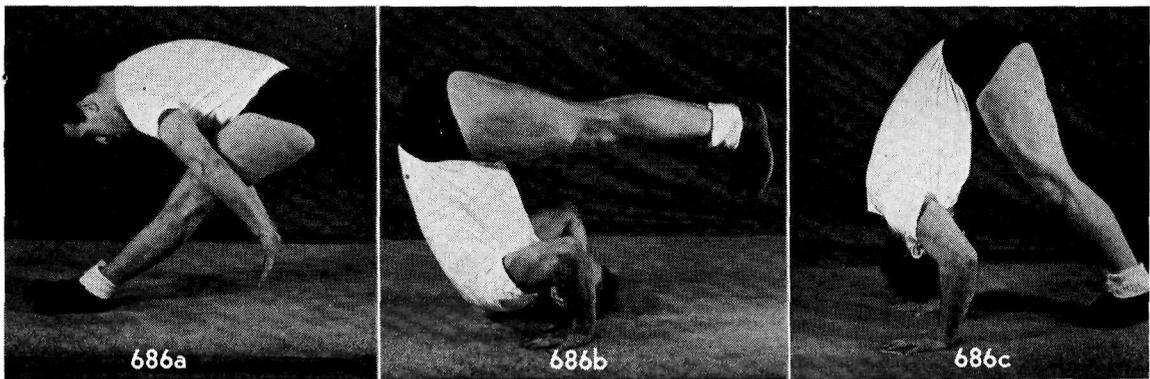
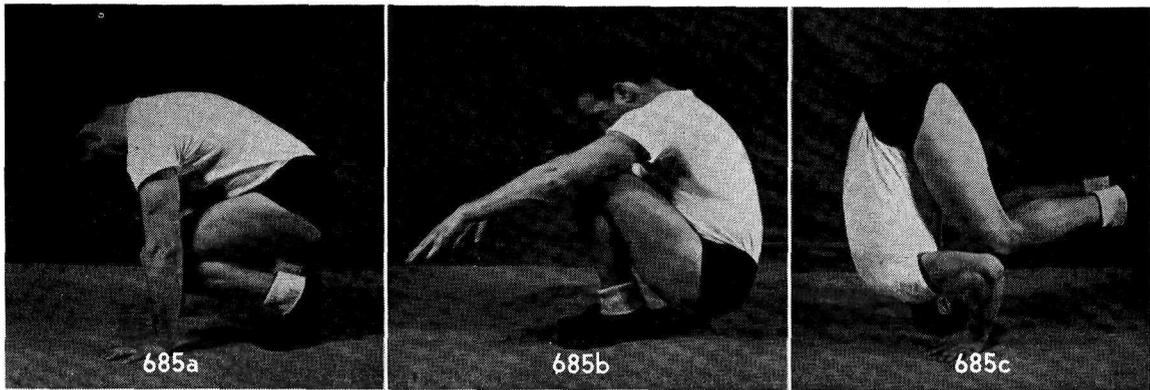
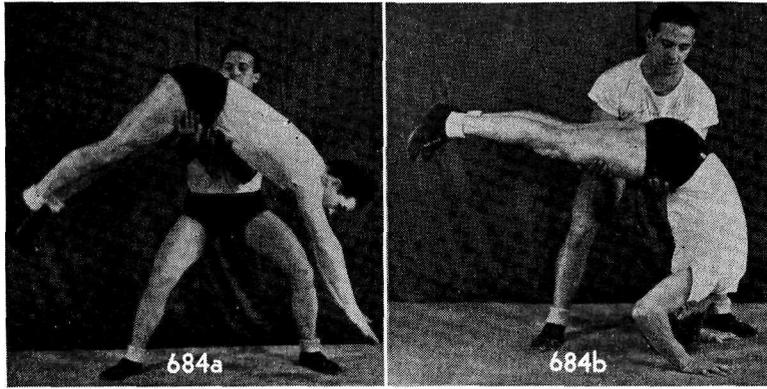
SAFETY HINTS.—Keep leaning forward—Don't throw the head backward—Use a partner to assist!

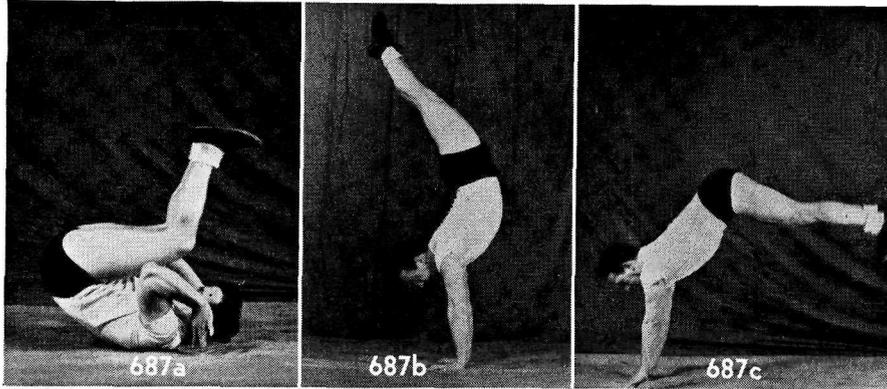
From a Stand, Then Squat.

686—*From Stand Roll in Kip Position (Jackknife Roll).*—(a) Lean slightly forward before sitting down—Place hands on mat, fingers pointed outward; (b) Lift the feet upward when buttocks hit mat; (c) Push hard with hands and lift the head!

Variations.—To front support, To momentary hand balance and snap down, To head balance.

Series of rolls and walk straight line.



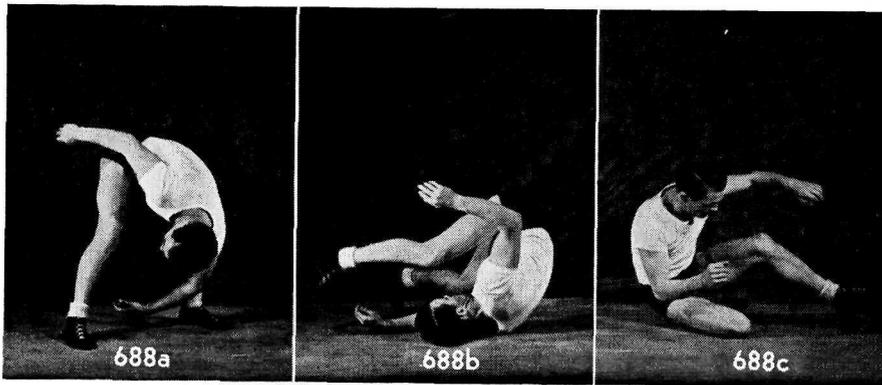
Back Extension (Momentary Hand Balance and Snap Down)

687—*From Sitting Position, Legs Bent.*—(a) Lower chin on chest—Bend knees—Grab tight tuck—Place hands up over the shoulder and on deck—When one-half way through roll shoot legs up to the ceiling—Arch the back as soon as hips leave mat; (b) Push hard with hands—Lift head up—Straighten arms—Be sure the hips are past the line of shoulders—Hold momentarily; (c) Bend knees slightly before snapping them down to mat in a downward arc—Push with arms when snapping legs down—Lift with hands and head on snap down!

From Sitting Position, Legs Straight.—Keep legs straight while rolling to the hand balance!

From Standing Position.—Keep legs straight—Lean forward before sitting down—Reach for toes—Place hands on mat at side of legs at first part of stunt!

SAFETY HINTS.—Don't throw head back—Keep leaning forward, when off balance backward!

Shoulder Roll

688—*From a Stand.*—(a) Throw right arm under and between legs; (b) Roll on shoulders not hips—Keep a tuck; (c) Start the roll low!

Variations.—With football, After catching ball, Without arms, Opposite shoulder, After a dive.

From a Run.—With extra speed the roll must be started low!

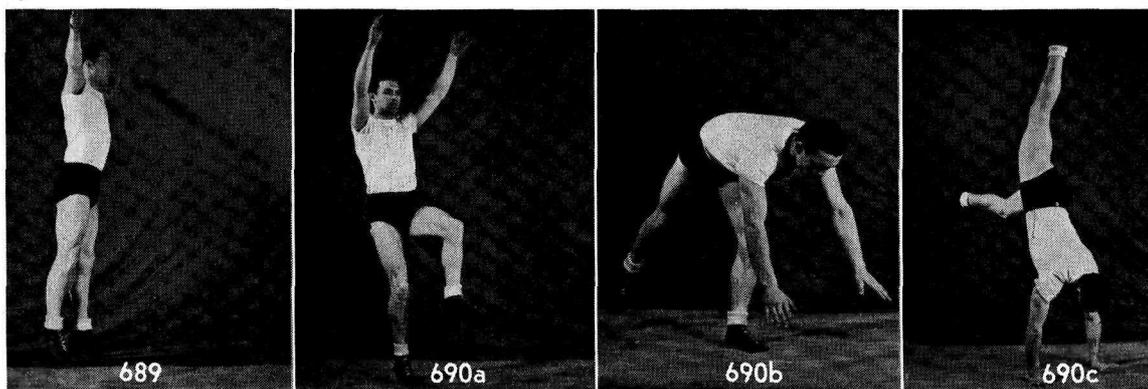
Jump and Rolls—From Platform—Forward, Backward.

Variations.—Leap frog and roll, Vault over horse and roll, Twist jumps and roll, Jump and shoulder roll, Hands on parachute ropes (imaginary).

*Combination of Forward, Shoulder and Backward Rolls.**—One roll jump and directly into another—Stay in tight tuck!

Variations.—Legs crossed, Without hands, Head between legs and outside ankles, Broadjump and rolls, Pirouettes and rolls, Grasp toes, Frog jump and rolls, Repetitions and walk chalk line, Two men or monkey rolls, Springs, Running on all fours and forward rolls consecutively.

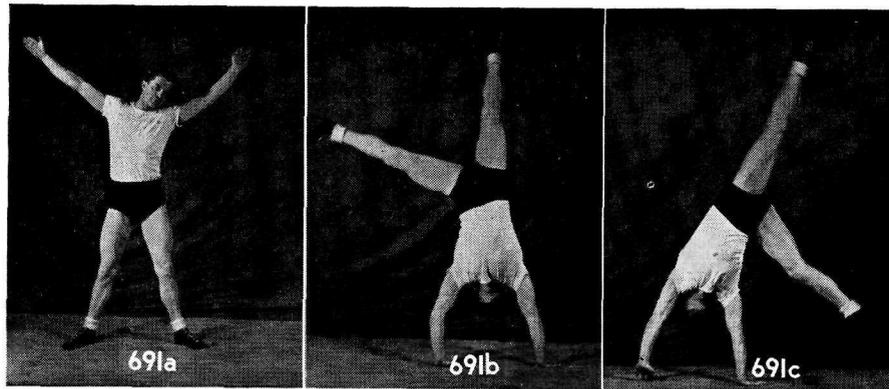
Running Approaches



689—*Two Foot Take Off.*—Jump from one on to both feet for take off!

690—*Skip Step Approach.*—(a) Left leg raised forward, hop on right—Hands above head; (b) Place left foot down—Bring hands down to mat; (c) Hands on mat—Back leg up and ready to kick! Back leg straight!

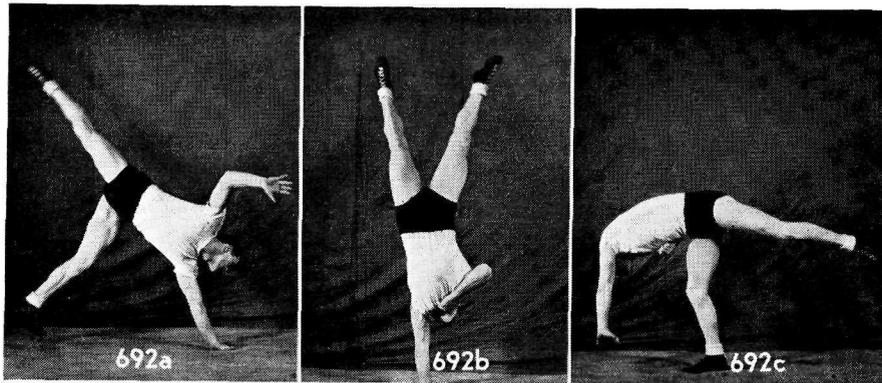
* The record at one of the Pre-Flight Schools for the three rolls is 2.5 seconds. The rolls are started by first leaping off a platform eight feet high. The stop watch is started the instant the performer lands on his feet and stopped the instant his feet touch after the third roll (Backward Roll).

Cartwheel

691—*From a Stand.*—(a) Start with feet apart, hands sideward; (b) Throw arms sideward to mat—Keep hands and feet on same imaginary line down the center of the mat—Hands two to three feet apart—Keep the head up at all times—Keep the body straight—Keep the feet apart, three to four feet; (c) Keep even rhythm!

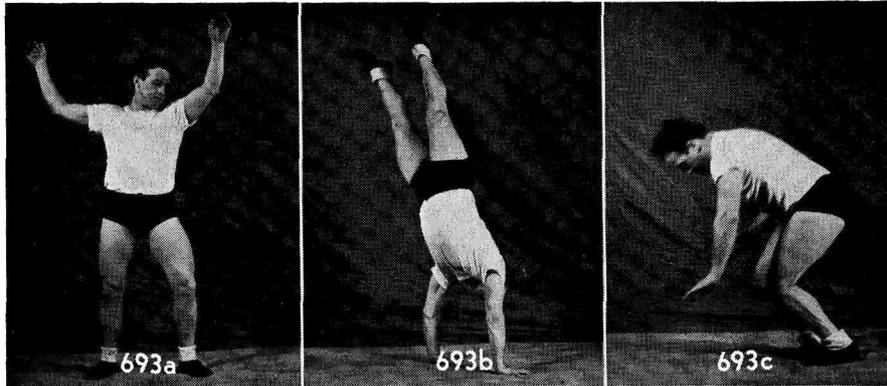
From a Run.—Just before throwing the hands down lift the front foot into the air and skip on the rear foot. Then place the front foot down and whip the rear foot up and around, known as the Skip Step!

Variations.—Foot hit, Series, Bounce, Roundoff.

One Arm Cartwheel

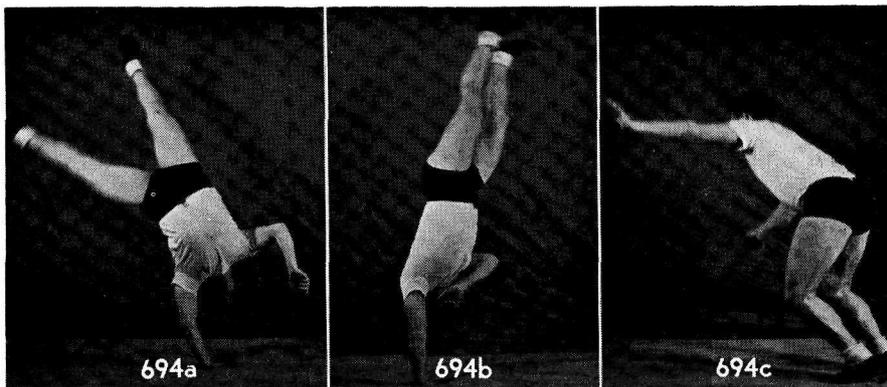
692—*From a Stand.*—(a) Rotate on first arm; (b) Keep arm straight—Throw second arm up to chest; (c) Whip leg around—Keep head up!

From a Run.—Throw first arm downward—Do a skip step before throwing arm—Keep head up!

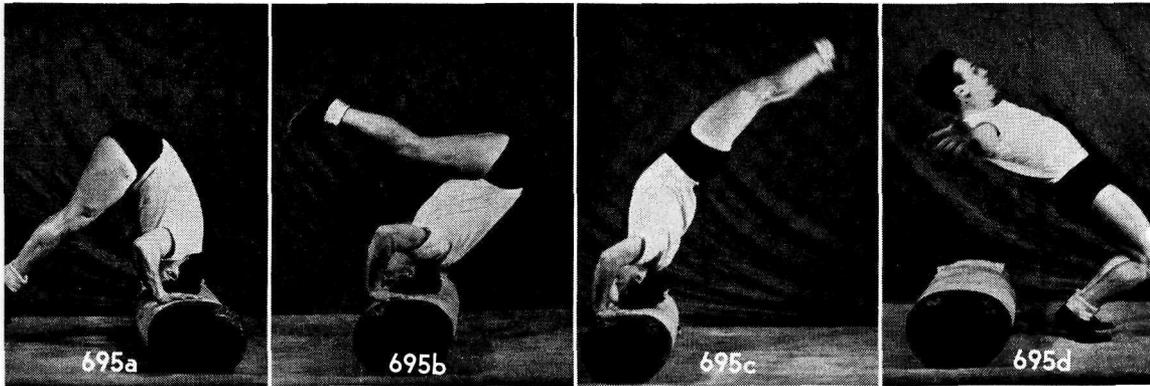
Roundoff

693—*From a Stand.*—(a) Start like a cartwheel; (b) When in hand balance position close both legs together—Twist body one-half turn inward—Whip both feet to the mat together; (c) Bounce off both feet—Keep arms straight—Push off fingers—If turning to right, head forward and left hand over right and facing in opposite direction—Head up!

From a Run.—Do a skip step before the roundoff—Turn the last hand to touch the mat, slightly forward!

One Arm Roundoff

694—*From a Stand—From a Run.*—(a) Place the inside arm down; (b) Keep this arm straight—Throw outside arm up to chest; (c) Whip both feet to the mat!

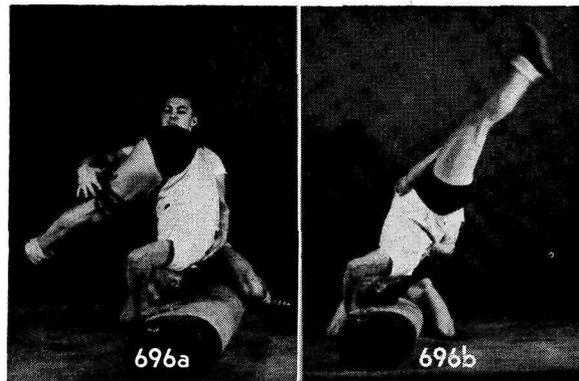
Headspring, Two Foot Take Off From Roll

695—*From a Stand.*—(a) Place head and hands on rolled mat—Keep legs straight—Keep legs low—Lean forward into head balance, toes just clear of the mats; (b) Get hips past the line of head and shoulders; (c) Then whip legs up, over, and down; (d) Keep legs straight—Push hard with hands—Bring head forward after landing on feet!

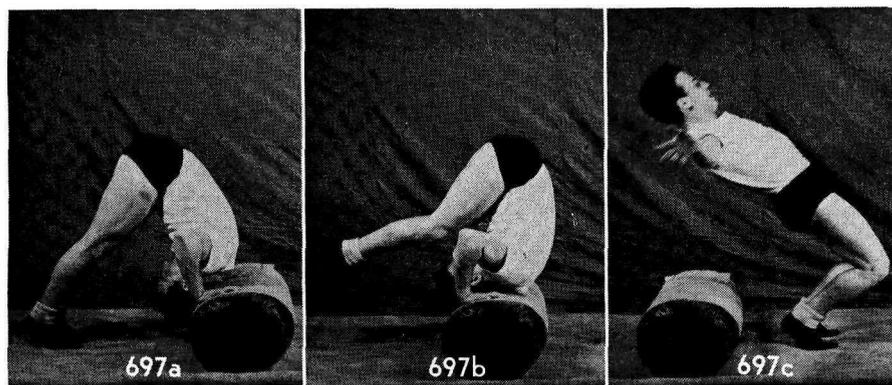
From a Run.—Bounce hard from both feet!

From Level, No Rolled Mats.—Same as on rolled mat with extra whip of legs and push of hands—Wait till hips are off balance!

Variations.—Layout landing (arched body), From head balance (drop legs), Running approach two foot take off, Series of headsprings.

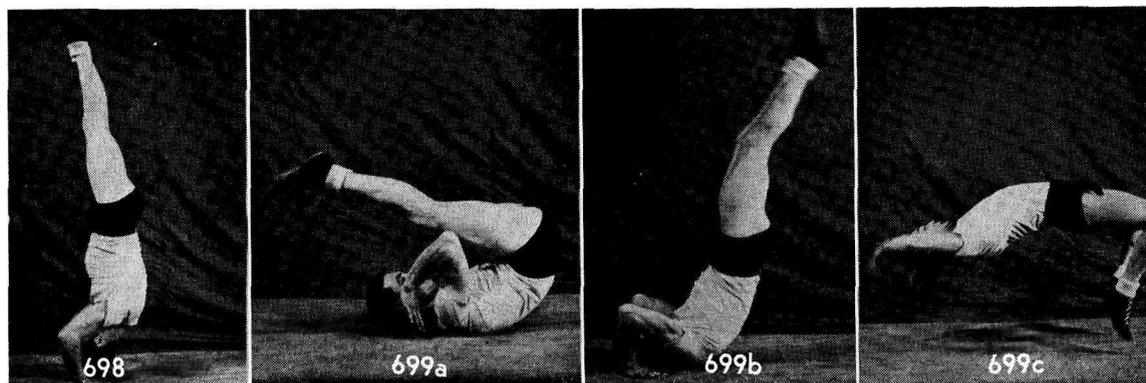


696—*Spotting for Headspring.*—(a) Place one arm behind the shoulders and grasp the legs with the other. One very important point to remember is to hold the performer's legs down so that they do not get higher than parallel to the mats before his hips are off balance; (b) When the hips are past the shoulders, shift your hands from on top of the legs to underneath the thighs and help whip the legs around. At the same time push on the shoulders with other arm!

Neckspring (Shoulder Spring), Roll

697—*From a Stand.*—(a) Chin on chest—Arms flexed—Legs straight—Spring from back of neck; (b) Get hips past the shoulders before whipping the legs; (c) Push with hands!

From a Run.—Take off both feet—Start first part of spring slow!

*Neckspring (or Shoulder Spring), Without Rolled Mat*

699—(a) Hands on the mat—Duck head and touch nape of neck to mat; (b) Snap feet out and downward—Push with hands; (c) Raise hips upward!

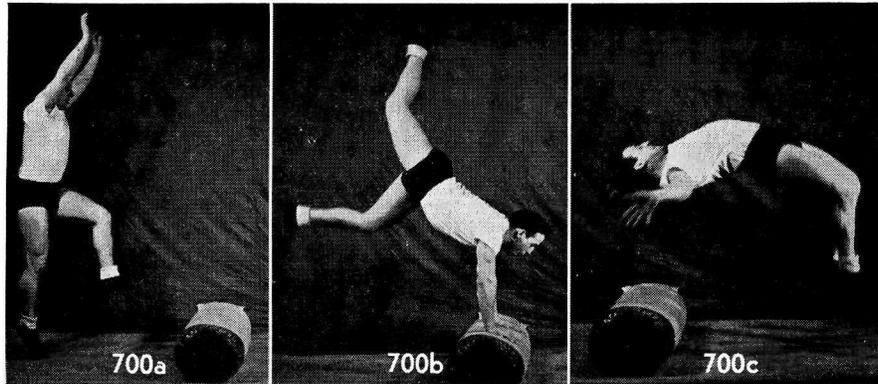
From a Stand and Run.—(Same as on a rolled mat)

698—*From Hand Balance.*—Flex arms slowly—Tuck head under.

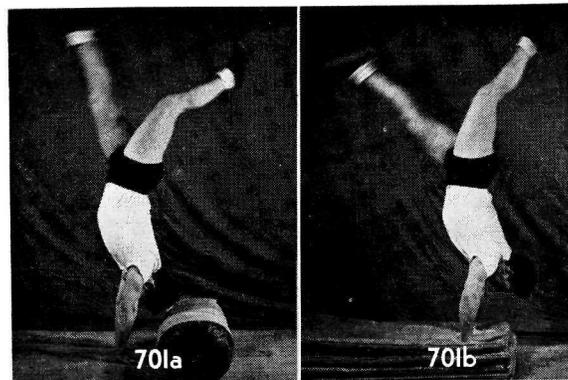
699—(a) Bring legs back toward the mat—Legs straight; (b) When body is in neckspring position then whip legs; (c) Push hard with hands and arch back!

699—*Snap Up (Kip Up).*—(a) Lie on back and bring feet to mat over head; (b) Arch back vigorously; (c) Push as hard as possible with hands—Get height before bringing feet to mat!

Variations.—Teach with mat on springboard, Layout body, Stand on hands, No hands, Hands folded.

Handspring

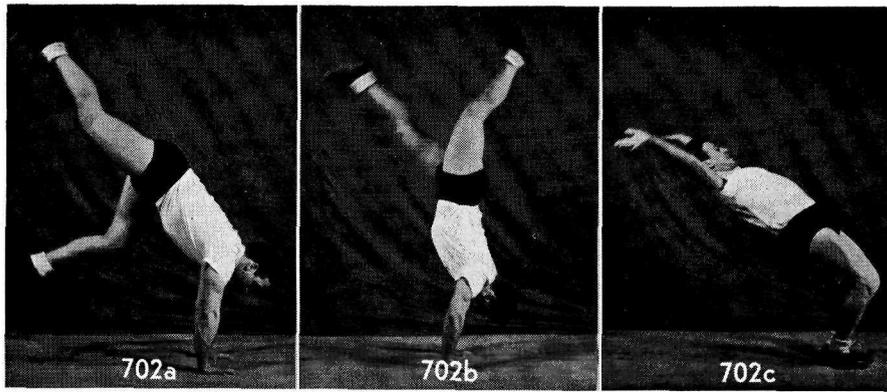
700—*From a Roll.*—(a) Skip step before throwing hands down—Just before starting the skip bring arms above the head; (b) At the finish of the skip step throw arms downward; (c) Whip skip foot over head—Keep it straight—Place hands on top of rolled mats—Keep arms straight—Keep head up until hands leave mat—Then whip it forward!



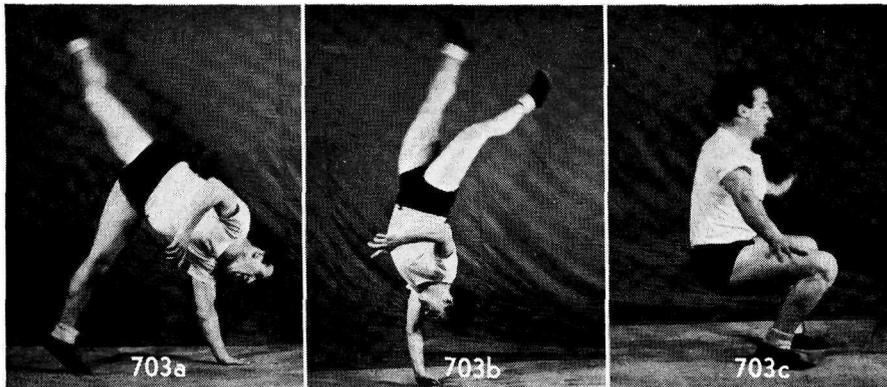
701a—*Hands in Front of Roll.*—Same as above except need more whip and throw. The rolled mat aids as an added protection for if the performer does not make the handspring he may fall back onto the rolled mat.

701b—*Off Several Layers of Mats to a Lower Level.*

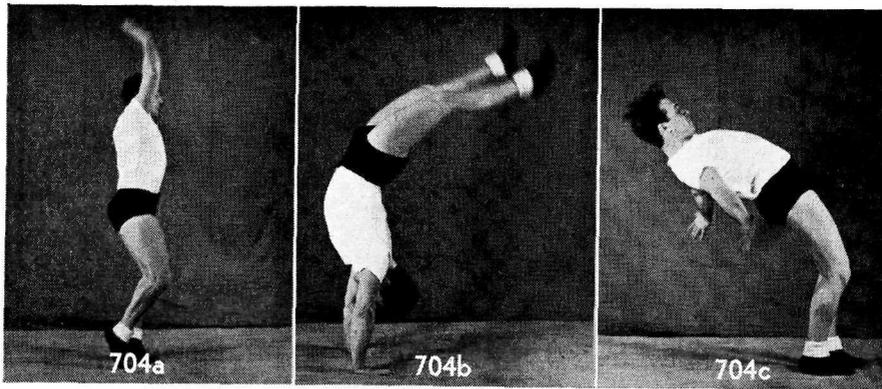
SAFETY HINTS.—Spotting—Aid the performer by pushing under the shoulders with one arm and grasping the near arm of the performer with the other arm. This protects the spotter from receiving a blow in the face and aids the performer in accomplishing the stunt!



702—*On Level*.—(a) Arms straight—Shoulders ahead of hands—Head up; (b) Back leg straight—Whip the back leg; (c) Push with the hands!
Variations.—Layout landing, Walkout landing on one foot, Two foot take off.

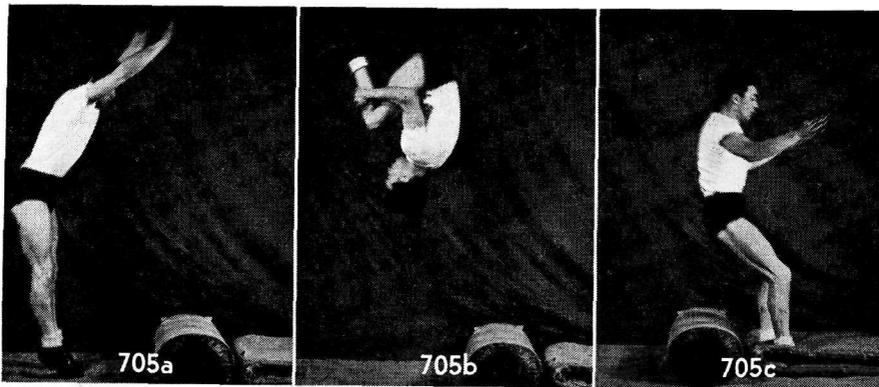


703—*One Arm Handspring*.—(a) Use the arm corresponding to the take off leg—If the right leg is in front place the right arm—If the left leg is in front place the left arm—Shift the weight over the one arm; (b) Throw the other arm up to the chest; (c) Need extra whip of back leg and throw of arm—Keep supporting arm straight!
Variation.—Arabian or Leaping Handspring.



704—(a) Take off both feet—Bounce off feet—Before take off throw hands above the head; (b) With bounce, whip arms to mat—Throw feet to the other side of the perpendicular before touching hands—Should bounce just high enough so arms land straight—Not *too* high—Not *too* low—Keep arms straight; (c) Hold arch!

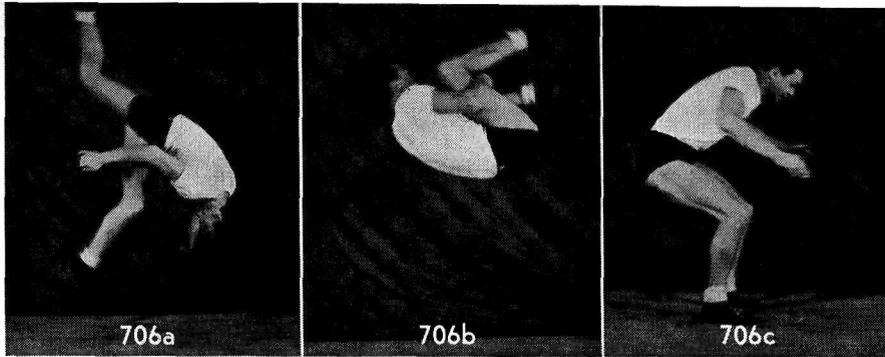
Variations.—Start from running headspring off rolled mats, Next on rolled mats—do not touch head, Next in front of rolled mats, Next on level.



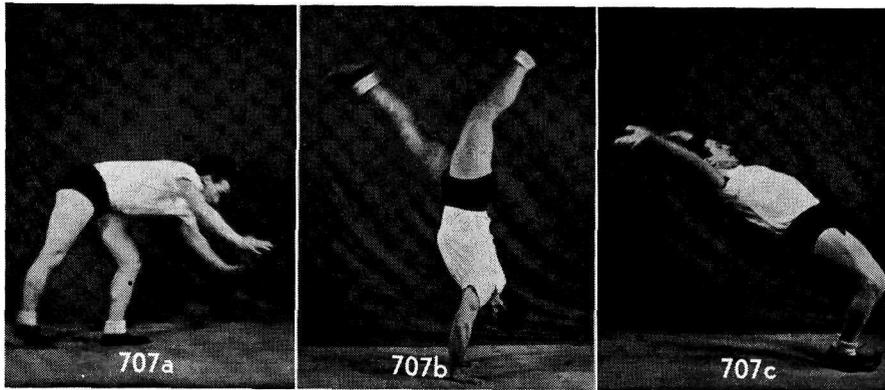
Front Somersault
705—Over Roll and Onto Double Thickness of Mats.—(a) Don't touch hands on mat—Tuck head under—Arms up and forward before take off—Bounce off both feet on take off—Legs very slightly bent; (b) Grab tight tuck; (c) Land well forward—Legs slightly bent!

Teaching Procedure.—Tuck and spring together should be learned before the lift and tuck somersault.

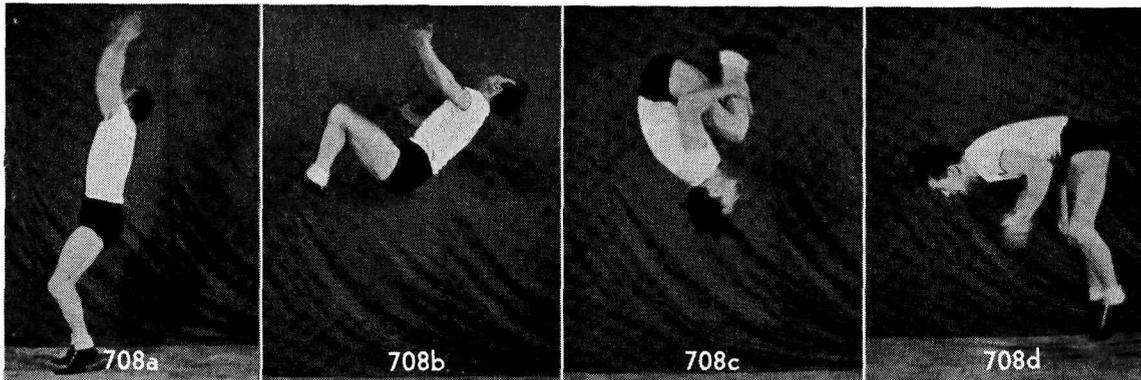
SAFETY HINT.—Sit on the rolls to spot!



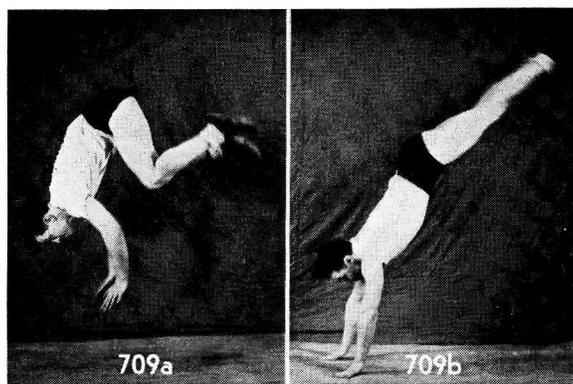
706—*Kickover*.—(a) Start low, flex right leg—Whip left leg well back; (b) Whip left leg up and over—Push off hard with right leg—Grab under thigh of right leg; (c) Land well forward!
Variation.—Land on one foot, Arch back.



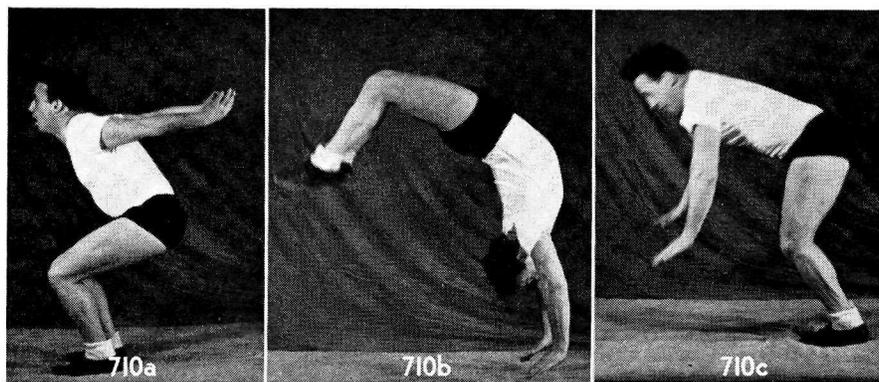
707—*Front Handspring, from Somersault*.—(a) Pull tight tuck; (b) Drop on one foot; (c) Hands up ready to swing forward!



708—*Back Somersault with Tuck*.—(a) Done very fast—Swing arms upward; (b) Spring from legs when head is back; (c) Bring knees up to chest and grab tuck with arms; (d) Land on balls of feet, head up—Keep eyes open!



709—*Bucking Broncho (Mule Kicks)*.—(a) Try to place hands where feet were—Spring and lift feet; (b) Push off hands—Lift head—Try to place feet where hands were—Continue in rhythm!

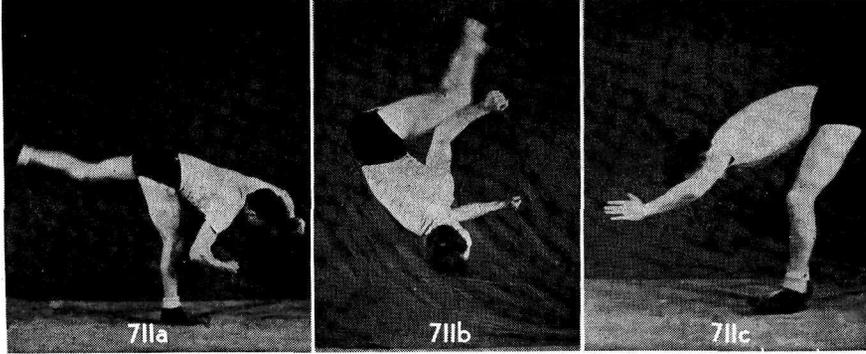


710—*Back Handspring or Flip Flop*.—(a) Sit—Hands back—Back erect; (b) Keep heels on floor; (c) Lose balance—Whip hands and head backward—Slide feet along mat—Land on hands!

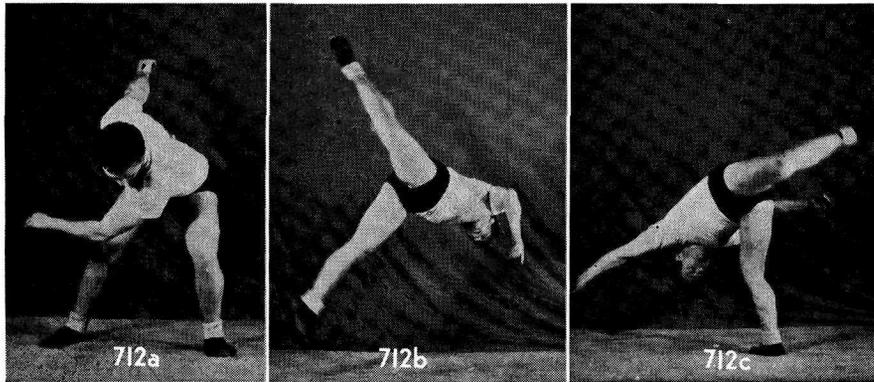
Roundoff, Backhandspring or Flip Flop

Two Back Handsprings.—Bring feet down at an angle after each back handspring—Throw arms hard from shoulders!

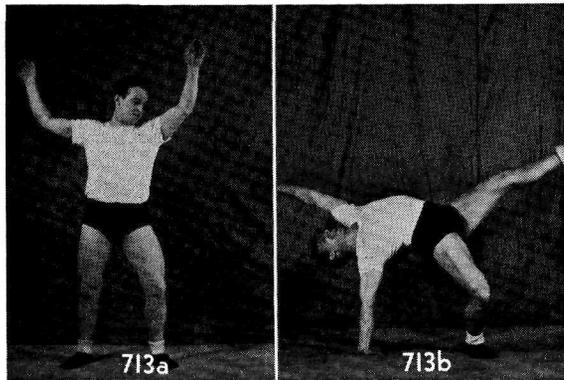
Back Handspring—Back Flip.—Feet down at an angle after the handspring—Feet back getting ready for somersault—Throw arms for handspring—Spring for somersault!



711—*Brandy or Baroni, or Beroni*.—(a) Take off one foot as in roundoff; (b) Tuck arms in chest as back leg is kicked forcefully over head; (c) Keep head and arm off mat landing on feet!



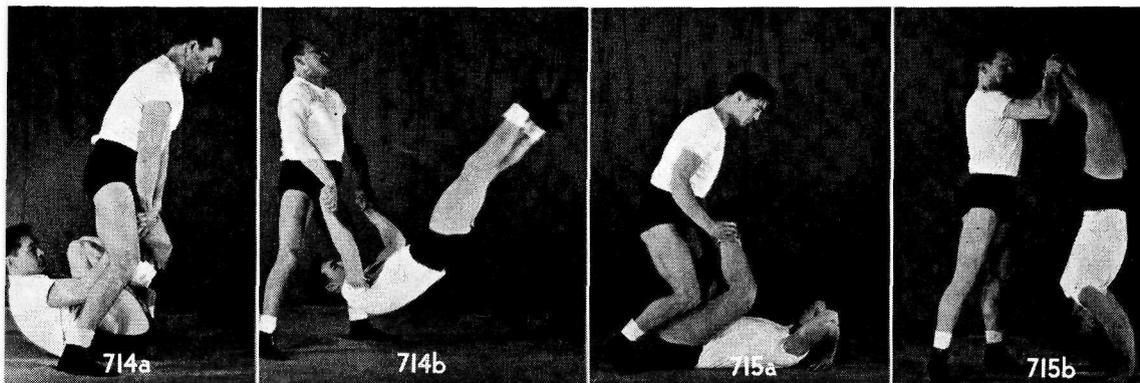
712—*Butterfly*.—(a) Take off from one foot; (b) Shoulders low and feet high; (c) Land on the opposite foot!



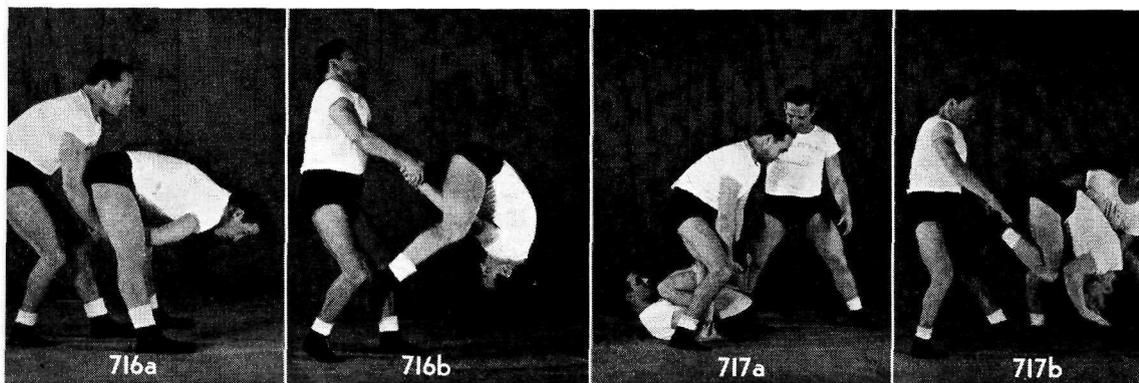
713—*Tinsica*.—(a) Perform like the cartwheel with quarter turn outward; (b) Push hard with hand!

Suggestions for More Advanced Stunts in Tumbling

Back handspring, back flip with one-half twist—Backward flip with full twist—Alternate back flips with back handsprings—Alternate back flip with full twist with back handspring—Continuous row of back flips (swing backs)—Back flip with one and one-half twist, from back handspring—Back flip with double twist from a back handspring—Roundoff.

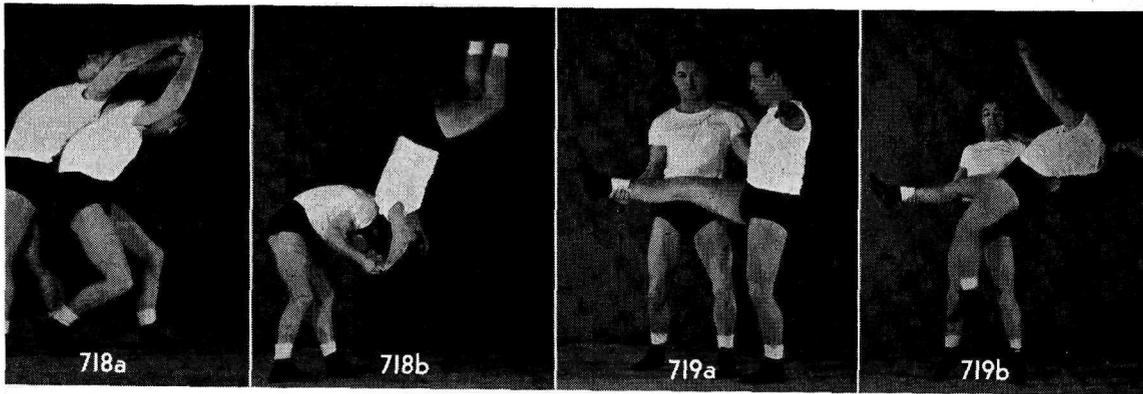
DOUBLES*

714—*Cannon Ball*.—(a) Tuck position under partner—Arms slightly bent; (b) Shoot out high—Pull with partner—Leg grasp in landing!
715—*Snap Over*.—(a) Flyer on back—Thrower grasps ankles; (b) Thrower lifts feet—Flyer pushes off hands—Snap down!



716—*Pull Around*.—(a) Flyer reaches under legs—Thrower grasps hands; (b) Thrower lifts flyer to turn over—Lands on feet—Lets go grasp!
717—*Swing to Feet*.—(a) Flyer on back, legs in tuck position—Thrower grasps ankles and lifts; (b) Swings flyer forward and onto feet!

* See also Doubles on p. 82, 312, 348.



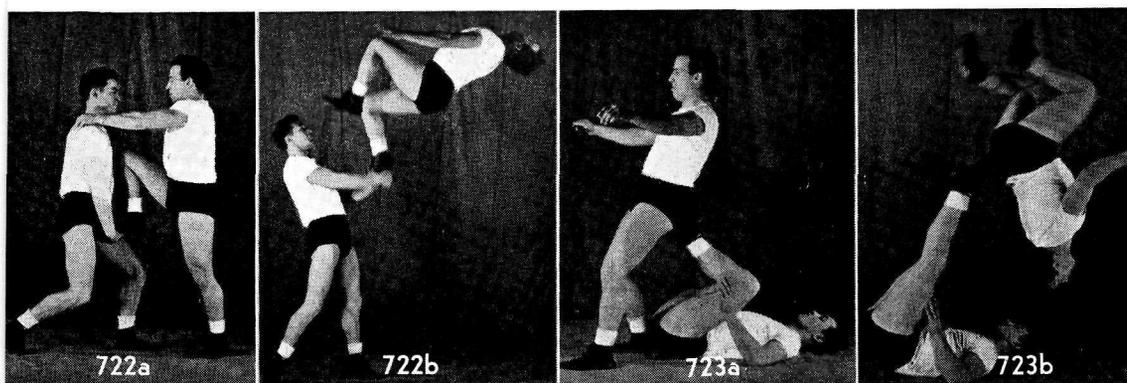
718—*Back to Back Toss*.—(a) Stand back to back—Hands over head and grasps hands locked; (b) One man leans forward and pulls second man over back—Flyer lifts legs while on back of thrower—Thrower straightens up as flyer lands—Turn and alternate positions!

719—*Side Leg Pitch*.—(a) Flyer places leg in thrower's hands—Also places hand on shoulder; (b) Thrower raises leg forcefully—Flyer throws hands up and back and flips over—Takes off one foot—Lands on both feet!



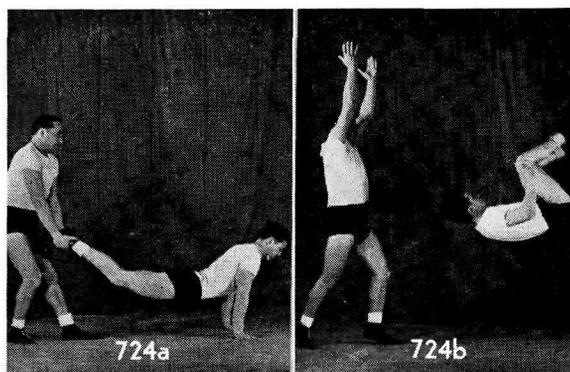
720—*Back Pitch From Shoulders*.—(a) Flyer sits on thrower's shoulders; (b) Flyer leans and arches backward—Thrower lifts hips of flyer—Flyer lands on feet!

721—*Handspring Swan Pitch*.—(a) Flyer starts on mat—Flyer rests on thrower's feet—Grasps thrower's hands; (b) Thrower tosses flyer from feet to feet—Handspring over head—Flyer lands on feet!

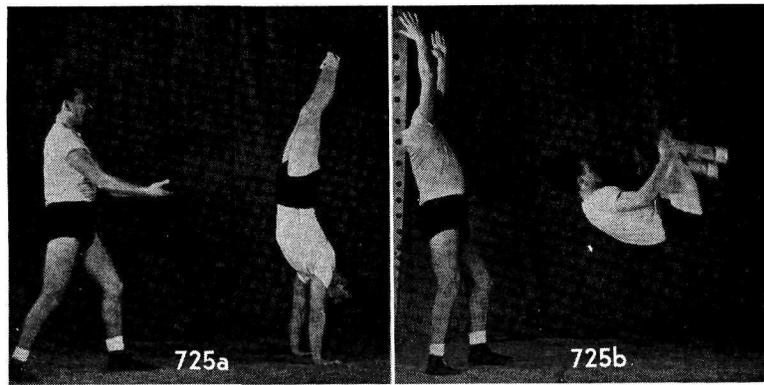


722—*Pitch Back Straight Leg.*—(a) Thrower squats with hands and wrist clasped on thighs—Flyer steps into thrower's hands with hands on shoulders of thrower; (b) Flyer straightens leg and lift hands above head—Head back—Thrower lifts flyer above head—Flyer grabs tuck and lands on feet!

723—*Back Pitch From Feet.*—(a) Thrower on back—Flyer sits on thrower's feet; (b) Flyer arches back, head back, leaning backward—Thrower flexes knees and quickly tosses flyer over head onto feet—Flyer lifts arms upward in landing!

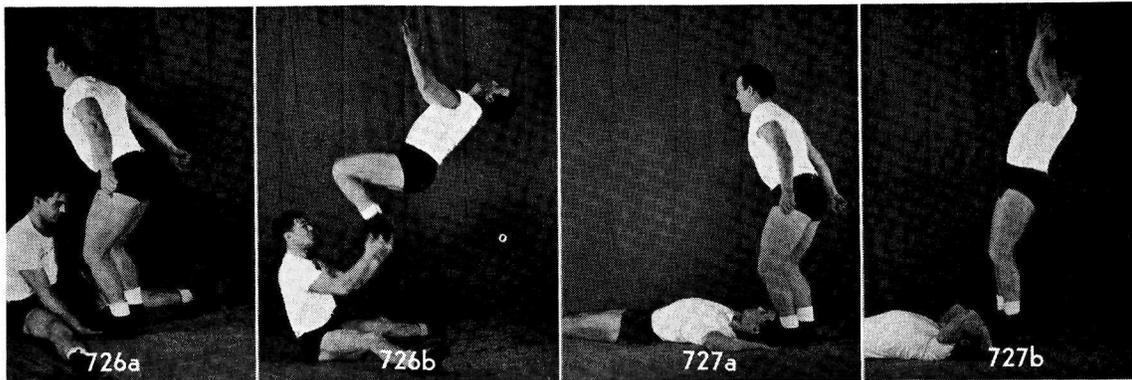


724—*Front Wheelbarrow Pitch.*—(a) Flyer in prone position—Thrower grasps ankles—After timing thrower lifts forcefully up and out; (b) Flyer pushes off hands—Grabs tuck—Flyer lands on feet!



725—*Front Wheelbarrow Pitch From Hand Balance.*

- (a) Flyer in hand balance leans forward as feet fall into thrower's hands;
 (b) Follow through!



726—*Back Flip Pitch From Hands, Thrower Sitting.*—(a) Thrower sits with hands on deck—Flyer stands on palms of thrower—Flyer dips for back flip; (b) Thrower lifts as flyer throws for back flip!

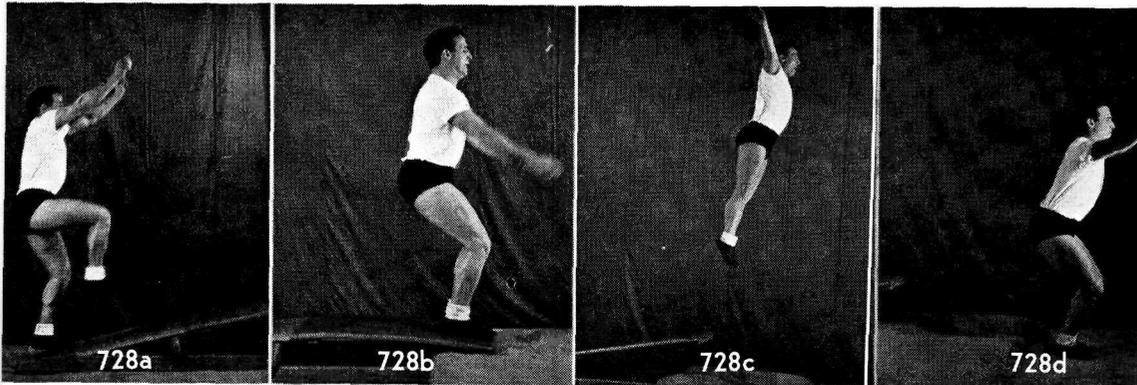
727—*Back Flip Pitch From Hands, Thrower Supine.*—(a) Hands behind head on mat—Flyer stands on hands—Thrower on back; (b) Thrower lifts as flyer goes for back flip—Lands on feet!

Suggestions for Advanced Doubles Tumbling

Front pitch one leg—Back flip off shoulders—Double butterflies—Leg pitch backwards—Front pitch from holdout positions on knees—Various pitches with twists.

SPRINGBOARD*

The springboard must have adequate safeguards before it is used to avoid slipping. It should be placed on mats, and have a roll or mat placed on the legs. A double thickness of mats should be provided for landing.

Progressive Springboard Stunts

728—*Straight Bouncing*.—(a) Take off on one foot from the mat to the board landing on both feet on the end of the board; (b) Legs flexed slightly while arms are back; (c) Take spring with rigid legs as arms swing forward and upward; (d) Land on the balls of the feet!

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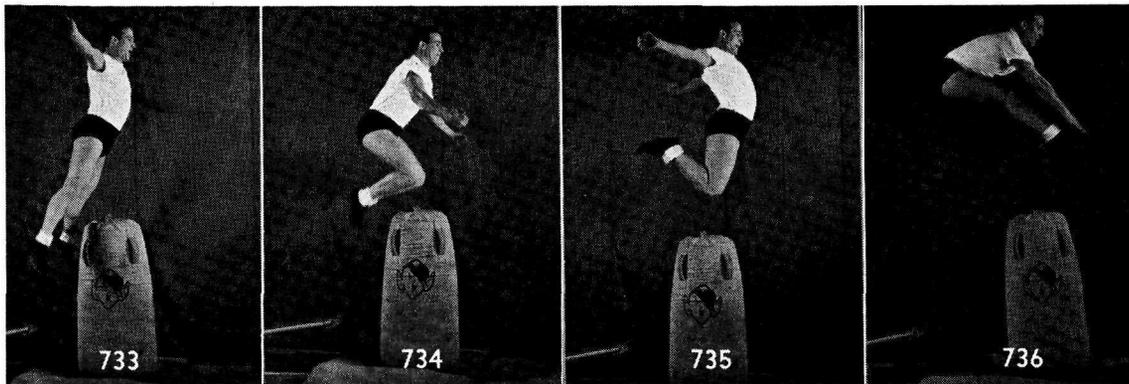
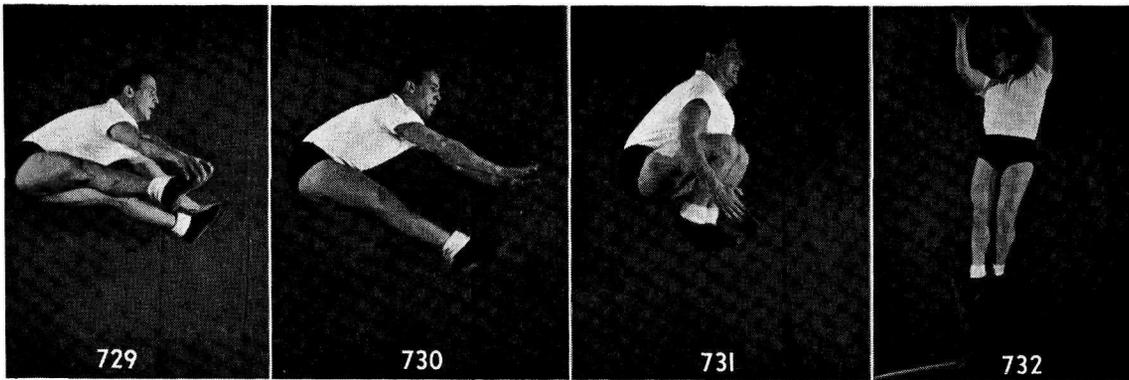
729—*Bouncing and Straddle Touch*.—After the spring reach for your feet in a straddle sitting position—Bring the feet up to the hands—Keep the legs straight—Keep the head up!

730—*Jackknife Touch*.—After the spring bring feet to hands—Keep legs together and straight—Keep the head up!

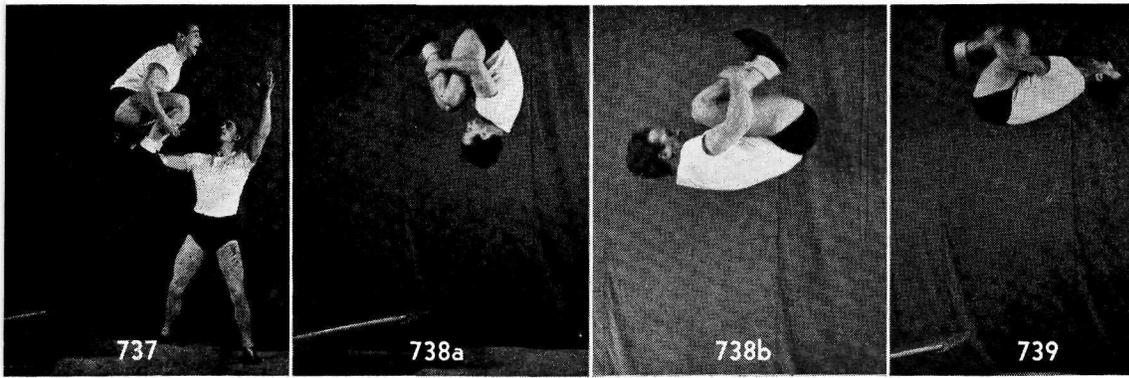
731—*Tuck Grab*.—After spring bring the knees to the chest—Grab shins and hold a moment—Shoot legs down in landing—Keep the head up!

732—*Twister*.—After spring bring right or left arm upward and backward over the shoulder to the left or right. Head follows the twist before landing—Body is straight throughout twist—Keep eyes open!

* See p. 451.



- 733—*Straddle Over Obstacle.*—Spring and lift for height and straddle legs!
- 734—*Tuck Over Obstacle.*—Reach for tuck position after springing off board—
Hold tuck until past obstacle—Shoot legs downward in landing—Keep
head up!
- 735—*Sheep Jump Over Obstacle.*—Lift high with arms and shoulders—Throw
arch in back and bend knees—Chest high—Flex knees in landing!
- 736—*Stoop Jump Over Obstacle.*—Get height with arms and shoulders—Flex
quickly at the waist bringing legs up to hands in pike position—Keep legs
straight!

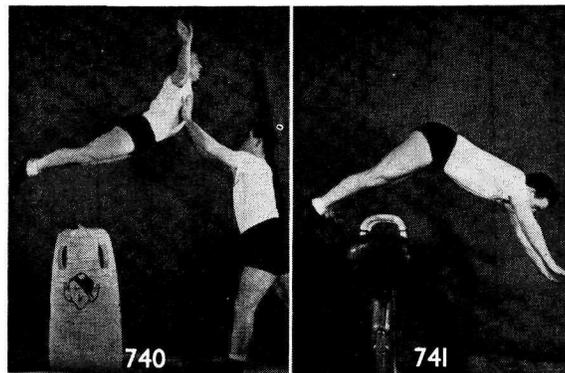


737—*Spotting Tuck Grab.*—Spotter keeps eyes on performer—Raise hands to assist in over or under spinning—Follow performer all through stunt!

738—*Front Somersault.*—(a) Get height with arms and shoulders—Swing arms forward and downward while ducking head into chest and hunching the back; (b) Grab tuck keeping eyes open for landing!

739—*Back Somersault.*—Spring and lift with arms and shoulders throwing arms back above head—Toss head back forcefully—Bring knees to chest and grab tuck—Head back with eyes open for landing with knees flexed!

SAFETY HINTS.—Make sure that the springboard is adequately spotted at all times—When not in use the springboard should be used only under proper supervision; otherwise it should be locked and unavailable!



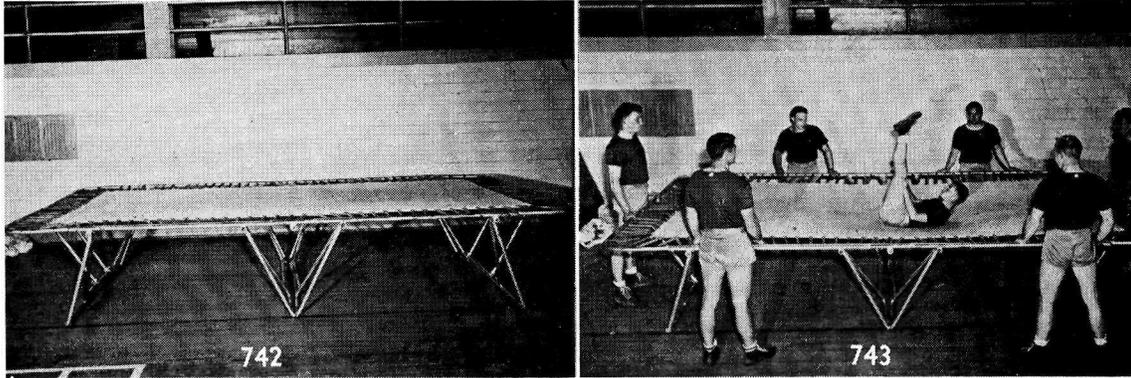
740—*Swan Dive.*

741—*Dive.*—Arms sideward—Head back—Spot chest!

CHAPTER XI

Trampoline Activities

The trampoline consists of a sturdily constructed table-high metal frame, within which is attached, by means of elastic cord or metal springs, a heavy canvas or woven webbing sheet which serves as a performing surface. (See Plate 742)



Objectives or Outcomes

To Provide Aerial Orientation

1. Reduce fear of being upside down, of falling or revolving in midair.
2. To afford practice in relocation after body revolutions and in sensing relative location while revolving in various positions.
3. To learn balance and body control while in the air.
4. To develop oneness with the plane.
5. To acquire self-confidence in the air.

To Aid in Effective Conditioning

1. Vigorous developmental exercise for the legs.
2. Muscle tension, both continuous and alternating, in the arms, shoulders, trunk and abdomen, are involved in the arm lifting and circling, and body-control movements of bouncing.
3. Muscle stretching and the alternate working of antagonistic muscles.
4. Contributes to increased vital capacity and increased fatigue-recovery ability.
5. To aid in the development of coordinated, well-timed and rhythmical movements.

Means of Preventing Injury

1. Permit practice only when adequate supervision and spotting are available.
2. Pad the frame.

3. Maintain at least four alert trained spotters or guards, one at each side and one at each end. Each cadet should serve as guard while awaiting his turn to perform. (See Plate 743)

4. Teach the performer vertical bounce control so that the performer can "spot" his bounces before he is permitted to bounce high.

5. Teach all tricks at low altitude before permitting high attempts.

6. Teach complicated tricks by means of lead-up stunts before attempting the whole.

7. Teach the slightly bent knee "spring killing" position for landing on the feet when performer is not quite sure of his position and balance, in contrast to rigid knee landing, which would result in a high and possibly tangent rebound. (See Plate 744)

8. Use hand-spotting or overhead type safety belt spotting in teaching back turn-overs. Be sure of control before permitting independent attempts.



745—*Hand Spotting*.—Spotter bounces with the performer with hand grasp on trunks. On take off for attempt the spotter stays down to lift, turn and catch the performer.

746—*Overhead Safety Belt*.—The two supporting ropes are suspended from overhead through pulley wheels to a common rope in the instructor's hands. Smooth control by the spotter should be acquired by practice before risking neck of the performer on dangerous stunts in the belt.

9. Reckless jumping from the canvas to the floor should be prohibited.

Correction of Faulty Landing Positions

Teach all new landing positions and as many new moves as possible with extremely low bounces which may increase in height as control is improved.

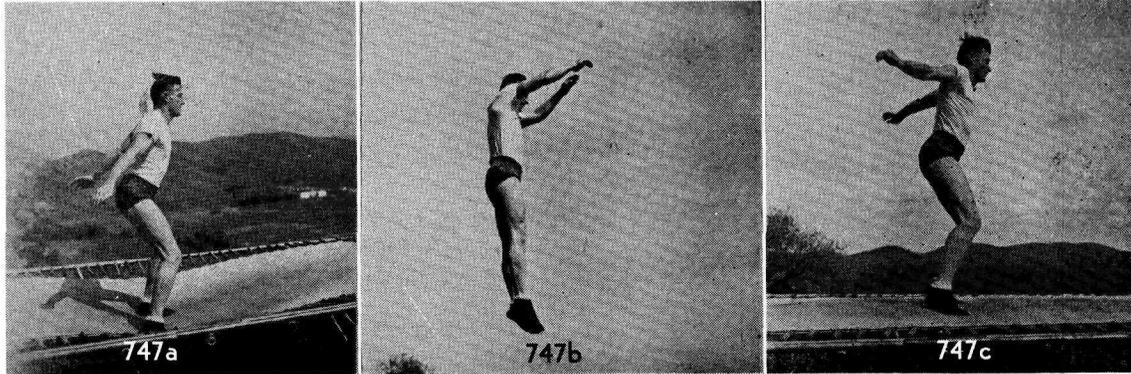
Teach simulated positions and movements on tumbling mat and deck before they are attempted on the trampoline.

Teach balanced take offs so that the performer will be moving vertically only and not horizontally when landing, thus reducing the chances for abrasions and strains.

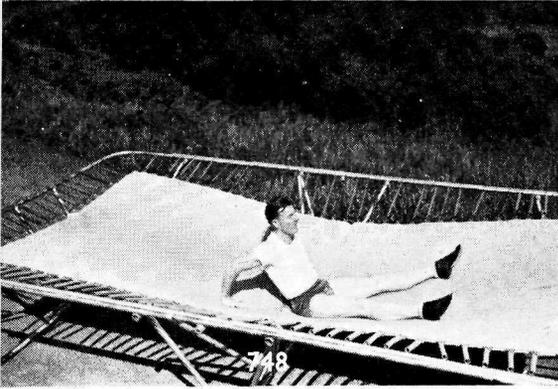
Teach elementary work before permitting attempts at the more advanced work which depends upon the good execution of elementary positions for safety and success. Don't permit two performers to bounce together (Doubles Work)⁴⁵ except the very advanced.

THE FUNDAMENTALS OF TRAMPOLINE ACTIVITY

Bouncing

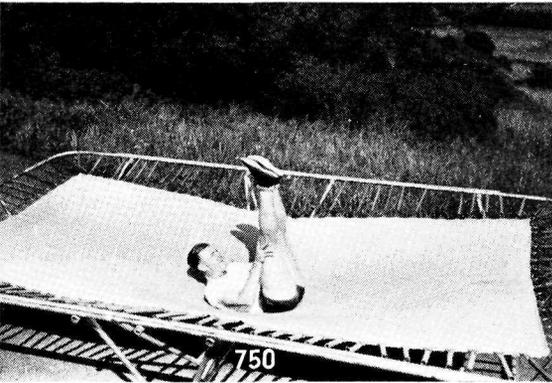


747—(a) Place feet twelve to eighteen inches apart while on the canvas—Bend knees very slightly upon landing and straighten upon take off; (b) Focus eyes forward and downward at a point approximately six feet forward of the bounce—Keep body fairly rigid in the air and bend trunk forward slightly—Keep legs straight—Keep toes pointed—Swing feet together while in midair; (c) The arm action consists of circles with both arms slightly bent dropping in a backward and downward and then lifting in a forward and upward direction—The lower portion of the arm circle is executed with speed and force and coincides with the landing and take off. The arms are brought back behind the plane of the body at the lower portion of the circle only.

Landings

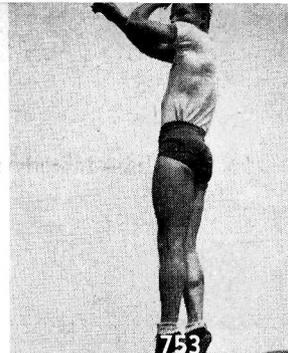
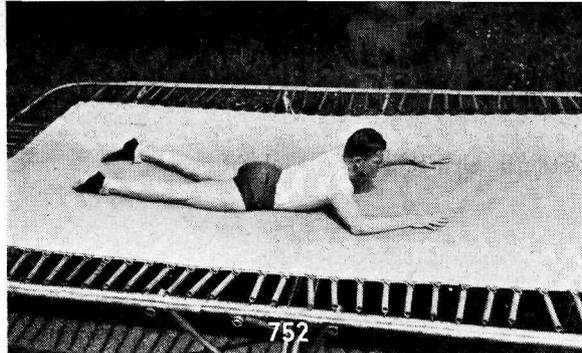
748—*Sit Landing*.—*Legs* fully extended forward, the entire backs of legs contact the canvas simultaneously. *Trunk* slightly inclined backward from the vertical. *Hands* flat on the canvas six to eight inches in back of the hips; hip width apart or wider. *Fingers* point toward the feet; arms slightly bent!

749—*Knee Landing*.—Body erect—Hips almost directly above the knees—Point toes contacting mat with insteps—Hip position fixed!



750—*Back Drop Landing (Straight Leg Style)*.—Landing position is on back with legs straight and vertically inclined—Hands are placed either on the sides and fronts of the legs just above the knees or free of the legs, semi-extended forward-upward!

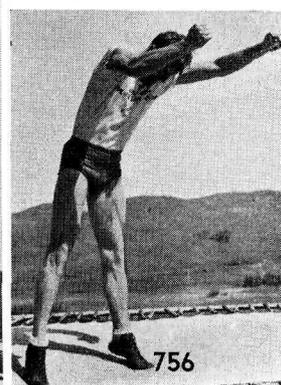
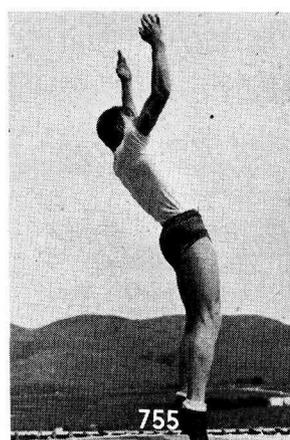
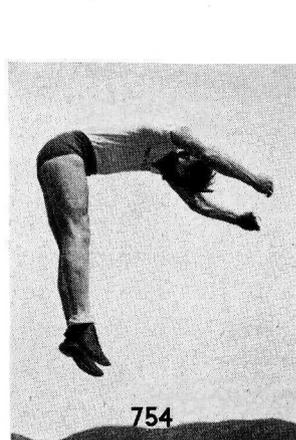
751—*Back Drop Landing (Bent Knee Style)*.—To prepare for the rebound the legs are partially doubled up before landing on the back—The forceful forward and upward straightening of the legs coincides with the landing and adds impetus to the rebound!



752—*Front Drop Landing*.—Landing position is prone without arching back—Arms extended forward; elbows extended sideward—Palms downward—All contact points should land simultaneously. These are: Palms, Forearms, Chest, Abdomen, Thighs.

Twists

753—Keep body straight and legs together while twisting—Twist usually started on take off—When upper body leads twist look toward twist and use arms in twisting—Spread legs on feet-first landings!



Turnovers

754—*Forward Turnover Take off*.—Bend upper body forward out of line with lower body—Lift arms forward, upward—Avoid forward lean, i.e., keep center of weight over feet—Drive legs through to straight knee, pointed toe push away.

755—*Backward Turnover Take off*.—Bend upper body backward out of line with lower body—Lift arms toward overhead position—Avoid backward lean—Finish leg and foot drive before picking up feet.

756—*Sideward Turnover Take off*.—Face slightly forward from sideward—Bend upper body sideways and some forward, out of line with lower body—Keep balance over feet—Complete leg drive!

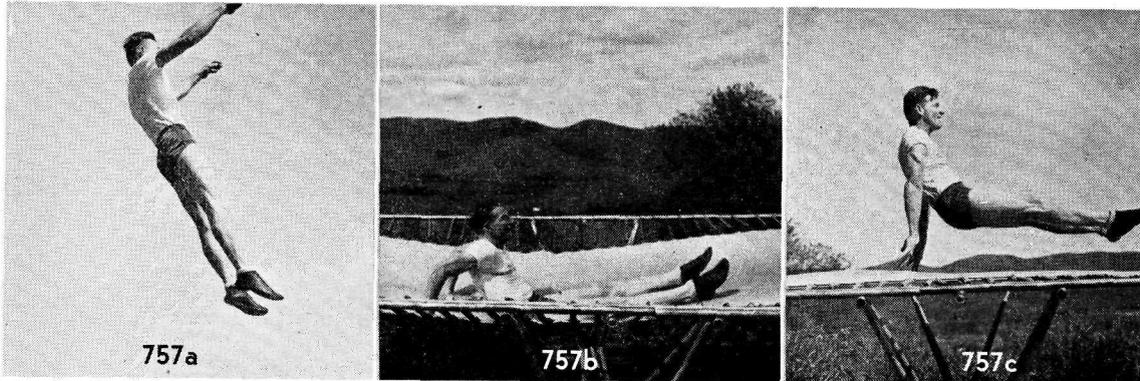
Variations.—If body position is changed immediately after take off to more bend, or tuck, with accompanying head throw, the turnover is relatively low and fast.

If increased bend, etc., is delayed, turnover is higher and slower.

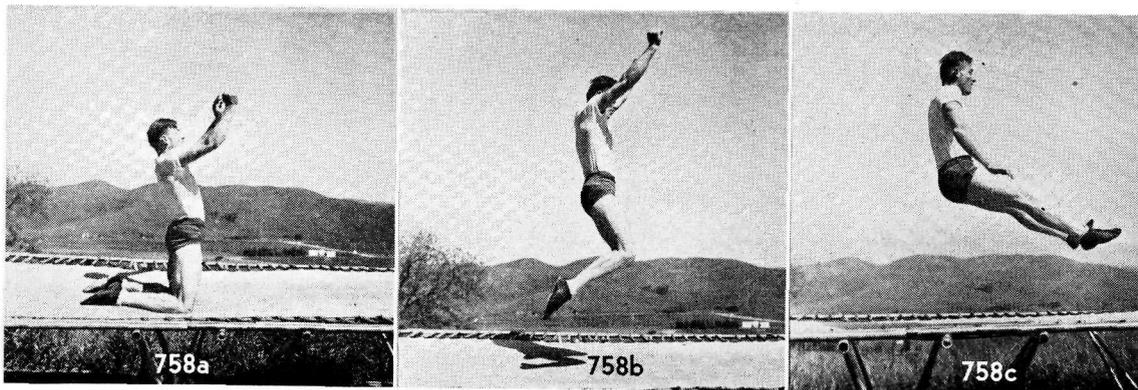
Turnovers are done Layout, Piked, or Tucked, Forward, Backward or Side-ward, and in various fractions and multiples of one.

PROGRESSIVE SERIES OF TRAMPOLINE STUNTS

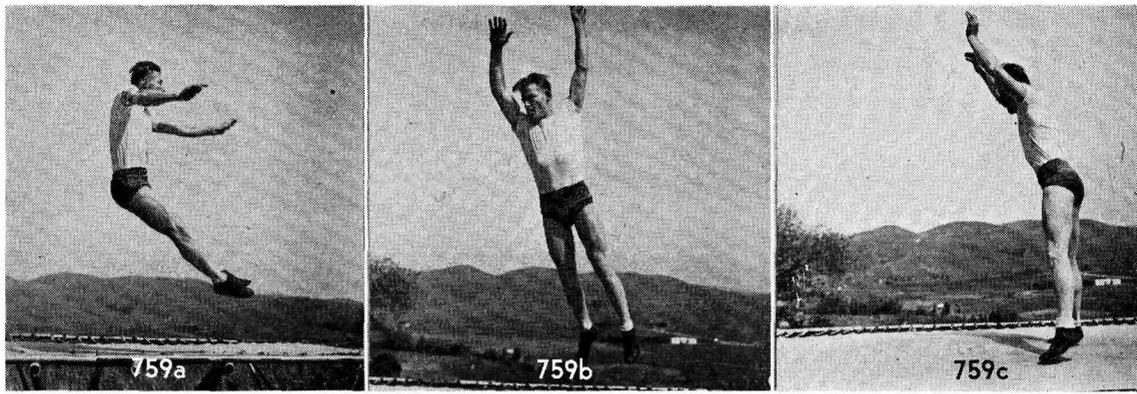
Elementary



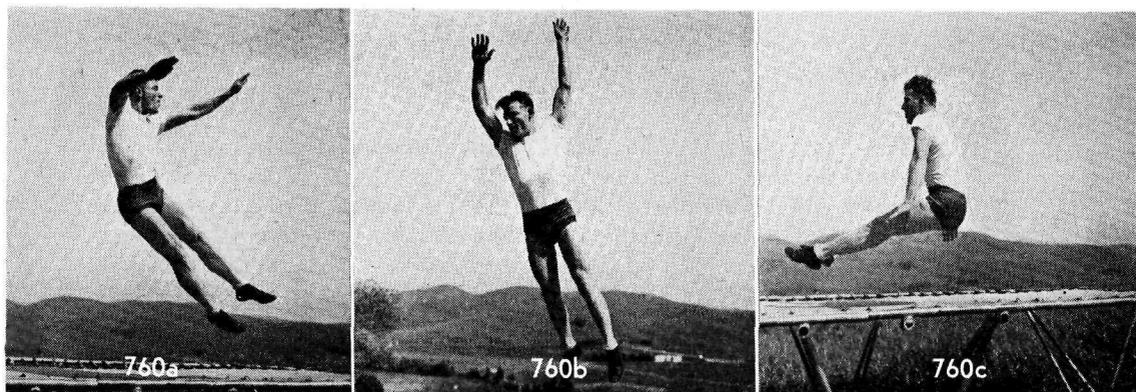
757—*Sit Drop.*—(a) On the take off—Incline body backward by pulling shoulders back and lifting hips forward; (b) Bend body at waist and lower hands just before landing—For landing position see Plate 748 and Cues; (c) To regain standing position, push backward and downward with the hands just after landing—Keep legs straight—Open up to straight body stand!



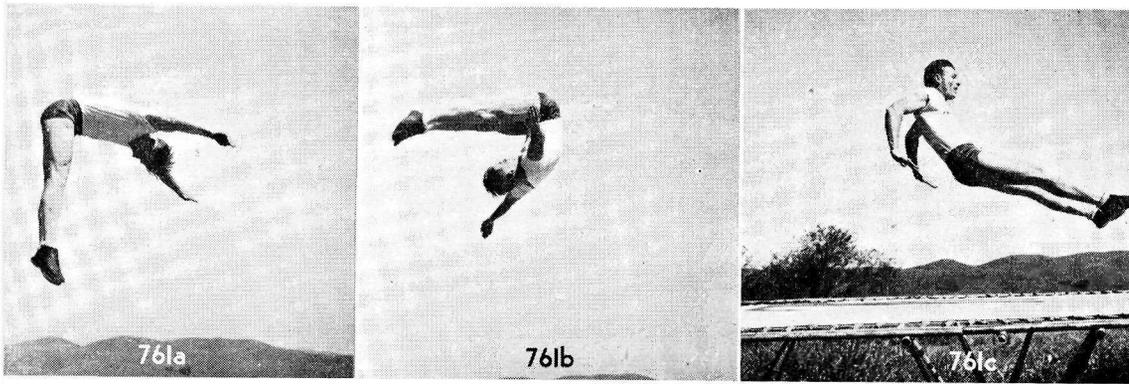
758—*Knees to Sit.*—(a) *Knee landing*—Body erect, weight above knees—Lift arms after landing on knees; (b) Obtain maximum height, with slight backward lean and swing legs through; (c) Make sit drop landing—with hands back of hips on canvas!



759—*Sit, One-half Twist to Feet.*—(a) After landing in backward leaning sit with hands in place behind hips—Push with hands and reach forward and upward and across chest; (b) Arms, head and shoulders lead the twist—Straighten body and complete twist; (c) Land on feet with arms still high!



760—*Sit, One-half Twist to Sit.*—(a) After landing in backward leaning sit, with fingers pointed forward on canvas behind hips—Push with hands, reaching and bending forward with shoulder twist; (b) Swing legs under body pendulum fashion, straightening the body while twisting—Keep legs straight throughout twist; (c) After twist flex body to land on seat with hands on canvas!



761—*Piked Three-Fourths Forward Turnover to Sit.*—(a) Lean very slightly forward on take off—Bend vigorously forward at the waist and drop chin to chest as legs drive downward and toes press away on the take off; (b) The turning position in the air is with body bent at right angle to the waist, chin on chest, arms extended sideward and legs straight; (c) Land in a sit drop position!

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762—*Back Drop.*—(a) Take off—Lean slightly backward; (b) In midair—Head forward with chin on chest, Body Bent; (c) Landing position is on the back—Hands are placed either on the side in front of the leg just above the knee, or free of the legs and semi-extended forward-upward!

763—*Front Drop.*—(a) Initial take off—Lift almost straight up, tipping slightly forward; (b) Midway—Semi-tuck in midair; (c) Front drop landing—Straighten out just prior to landing, arms extended forward—Push with hands to obtain standing position!

764—*Back Drop to Front Drop.*—(a) Back drop landing ready to kick legs; (b) From back drop position, kick forward with legs—After kick, double up legs into a semi-tucked position as the body rotates forward toward front drop position; (c) Front drop landing, flat, with hands on canvas and head up!

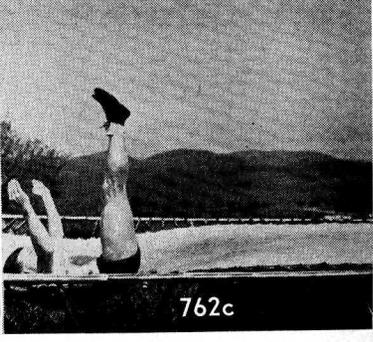
765—*Front Drop to Back Drop.*—(a) Front drop landing; (b) After front drop, push hard with hands, tuck legs to the chest—Keep chin on chest throughout stunt; (c) Back drop landing, doubled up—Kick forward to feet!



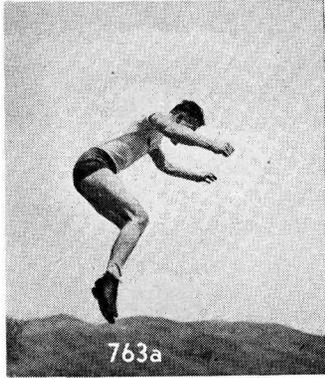
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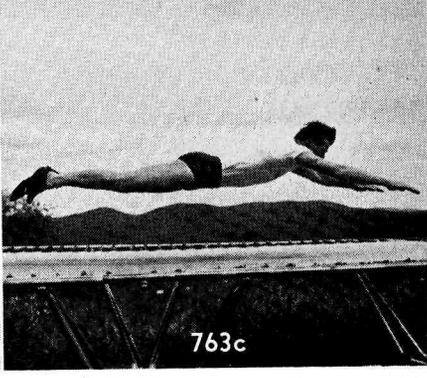
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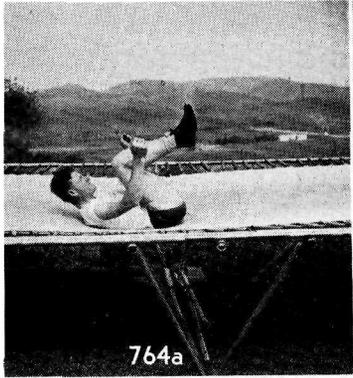
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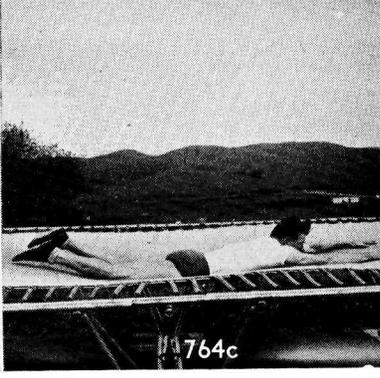
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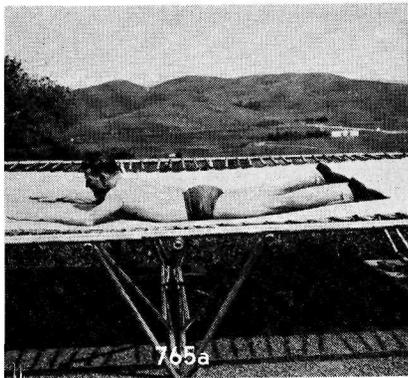
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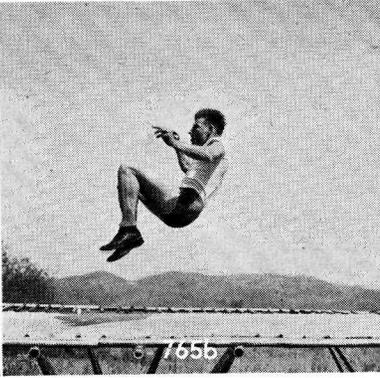
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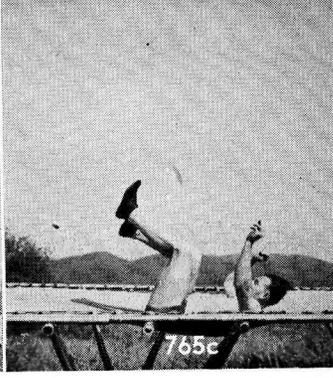
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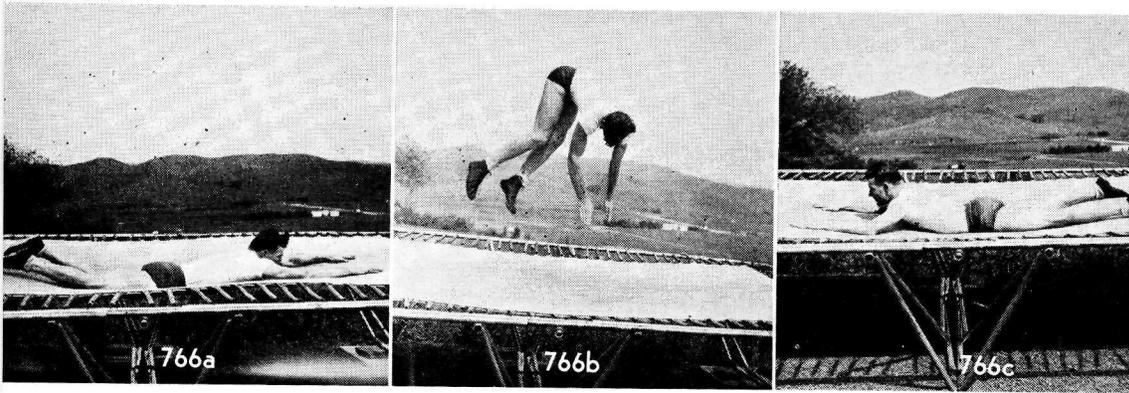
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766—*Front Drop, One-Half Turntable to Front Drop.*—(a) Front drop landing; (b) Push hard sideward with hands and keep head low—Make the turntable with body in a semi-jackknife position; (c) Open to front drop landing, push hands and flex to land on feet!

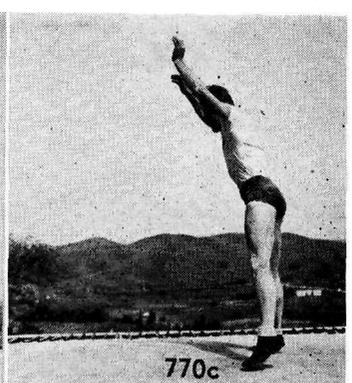
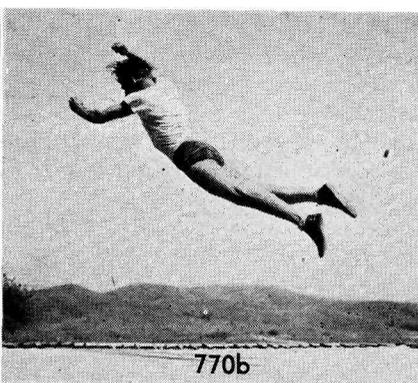
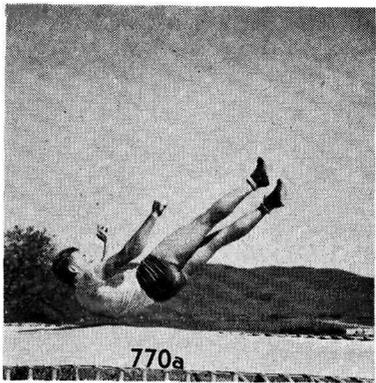
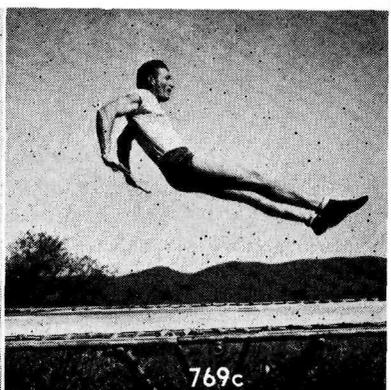
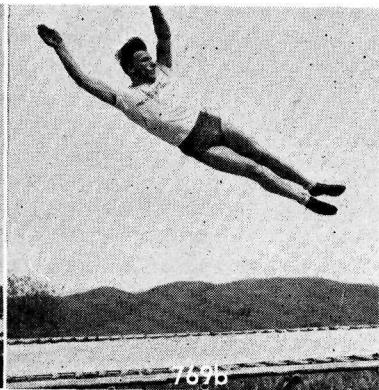
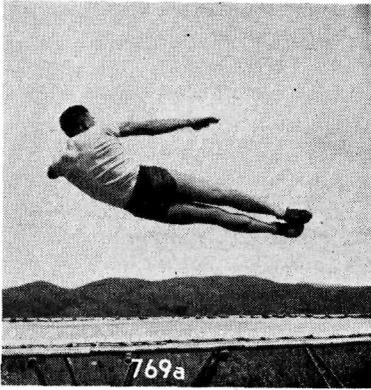
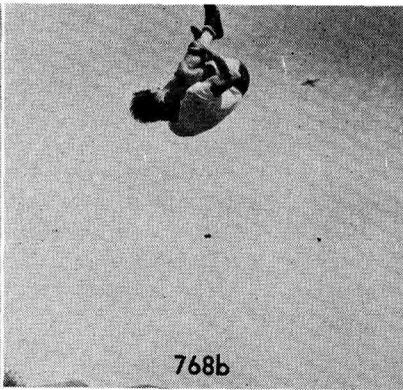
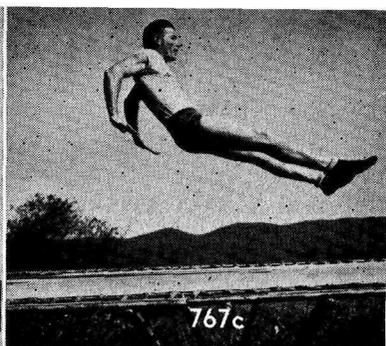
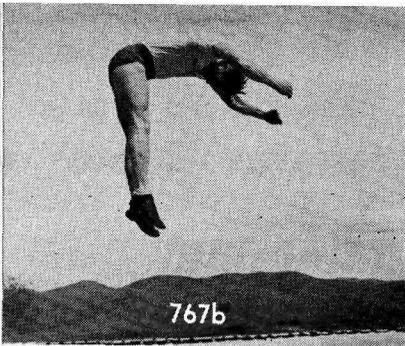
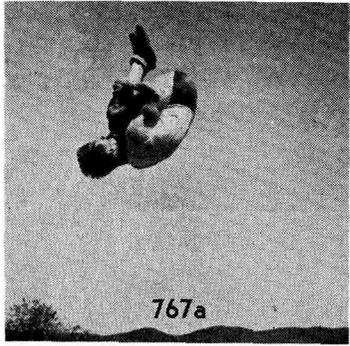
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767—*Tucked Three-Fourths Forward Turnover to Sit Landing.*—(a) Take off—Bend forward, with little or no forward lean; (b) After take off the body bends more and the knees are bent and brought up to the chest, the hands grasp the shins tightly (tuck position); (c) The tuck is held briefly, and is followed by a fast forward kick to the straight leg, bent body, sit landing position!

768—*Tucked Forward Turnover to the Feet.*—(a) Lift with the arms while bending at the waist before bending the knees and grabbing the tuck; (b) Midway—Snap the head down a little faster and pull a little longer on the shins in the tuck than for the three-fourths turnover; (c) Open from tuck shooting feet downward to canvas—Keep eyes on canvas—At first, land in a bent knee position (for safety)!

769—*Sit Drop Full Twist to Sit.*—(a) After first sit landing—The hands push away from the canvas and swing upward and across the body in the direction of the twist, eyes watch feet; (b) The trunk leans back and the body straightens toward a horizontal layout position as the head makes its twist—Body is straight throughout twist; (c) Bend body slightly upon finish of twist to sit landing position!

770—*Back Drop One-Half Twist to the Feet.*—(a) From the bent knee back drop position, kick legs vigorously upward and forward rotating legs and hips to left or right; (b) Turn the head with the upper part of the body after hip twist; (c) When the body is straight, and the twist is completed, the feet are swung to the canvas, legs straight!





771—*Back Drop One-Half Twist to Back Drop.*—(a) Take Off from Back Drop—Same as in Plate 770a, except kick is more forward and less upward in direction; (b) Body is straightened while twisting; (c) After twisting, both knees are brought to the chest and held thus until the body has turned backward far enough for a second back drop landing and subsequent bounce to feet.

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772—*Back Turnover to Feet (Open).*—(a) On the take off for the turnover, there is a very slight backward lean, and the start of a backward body bend—Arms Lifting Head Starting Back; (b) As the arms are swung upward and back over the head, the shoulders are pulled back and the hips are thrust forward—The head is snapped back as hard as possible—The knees may be bent after the take off is completed; (c) At the completion of half the somersault, the body is bent forward somewhat at the waist to bring the feet over for the landing—(At first, land in a bent knee position for safety)!

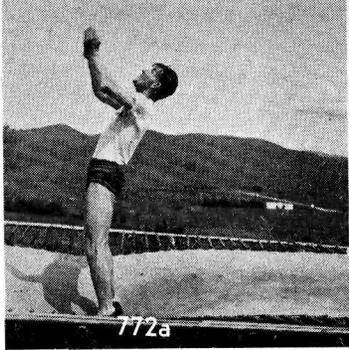
Attempt this stunt first in a safety belt, or with expert hand spotting!

ADDITIONAL TRAMPOLINE STUNTS

773—*Sit, Full Twist to Feet.*—(a) From regular sit landing, push hard with hands and reach forward upward and across, straightening the body out as quickly as possible; (b) The twist is continued with head and shoulders pulling in direction of twist, body and legs straight and hands over head; (c) Land facing original direction. Hands may drop or remain overhead depending on nature of the succeeding stunt.

774—*One-Half Twist to Sit.*—(a) Lean and tip forward with forward-upward arm swing on take off; twist shoulders, but not head; (b) Twist of head and hips follow; body still straight; (c) Break at waist and drop hands to sit landing!

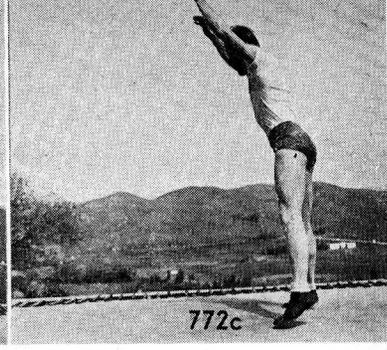
775—*Full Twist to Sit Landing.*—(a) Lean and tip backward on take off; twist head and shoulders; body straight, arms high; (b) Complete twist before bending at waist for sit landing; (c) Drop arms and flex body to Sit Landing—Legs flat, hands back!



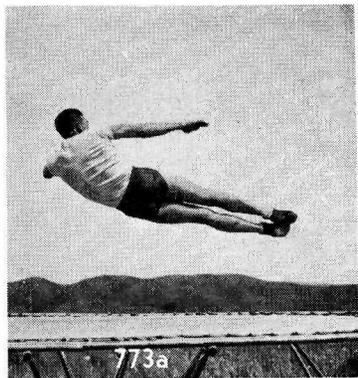
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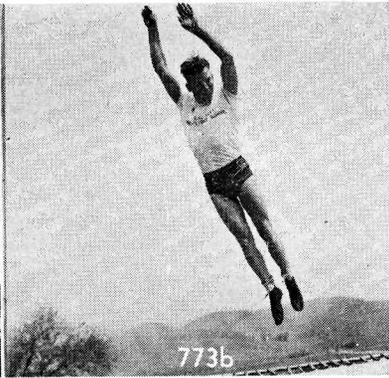
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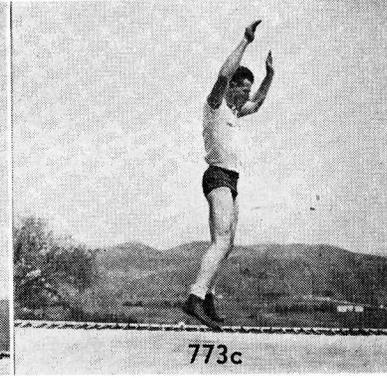
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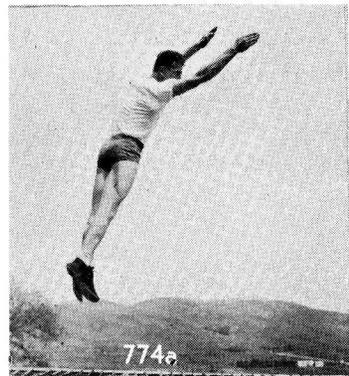
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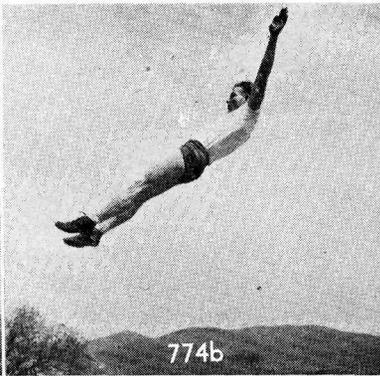
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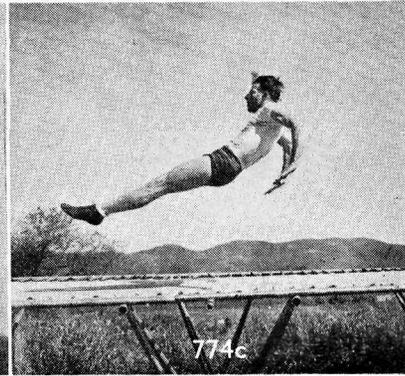
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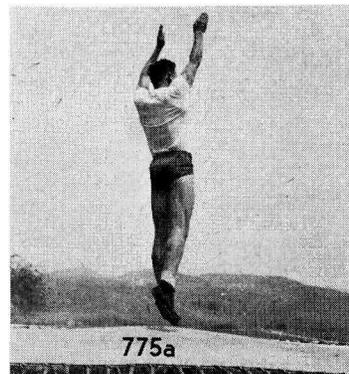
774a



774b



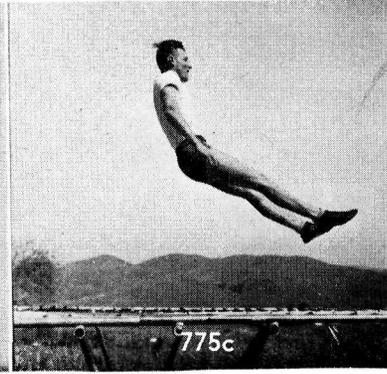
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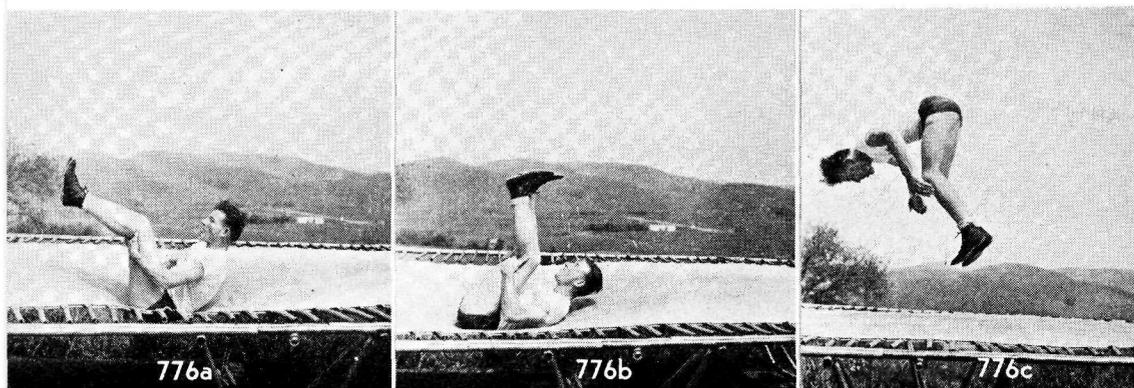
775a



775b



775c



776—*Back Pullover to Feet.*—(a) Land on base of spine; feet off mat; hands under legs; legs slightly bent; (b) Keep chin near chest; pull up on legs; roll over backward; (c) Release legs; come to a stand!

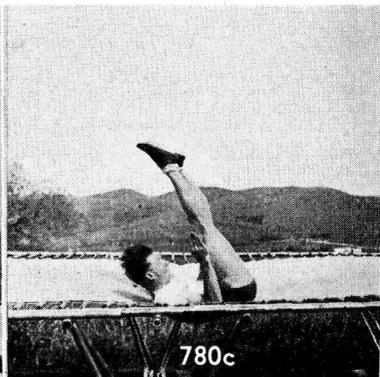
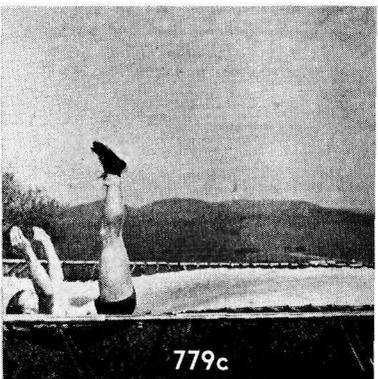
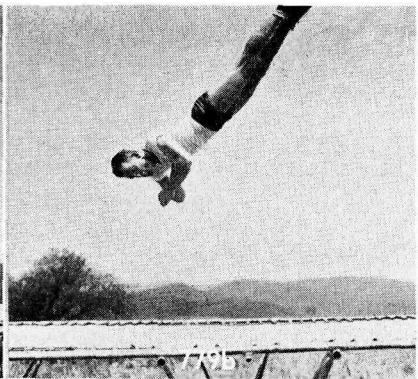
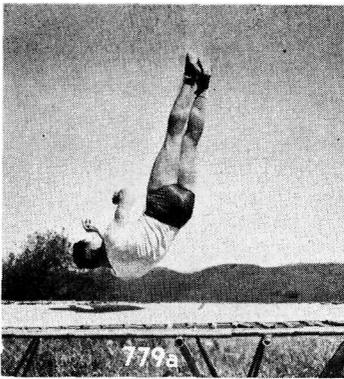
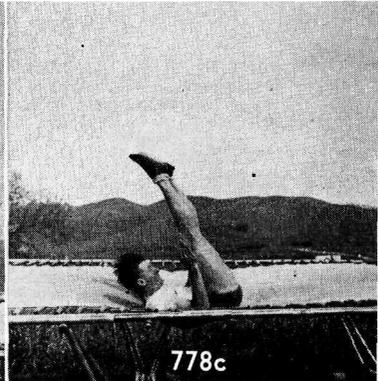
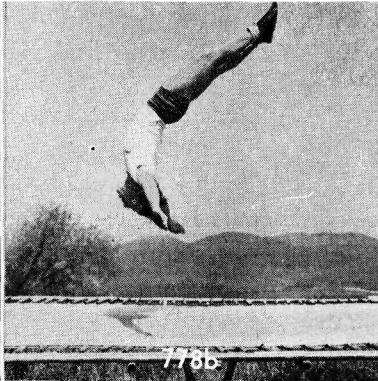
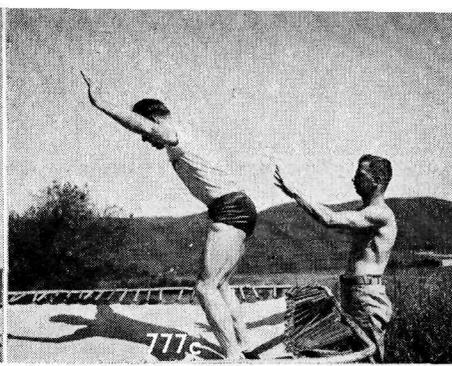
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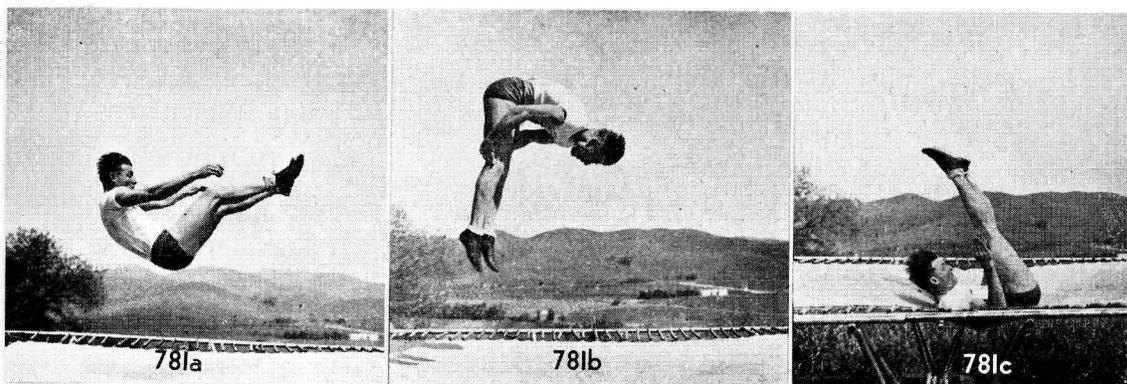
777—*Back Pullover to Back Pullover.*—(a) Spot the first landing at front end of trampoline; (b) Between First and Second Back Landing—Continue leg pull on bent up legs; keeping head down and landing for second pull-over; (c) Complete the series to the feet—Have alert guard at frame behind performer to prevent involuntary third sit!

778—*Back Drop, Vertical Arch, Back Drop.*—(a) From back drop kick out almost vertically with legs straight and together; (b) Put head back and arms out to vertical inverted swan position and hold as long as safe; (c) Just before landing, duck head; flex at waist to back drop—Bounce to feet!

779—*Back Drop, Full Twist, Back Drop.*—(a) From bent knee back drop, make a nearly vertical kick with twist of legs and hips; (b) Complete the full twist with body straight, arms in close, and eyes watching canvas; (c) Complete the head twist, and flex at the waist to back drop landing and bounce to the feet.

780—*Bent Dive to Back Drop.*—(a) Take off from feet leaning slightly and bending to a right angle forward. Keep Head Up; (b) Keeping eyes on landing spot and arms outstretched forward, turn forward until nearly to canvas; (c) Duck head and bend more at waist to back drop landing—Bounce forward to feet!





781—*Back Drop, Bent Dive, to Back Drop.*—(a) Bent knee back drop; kick out forward, upward; (b) Bend at waist sitting up and grasping hands behind legs—Eyes on canvas until nearly there, then duck; (c) Land on back—Push on legs—Bounce to feet!

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782—*Swan Dive to Back Drop.*—(a) Swan dive position; head up; Aim high; Heels lifting; Ride it; (b) Tip swan dive well over to inverted vertical hang; (c) Duck and bend late and not too vigorously—Keep legs straight on back landing for rebound to feet!

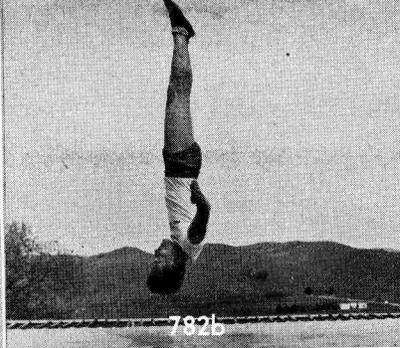
783—*One-Half Twist to Front Drop.*—(a) Arms and shoulders lead the twist—Lift hips forward, upward while twisting—Turn of head follows; (b) Pull feet back to horizontal swan before dropping; (c) Eyes on canvas; land on belly, hands on canvas—Bounce to feet!

784—*Layout Backward, Three-Fourths Turnover to Front Drop.*—(a) On take off lift hips forward, upward, pulling shoulders back, arms out to side; (b) Snap head back, emphasize arch, watch canvas; (c) Kill arch and flatten before landing—Land on belly, head up, arms forward—Bounce to feet!

785—*Tucked Backward Three-Fourths Turnover to Front Drop.*—(a) In starting the Turnover, stretch before tucking; (b) Pull to inverted Tuck—Head back during tuck; (c) Start out of tuck early—Finish opening to flat position just before landing—Bounce to feet!



782a



782b



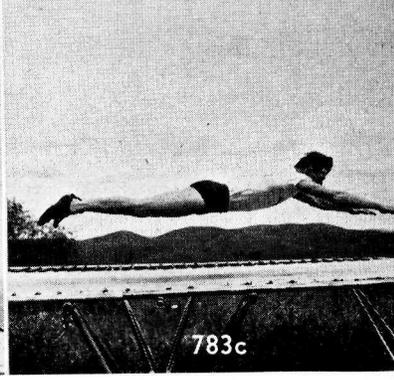
782c



783a



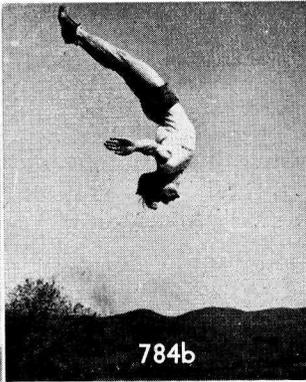
783b



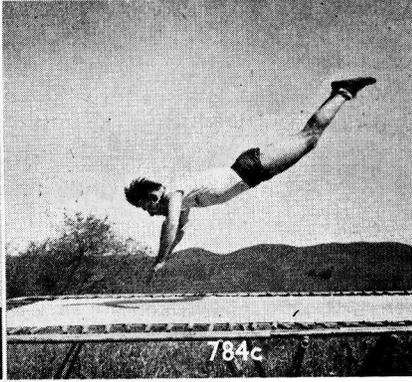
783c



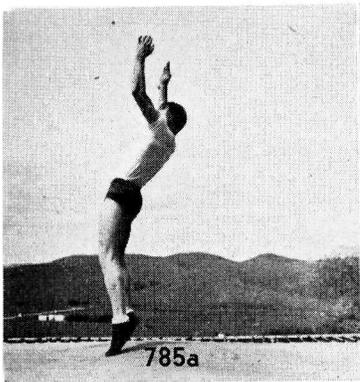
784a



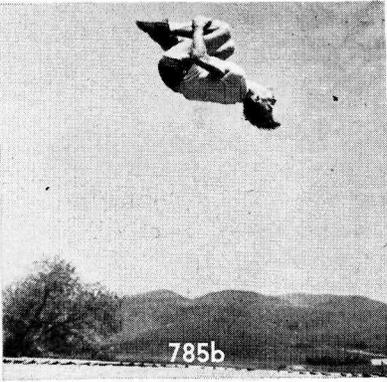
784b



784c



785a



785b



785c



786—*Swan, Tuck Three-Fourths Forward Turnover to Seat Drop.*—(a) Turn the swan well over quickly; (b) Break fast to tuck; hold briefly; (c) Kick out forward to sit—Bounce to feet!

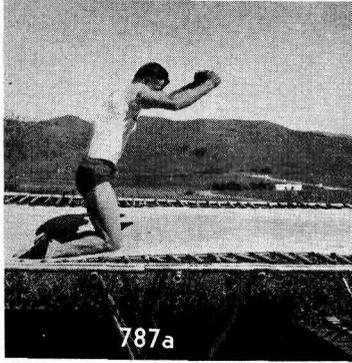
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787—*Knee Forward Turnover to Feet.*—(a) Knee Take Off, Arms Swinging Up; (b) Starting the Turnover—Press away with the feet by straightening knees; (c) Tuck after the feet leave the canvas—Feet kick out for landing!

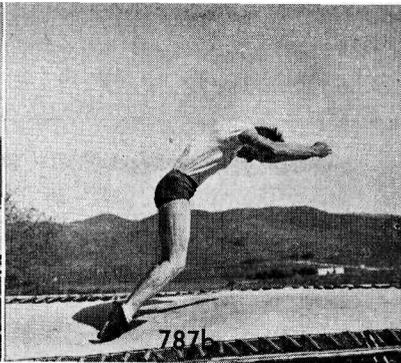
788—*Piked Forward One and One-Quarter Turnover to Front Drop.*—(a) Starting the Spin—Drive off with final leg and foot push emphasis—Bend sharply and duck hard; (b) Hold pike tight until over once then open gradually; (c) Landing is flat on the front, with head up—Bounce to feet!

789—*Half Twisting Tucked Forward Turnover to Feet.*—(a) The Tucked Spin is done fast in order to kick out early; (b) Kick out horizontally with hips twisting, then head following; (c) As twist is completed flex slightly to land on feet!

790—*Half Twisting Forward One and One-Quarter Turnover to Back Drop.*—(a) Start the Twisting Kickout after turnover in tight tuck; (b) [Complete the Twist In Straight Body Position with the head following the hip], (c) Before Landing, after twist is completed, double up again to turn to backdrop—Bounce to Stand!



787a



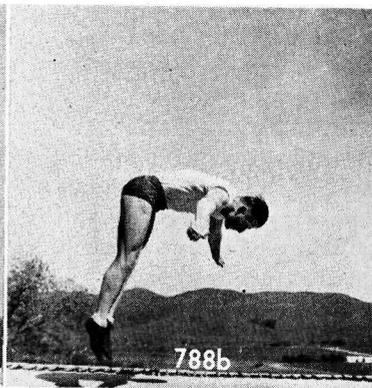
787b



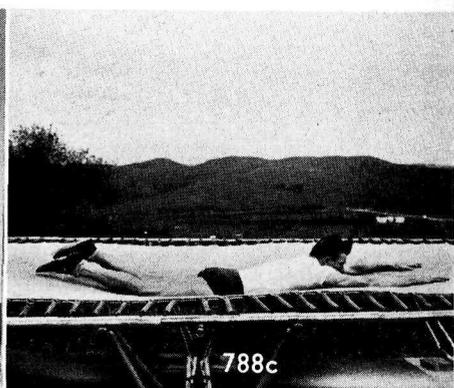
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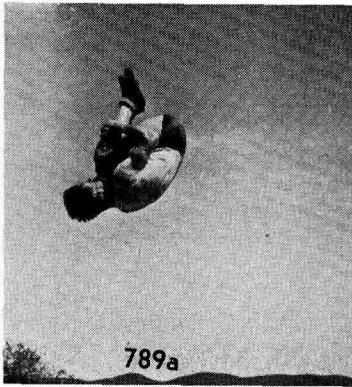
788a



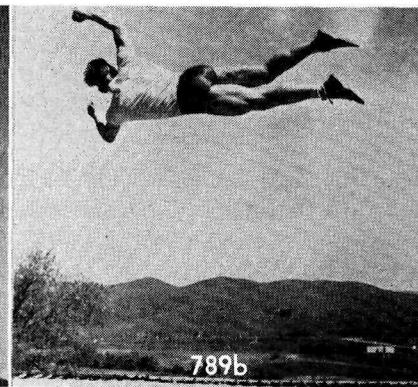
788b



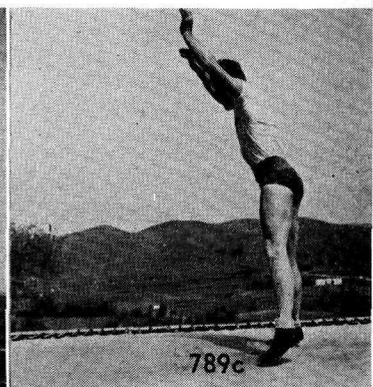
788c



789a



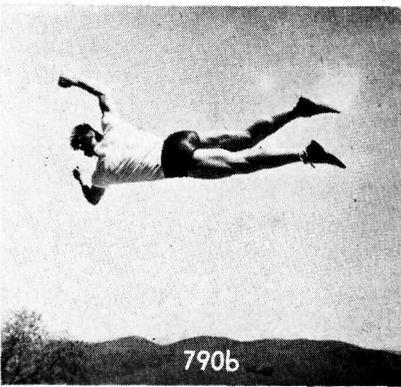
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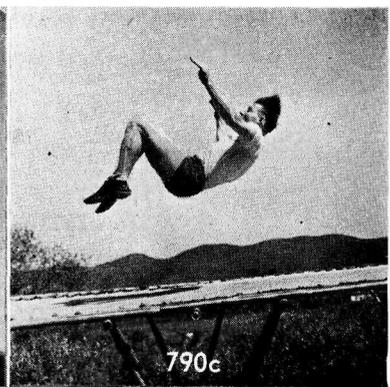
789c



790a



790b



790c



791—*Brandy (Borani)*.—(a) The Piked, Hip lift first with head up but body bent well forward; (b) Swing Legs Over With a Twist—Jackknife opens through inverted vertical straight body twist; (c) Flex again at waist to bring feet down to landing—Can be learned by putting hands on canvas as in roundoff on mat!

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792—*Side Somersault*.—(a) Take off facing and bending a little forward from sideways; (b) Tuck as for forward somersault; top of head toward side wall, look for landing surface; (c) Land facing sideward by opening from tuck when well over!

793—*Tucked Backward Turnover to Feet*.—(a) Feet leave trampoline with knees straight, hips forward, head a little back, hands above shoulders; (b) Head back, hand and body tuck at top of spring; (c) Kick out straight and drop to feet, eyes on canvas!

794—*Tucked Backward One and One-Quarter Turnover to Sit Landing*.—(a) Turn in tuck slightly farther than for single back somersault; (b) Kick feet forward and downward, Hands to the stern; (c) Backward leaning sit landing, hands back!

795—*Piked Backward Turnover to Feet*.—(a) First air position is layout with hips forward and head slightly back; (b) Snappy leg lift into pike, hands under legs; (c) Open late to vertical straight body, feet first landing!



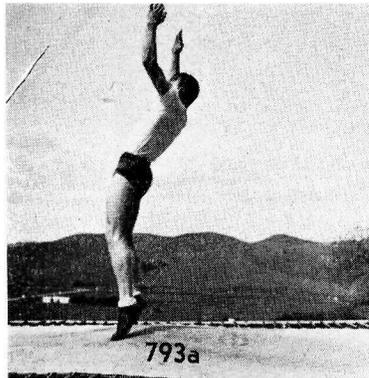
792a



792b



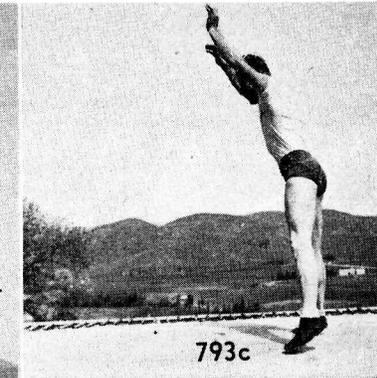
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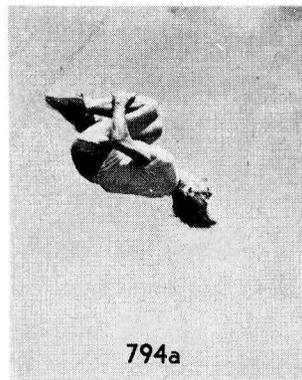
793a



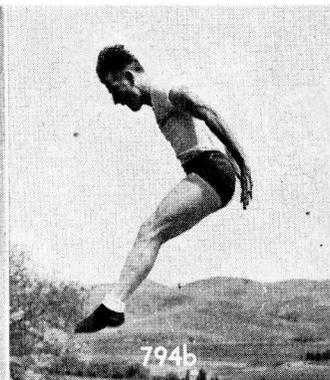
793b



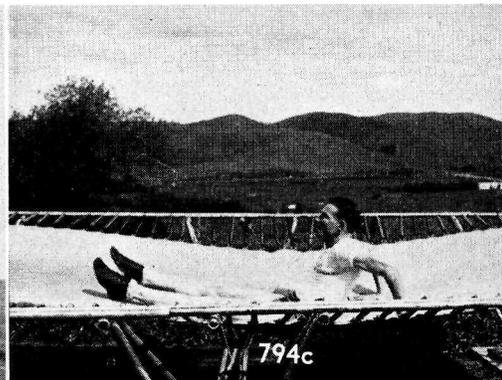
793c



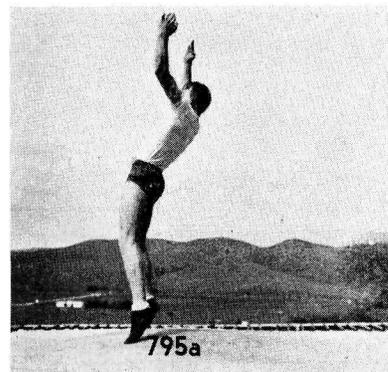
794a



794b



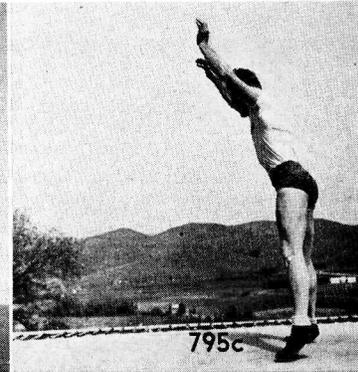
794c



795a



795b



795c



796—*Layout Backward Turnover to Feet.*—(a) The take off is vertical with an immediate severe backward arch pull with head, shoulders, upper back and at the waist; (b) A complete leg drive and foot push away are essential, knees straight throughout. Continue to pull in arch; (c) Continue pull of head and body until looking forward once more. Don't stop head looking at canvas! Flex body only very slightly for landing!



797—*Half Twisting Backward Turnover to Feet.*—(a) Turn somersault over straight until eyes see canvas; (b) Then twist hips, trunk and head follow the twist; (c) Continue Turning Forward to Feet First Landing (Overturn the somersault slightly to facilitate the body twist)!

COMPREHENSIVE LIST OF TRAMPOLINE STUNTS WITH DIFFICULTY RATING

The following is a more or less all inclusive list of trampoline stunts arranged according to similarity rather than progressive difficulty. The difficulty of each stunt is indicated by a number (1), (2), (3), (4) or (5) following the brief description. The numbers (1) identify tricks of an elementary nature; numbers (2) identify intermediate tricks; numbers (3) identify advanced tricks; numbers (4) identify more advanced tricks, and numbers (5) identify extremely difficult tricks.

If there is a photograph and additional descriptive material on a particular stunt in this chapter, reference to the Illustration will follow the brief description here. Many moves can be executed in addition to the stunts listed and an almost *unlimited variety* can be obtained by *combining in various continuous series two or more* of the same or different stunts. The stunts are grouped according to predominant features, but most stunts would obviously fit in two or three groups.

Sit Tricks

1. Jump to Sit, Bounce to Feet. (1)
(Plates 748, 757a, 757b)
2. Jump with Forward Lean with One-half Twist to Sit, Bounce to Feet. (1)
(Plates 774a, 774b, 774c)
3. Jump with Backward Lean with Full Twist to Sit, Bounce to Feet. (1)
(Plates 775a, 775b, 775c)
4. Jump with Forward Lean, with One and One-half Twist to Sit, Bounce to Feet. (2)
5. Jump with Backward Lean, with Double Twist to Sit, Bounce to Feet. (3)
6. Jump to Sit, Bounce with One-half Twist to Feet. (1)
(Plates 759a, 759b, 759c)
7. Jump to Sit, Bounce with Full Twist to Feet. (1)
(Plates 773a, 773b, 773c)
8. Jump to Sit, Bounce with One and One-half Twist to Feet. (2)
9. Jump to Sit, Bounce with Forward Turn with One-half Twist to Sit, Bounce to Feet. (1)
(Plates 760a, 760b, 760c)
10. Jump to Sit, Bounce with Forward Turn with One-half Twist to Back Drop Landing, Bounce to Feet. (2)
11. Jump to Sit, Bounce with Backward Lean to Back Drop, Bounce to Feet. (1)
12. Jump to Sit, Bounce with Backward Lean with Full Twist to Sit, Bounce to Feet. (2)
(Plates 769a, 769b, 769c)
13. Jump to Sit, Bounce with Backward Lean with One-half Twist to Front, Bounce to Feet. (1)
14. Jump to Sit, Bounce with Backward Lean with Full Twist to Back Drop, Bounce to Feet. (2)
15. Jump to Landing between Sit and Back Drop, Bounce pulling Legs over Backward to Feet (Back Pullover). (1)
(Plates 776a, 776b, 776c)
16. Jump to Back Pullover with One-half Twist to Feet. (2)
17. Jump to Back Pullover with Full Twist to Feet. (3)
18. Jump to Back Pullover to Back Pullover to Feet. (2)
(Plates 777a, 777b, 777c)
19. Jump with Forward Lean with Half Twist to Back Pullover to Feet. (2)
20. Jump with Backward Lean with Full Twist to Back Pullover to Feet. (2)
21. Jump to Back Pullover to Flat Front, Bounce to Feet. (1)

Back Drop Tricks

1. Jump to Straight Leg Back Drop Bounce to Feet. (1)
(Plates 750, 762a, 762b, 762c)
2. Jump to Bent Knee Back Drop, Kick Out to Feet. (1)
(Plate 751)
3. Bounce with Forward Lean with One-half Twist to Back Drop, Bounce to Feet. (2)
4. Jump with Backward Lean with Full Twist to Back Drop, Bounce to Feet. (2)
5. Jump to Back Drop, Bounce with One-half Twist to Feet. (1)
(Plates 770a, 770b, 770c)
6. Jump to Back Drop, Bounce Forward with One-half Twist to Back Drop, Bounce to Feet. (2)
(Plates 771a, 771b, 771c)
7. Jump to Back Drop, Bounce with Full Twist to Feet. (2)
8. Jump to Back Drop, Bounce with One-half Twist to Front, Bounce to Feet. (1)
9. Jump to Back Drop, Bounce Turning Backward to Front, Bounce to Feet. (1)
10. Jump to Back Drop, Bounce to Inverted Vertical Head-back Arch, Flex to Back Drop, Bounce to Feet. (2)
(Plates 778a, 778b, 778c)
11. Jump to Back Drop, Bounce to Inverted Vertical with Full Twist, to Back Drop, Bounce to Feet. (3)
(Plates 779a, 779b, 779c)
12. Jump to Back Drop, Bounce to Inverted Vertical with Half Twist, Duck Under to Back Drop, Bounce to Feet. (3)
13. Jump to Back Drop, Bounce Turning Forward to Front Drop, Bounce to Feet. (1)
(Plates 764a, 764b, 764c)
14. Jump to Back Drop, Bounce Turning Forward with Full Twist to Front, Bounce to Feet. (3)
15. Dive Forward Bent Body, Duck Under to Back Drop Landing, Bounce to Feet. (2)
(Plates 780a, 780b, 780c)
16. Jump to Back Drop, Bounce Turning Forward, Duck Under to Back Drop Landing, Bounce to Feet. (3)
(Plates 781a, 781b, 781c)
17. Dive Forward Bent Body, Duck Under to Back Drop Landing, Bounce Turning Forward Bent Body to Back Drop, Bounce to Feet. (3)
18. Swan Dive Turning Forward, Duck Under to Back Drop Landing, Bounce to Feet. (3)
(Plates 782a, 782b, 782c)
19. Jackknife Dive Turning Forward, Duck Under to Back Drop Landing, Bounce to Feet. (3)
20. Dive Turning Forward, Duck Under to Back Drop Landing, Bounce with One-half Twist to Feet. (2)

21. Dive Turning Forward, Duck Under to Back Drop Landing, Bounce with Full Twist to Feet. (3)

Suggestions for More Advanced Tricks

1. Jump to Back Drop, Bounce Turning Forward with One and One-half Twist to Back Drop, Bounce to Feet. (4)
2. Jackknife Dive Turning Forward, Swan Opening, Duck Under to Back Drop Landing, Bounce to Feet. (4)

Front Drop Tricks

1. Jump Forward in Semi-jackknife to Horizontal, Open to Flat Front Landing, Bounce to Feet. (1)
(Plates 763a, 763b, 763c)
2. Jump, Turning Forward in Tuck, Open to Flat Front Landing, Bounce to Feet. (2)
3. Jump, Turning Forward in Jackknife, Flat Front Landing, Bounce to Feet. (2)
4. Jump, Turning Forward in Swan, Flat Front Landing, Bounce to Feet. (2)
5. Jump, Turning Backward with Half Twist to Front Drop Landing, Bounce to Feet. (1)
(Plates 783a, 783b, 783c)
6. Jump to Front Drop, Bounce Turning Backward, to Sit, Bounce to Feet. (1)
7. Jump to Front Drop, Bounce Turning Backward, to Backdrop Landing, Bounce to Feet. (2)
(Plates 765a, 765b, 765c)
8. Jump to Front Drop, Bounce with Half Turntable to Front Drop, Bounce to Feet. (2)
(Plates 766a, 766b, 766c)
9. Jump, Turning Forward with Full Twist to Front Drop, Bounce to Feet. (2)
10. Jump, Turning Backward with One and One-half Twist to Front Drop, Bounce to Feet. (3)
11. Jump to Front Drop, Bounce Turning Backward with One-half Twist to Front Drop, Bounce to Feet. (1)
12. Jump to Front Drop, Bounce Turning Backward to Back Pullover to Feet. (2)
13. Jump to Front Drop, Bounce to Jackknife, Drop to Flat Front, Bounce to Feet. (2)
14. Jump to Front Drop, Bounce to Tuck, Drop to Flat Front, Bounce to Feet. (2)
15. Jump to Front Drop, Bounce to Horizontal Full Twist, Drop to Flat Front, Bounce to Feet. (3)
16. Jump to Sit, Lay Back Turning Backward to Front Drop, Bounce to Feet. (2)
17. Jump into Layout Backward Three Quarter Turnover to Flat Front, Bounce to Feet. (3)
(Plates 784a, 784b, 784c)

18. Jump into Tucked Backward Three-quarter Turnover to Flat Front, Bounce to Feet. (3)
(Plates 785a, 785b, 785c)
 19. Jump into Piked Backward Three-quarter Turnover to Flat Front, Bounce to Feet. (3)
- Suggestions for More Advanced Tricks*
1. Jump Turning Forward with Double Twist to Front Drop. (4)
 2. Jump to Front Drop, Bounce with Tucked Full Turntable to Front Drop. (4)
 3. Jump into Layout Backward Three-quarter Turnover with Full Twist to Flat Front, Bounce to Feet. (4)

Forward Turnover Tricks

1. Jump, Turning Forward in Pike Position to Sit Landing, Bounce to Feet. (1)
(Plates 761a, 761b, 761c)
2. Jump, Turning Forward in Tuck Position to Sit Landing, Bounce to Feet. (2)
(Plates 767a, 767b, 767c)
3. Dive, Turning Forward in Swan Position, Break to Tuck, Kickout to Sit, Bounce to Feet (Flying Three-quarter Forward Somersault). (3)
(Plates 786a, 786b, 786c)
4. Dive, Turning Forward in Swan Position, Break to Pike to Sit, Bounce to Feet. (3)
5. Jump, Turning Over Forward in Tucked Position, Kickout to Feet. (3)
(Plates 768a, 768b, 768c)
6. Jump, Turning Over Forward in Piked Position, Open to Feet. (3)
7. Jump, Turning Over Forward in Tucked Position Once and One-quarter to Front Drop, Bounce to Feet. (3)
8. Jump, Turning Over Forward in Piked Position Once and One-quarter to Front Drop, Bounce to Feet. (3)
(Plates 788a, 788b, 788c)
9. Jump to Knee Drop, Bounce Turning Over Forward Once in Tucked Position to Feet. (3)
(Plates 787a, 787b, 787c)
10. Jump to Knee Drop, Bounce Turning Over Forward Once in Tucked Position to Knee Drop, Bounce to Feet. (3)
11. Jump to Knee Drop, Bounce Turning Over Forward Once and One-quarter in a Tucked Position to Front Drop, Bounce to Feet. (3)
12. Jump to Knee Drop, Bounce Turning Over Once Forward in a Piked Position to the Feet. (3)
13. Jump to Back Drop, Bounce Turning Forward in a Tucked Position or Piked Position Once and One-quarter to a Sit, Bounce to Feet. (3)
14. Jump, Turning Over Forward in Tuck Position, Kick Out with One-half Twist to Feet. (3)
(Plates 789a, 789b, 789c)
15. Jump, Turning Over Forward in Piked Position with One-half Twist to the Feet (3)

16. Jump, Turning Over Three-quarters Forward in Piked Position with Full Twist to Sit, Bounce to Feet. (3)
17. From a Take Off Slightly Forward of Sideways, Turn Over Sideways and Forward in a Tucked Position, Kickout to Side Facing Landing on Feet (Side Somersault). (3)
(Plates 792a, 792b, 792c)

Suggestions for More Advanced Tricks

1. Jump, Turning Over Forward in Swan Position to Feet. (4)
2. Jump, Turning Over Forward in Tuck Position Once and One-half, Open Partially, Duck Under to Back Drop Landing, Bounce to Feet. (4)
3. Jump, Turning Over Forward in Piked Position, One and One Two-thirds to Back Drop Landing, Bounce to Feet. (4)
4. Jump, Turning Over Forward in Tuck Position Once and Three-quarters, Kick Out to Sit Landing, Bounce to Feet. (4)
5. Jump, Turning Over Forward in Piked Position Once and Three-quarters to Sit Landing, Bounce to Feet. (4)
6. Jump, Turning Over Forward in Tucked Position Twice, Kickout to Feet. (5)
7. Jump to Knee Drop, Bounce Turning Over Forward Once and Three-quarters in a Tucked Position to Sit, Bounce to Feet. (4)
8. Jump to Back Drop, Bounce, Turning Over Forward Once and One-half in a Tuck Position to the Feet. (4)
9. Jump, Turning Over Forward in an Open Piked Position with Full Twist to feet. (4)
10. Jump, Turning Over Forward One and One-quarter with One-half Twist to Sit or Back Drop Landing, Bounce to Feet. (4)
(Plates 790a, 790b, 790c)
11. Jump, Turning Over Forward in Open Piked Position One and One-quarter with Full Twist to Front Drop, Bounce to Feet. (4)
12. Jump, Turning Over Forward in Open Position with One and One-half Twist to Feet. (5)
13. Jump, Turning Over Forward in Open Position with Double Twists to Feet. (5)
14. Jump, Turning Forward in Swan Position, Break to Tucked or Piked Position, Open to Feet (Flying Somersault). (4)
15. Jump, Turning Forward in Swan Position, Break to Tucked Position Turning Forward to Front Landing, Bounce to Feet (Flying One and One-quarter Somersault). (4)
16. Jump, Turning Forward in Head-up Piked Position with One-half Twist Opening to Feet (Aerial Round Off, or Borani). (4)
(Plates 791a, 791b, 791c)

Backward Turnover Tricks

1. Jump, Turning Over Backward, Tuck, Pull, and Kickout to Feet. (3)
(Plates 793a, 793b, 793c)
2. Jump, Turning Over Backward in Layout Position, Bend Body and Knees to Land on Feet. (3)
(Plates 796a, 796b, 796c)

3. Jump, Turning Over Backward One and One-quarter in Tucked Position to Sit Landing, Bounce to Feet. (Plates 794a, 794b, 794c) (3)
4. Jump, Turning Over Backward in Layout Position, One-half Twist to Sit. (3)
5. Jump, Turning Over Backward in Layout Position, Hold Layout until Landing on Feet. (Plates 796a, 796b, 796c) (4)
6. Jump, Turning Over Backward One and One-quarter in Piked Position to Sit Landing, Bounce to Feet. (4)
7. Jump, Turning Over Backward One and One-quarter in Layout Position, Flex to Sit, Bounce to Feet. (4)
8. Jump, Turning Over Backward One and One-half in Tucked Position to Back Drop Landing, Bounce to Feet. (4)
9. Jump, Turning Over Backward One and One-half in Piked Position to Back Drop Landing, Bounce to Feet. (4)
10. Jump, Turning Over One and One-half Backward in Layout Position, Flex to Back Drop Landing, Bounce to Feet. (4)
11. Jump, Turning Over Backward One and Three-quarters in Tucked Position to Hands and Knees Landing, Bounce to Feet. (4)
12. Jump, Turning Over Backward Twice in Tuck Position, Kick Out to Feet. (4)
13. Jump, Turning Over Backward in Layout Position, One-half Twist to Feet. (Plates 797a, 797b, 797c) (4)
14. Jump, Tipping Backward with One-half Twist in Open Position, Tuck Turning Over Forward, Kickout to Feet. (4)
15. Jump, Turning Over Backward in Layout Position, One-half Twist Continuing to Turn Forward to Front Drop Landing, Bounce to Feet. (4)
16. Jump, Turning Over Backward in Layout Position, One-half Twist, Turn Forward and Duck Under to Back Drop Landing Position, Bounce to Feet. (4)
17. Jump, Turning Over Once Backward in Layout Position with One-half Twist, Tuck Turning Over Forward Once to Feet (Half Twisting Double). (5)
18. Jump, Turning Over Backward in a Layout Position with a Full Twist to the Feet. (4)
19. Jump, Turning Over Backward One and One-quarter in a Layout Position with a Full Twist to Sit, Bounce to Feet. (4)
20. Jump, Turning Over Backward One and One-quarter in a Layout Position with a Full Twist to a Back Drop Landing Position, Bounce to Feet. (4)
21. Jump, Turning Over Backward Once in a Layout Position with a One and One-half Twist to the Feet. (5)
22. Jump, Turning Over Backward One and One-quarter in a Layout Position, with a One and One-half Twist to Front Drop Landing. (5)
23. Jump, Turning Over Backward in a Layout Position with a Double Twist to the Feet. (5)
24. Jump, Turning Over Backward in a Layout Position with a Full Twist, Tuck Turn Over Backward Again, Kick Out to Feet (Full Twisting Back Double). (5)

CHAPTER XII

Supplementary Programs

Supplementary programs which may be organized and supervised by the Department of Gymnastics and Tumbling are as follows: Sub-Squad; Injured Cadets; Individual Development.

SUB-SQUAD

The Mass Exercise department at the Pre-Flight Schools tests cadets upon arrival. The tests include push-ups, chins, vertical jump (jump and reach) and speed agility. The standards at Pre-Flight Schools are: Push-ups, 20; Chins, 6; Vertical Jump, 16 inches; Speed Agility, 33 seconds. A Physical Fitness Test (Pack Test) measuring fitness for strenuous activity is also given. The cadet, carrying a pack weighing one-third of his body weight, steps up and down on a platform sixteen inches high for five minutes. Each cadet is subjected to a final test identical to that given at entrance, in order to record improvement.

Cadets who do not meet the entrance standards usually lack upper body strength in general. By means of daily sub-squad activities, work can be prescribed to meet the deficiency. Chart II shows that an inferior cadet may be brought up to the standards of the base within a five-week period.

The following plan for Sub-Squad has been evolved at a Pre-Flight School.

First: Hold sub-squad practice twice each week for one hour for battalions in the first to fifth weeks of their twelve-week program.

Second: Beginning with the sixth week for each battalion, sub-squad cadets report for concentrated work during the regular calisthenics period of twenty five minutes duration. Such a plan should obtain effective results.

ADMINISTRATIVE FORMS

Forms which may be used effectively in the administration of the sub-squad appear below. (Charts II, III, IV, V)

NAME	COMPANY AND PLATOON	16	20	24	28			DATE PASSED	CHIN	PUSH UPS
Joe Gish*	H-3	√						11/1 11/16	6	20
D. J. Doe (P)	G-2	√√								
C. L. Smith (C)	I-1									
W. T. Dore*										

Code: *—Weak in both. C—Chins only. P—Push ups Only. √—Present at start of class. √√—Present both times. Blank space—Absent.

CHART I

This is used at one of the pre-flight schools for mustering and checking chins and dips passed by cadets in the sub squad.

GYMNASTICS AND TUMBLING

Cadet	Test	Chins	Push-ups	Vertical Jump	Dips Parallels	Rope Climb without Legs	Leg Lifts and Sit-ups	Hold Legs in "V" Position (2 min.)	Extension Presses (Weights)
THF	Initial	3 (O)	4	16	0	0	15/15	30 s.	15
	2nd Wk.	6 (O), 7 (R)	12	18½	1	0	20/20	50 m.	20
	3rd Wk.	7 (R)	10	18	2	7	25/25	1 m.	25
	4th Wk.	6 (O)	17	18¾	1	15	40/40	1 m., 27 s.	22
	5th Wk.	7	20	20	6	11	45/45	1 m., 35 s.	21
WJP	Initial	2 (O)	11	15½	0	0	25/15	1 m.	14
	2nd Wk.	3 (O), 5 (R)	24	17½	0	0	25/20	2 m.	18
	3rd Wk.	7 (R)	21	17½	6	7	30/30	2 m.	20
	4th Wk.	3 (O)	22	18	6	12	40/40	2 m., 15 s.	22
	5th Wk.	7	25	19½	11	12	40/40	1 m., 30 s.	22
LRR	Initial	2	13	15	3	0	15/15	30 s.	11
	2nd Wk.	3 (O), 6 (R)	17	17¼	7	0	20/20	50 s.	15
	3rd Wk.	6	17	17½	7	12	25/25	1 m., 45 s.	15
	4th Wk.	6	20	18	9	15	40/40	2 m., 27 s.	17
	5th Wk.	7	21	19½	10	12	75/150	2 m., 51 s.	15
WEI	Initial	1	15	13½	0	0	15/15	50 s.	15
	2nd Wk.	4	21	16¾	6	0	20/5	2 m., 5 s.	19
	3rd Wk.	5	25	19	8	0	30/0	2 m., 51 s.	18
	4th Wk.	5	25	20¼	12	5		4 m.	18
	5th Wk.	6	25		14	8	40/20	3 m., 15 s.	19
TED	Initial	0	15	15½	1	0	20/20	40 s.	15
	2nd Wk.	4	20	17¾	5	0	40/40	1 m., 15 s.	19
	3rd Wk.	5	21	20	8	7	45/40	1 m., 20 s.	18
	4th Wk.	6	21	19½	10	8	40/45	1 m., 35 s.	19
	5th Wk.	6	22		10	10	40/40	2 m.	19
EJC	Initial	0	5	15	0	0	15/15	46 s.	—
	2nd Wk.	1 (O), 4 (R)	11	17¼	0	0	20/20	52 s.	—
	3rd Wk.	4 (R)	10	17½	0	6	25/25	1 m.	9
	4th Wk.	5 (O), 6 (R)	18	16¾	2	9	40/40	1 m., 5 s.	13
	5th Wk.	5	18	18½	2	9	40/40	1 m., 10 s.	13
HLJ	Initial	3	15	15	0	0	15/10	1 m.	8
	2nd Wk.	5	19	15	0	8	22/10	1 m., 15 s.	10
	3rd Wk.	7	21	14½	1	10	25/25	1 m., 30 s.	10
	4th Wk.	8	22	15	4	11½	30/30	2 m.	14
	5th Wk.								
RGS	Initial	0	4	16	0	0	15/15	30 s.	10
	2nd Wk.	2	15	18	1	0	20/20	50 s.	13
	3rd Wk.	3 (R)	13	18	3	0	25/25	1 m.	15
	4th Wk.	4	20	18½	6		40/40	1 m., 50 s.	17
	5th Wk.	5	20	19¼	7	0	50/50	2 m.	15

CHART II. DEVELOPMENTAL GYMNASTICS SUB-SQUAD IMPROVEMENT CHART

Abbreviations used: O—Ordinary, R—Reverse, m.—Minutes, s.—Seconds.

CADET

			Rope Climb	$\frac{1}{2}$
			Push Up Low Bars	15
			Back Dips	35
			Wrist Twists	4
			Chins	4
			Push-ups (Dips) Parallel Bars	6
			Hang Walk Parallel Bars	2
			Fence Vault	4 ft.
			Wrist Walk Parallel Bars	3
			Grasshopper Walk Parallel Bars	1
			Walk Balance Beam Eyes Closed	$\frac{1}{2}$
			Arm Extension	25
			Arm Curls 35# Weight	20
			Inverted Hang	1

CHART III. TESTS FOR SQUAD B

NOTE: These tests are designed to increase upper body strength. The sub-squad is divided into *two groups*—the new and slow and the advanced. In order to move out of the new and slow group, a cadet must pass the above tests.

CADET

			Hip Circle (Belly Grind)	2
			Chins	5
			Push-ups (Floor)	20
			Push-ups (Low Bars)	20
			Vertical Jump	18"
			Back Dips (Low Bars)	20
			Hang Walk Leg $\frac{1}{2}$ Lever	1
			Grasshopper Walk (Jump)	1
			Vault over Both Bars	
			Dips	8
			Inverted Hang	3
			One Arm Chin (Graspwrist)	
			Forward, Backward Rolls, Parallel Bars	
			Chins, Legs $\frac{1}{2}$ Lever	3
			V Position	2 min.
			Rope Climb	1
			Leg Lifts and Sit-ups	40
			Squat Balance	10 sec.
			Skip over Stick (F & B)	3
			Skin the Cat (2)	3
			Straight Arm Lift (Wts.)	1

CHART IV. TESTS FOR SUB-SQUAD A

PERSONAL RECORD OF

CADET _____ CO. _____ PLAT. _____

Gymnastics and Tumbling Department

Purpose: Break previous record. Presents a record of gradual improvement in strength (upper torso).
 Checking: Three or more events must be attempted in succession.

	EVENT	EFFORT												PROMOTED TO:	
		1	2	3	4	5	6	7	8	9	10	11	12		
Mon.	Rope Climb														
	Push-ups (L bar)														
	G. Walk														
Tue.	Wrist Twist														
	Fence Vault														
	Chins (Reverse)														
Wed.	Chins (Ordinary)														
	Wide Arm Back of Neck														
	Dips on P Bars														
Thurs.	Arm Curls														
	Arm Extension														
	Leg Lift, Sit-ups														
Fri.	Push-ups (Floor)														
	Hip Circles (Belly Grind)														
	Position														

—Three tests given to each cadet daily. 30 minutes.
 —Squad A—Squad B—work on squad tests 30 minutes.
 —Abdominal work given to all cadets, 30 minutes.

Cadet _____ Co. _____ Pl. _____

CHART V. SUB-SQUAD STRENGTH IMPROVEMENT SCALE
 PERSONAL RECORD OF CADET

SUB-SQUAD ACTIVITIES

Horizontal Bar*

Ordinary grasp; jump to bent arm hang; lower slowly.
 Cross hang; mixed grip; chin up; raise knees upward.
 Jump to bent arm hang; ordinary grip; raise knees alternately.
 Reverse grasp; chin.
 Cross hang; mixed grip; jump to knee hang.
 Ordinary grasp; bent arm hang; travel sideways.
 Ordinary grasp; chin; raise knees to inverted squat hang.
 Cross knee hang; mixed grip travel forward and backward.
 Jump to hand knee hang; left (right) between hands; chin up five times.
 Cross knee hang; mixed grip; chin up five times.
 Cross hang, bent arms; raise knees; travel forward.
 Ordinary grasp; inverted squat hang; lower slowly bending arms to chin;
 extend arms slowly to straight hang.
 From straight hang raise both knees to a double knee hang; return legs to
 straight hang; bending arms to chin extend arms slowly.
 Swinging in bent arm position; reverse grip.
 Hand knee hang double; lower slowly to hang rearways.
 Hang; release one hand and grasp wrist of other; alternate several times.
 Knee hang left; knee swing up; lower backward.
 Pull up to upward arm hang; left then right; lower to bent arm hang; extend
 arms to straight hang.
 Knee circles forward with reverse grasp; backward with ordinary grasp.
 Hip swing up.
 Hip circle.

Side Horse**

Jump to front support; left leg over to side stride seat; swing right leg over
 and dismount to cross stand left sideways.
 Repeat above with right leg.
 Jump to front support; left leg over; right leg over to support rearways; jump
 dismount.
 Jump to front support; cut left leg over; swing right leg over with a half turn
 left to a cross stride seat on neck. Grasp pommel and front vault dismount.

* See pp. 59, 66, 69, 97, 299, 315, 319, 329, 393, 447.

** See pp. 60, 64, 65, 67, 301, 318, 319, 331, 446, 453.

Repeat to croup side.

Jump to front support; left over; right over; left back; right back; jump to deck and flank vault left.

Run and squat left leg through to cross side seat; support; right over, left back, right back; jump to deck flank vault right.

Run, squat both legs through to support rearways; left back; swing right leg over with half turn to seat on croup. Grasp pommel and push off end.

Jump to front support; squat left through to a cross stride seat. Change left and right simultaneously; repeat several times; return to stand and rear vault left.

Jump to front support; with preparatory swing right flank both legs left to support rearways; cut right back; left back to front support; jump to stand and rear vault right.

Jump to front support; feint left; feint right and continue right leg cutting left hand off and dismount to a cross stand left sideways.

Jump to support rearways cutting right leg under left hand; swing left leg under left hand with half turn to cross stride seat on croup; feint right and dismount to cross stand right sideways.

Same to opposite side.

Same as above and in place of feint execute scissors backwards twice; feint right and dismount as above.

Same other side.

Jump to a preparatory swing right; flank both legs under left hand; flank both legs under right hand; feint (single) left and dismount to cross stand left sideways.

Same to opposite side.

Jump right leg under right hand; left under left hand right back; left back; feint right and single rear to cross stride seat in saddle; half turn right dismount.

Same left.

Single leg swing; double leg swing; feint and single rear vault.

Stall Bars*

Stand frontways on lowest rung; grasp hip high; bend knees deep and straighten; repeat ten times.

Hang frontways; arch head and legs backward; repeat.

Hang rearways; raise legs (straight) alternately.

Jump to bent arm hang from stand frontways; repeat.

Stand frontways on lowest rung; grasp hip high. Bend and straighten hips. Repeat.

Hang rearways; alternately raise knees; straighten and lower.

Hang stand right sideways; chin ten times; change to left sideways and chin ten times.

Hang rearways; raise both knees; straighten and lower; repeat.

Hang frontways; keep grip; walk up close to hands as possible; walk down.

Stand frontways; place left foot on fifth rung; hook toe; knees straight neck rest; forward and backward trunk bending; keep leg straight.

Variation: On forward trunk bending grasp ankle and pull down.

* See p. 335.

Execute with other leg.

Stand right sideways; hook toe with straight leg on fifth rung. Execute a side scale; left hand extended down side of left leg; right hand extended over head along ear. Straighten trunk and grasp stall bars with right hand swinging left hand sideward upward over head; repeat; several times to both sides.

Stand rearways; hook right toe; straight leg in fifth rung; execute a front scale; arching back; bend trunk forward grasping left ankle and spring trunk five times.

Same with other leg.

Hang rearways; raise both legs forward, lower and repeat. (Straight legs)

Walk upwards half way; grasp hip high; bend left knee deep and lower right leg; return and repeat right.

Support lying position frontways on floor; feet placed on third rung dipping. Sit on deck; hook toes under a rung; trunk raising and lowering in neck rest position.

Rings*

Jump to bent arm hang; raise both knees; five to ten times.

Step backward with rings as far as possible; jump and raise knees as high as possible (arms straight) swing forward and backward; drop off on backward swing.

Jump to inverted squat hang; feet against the rings. Return to bent arm hang; extend arms slowly to straight hang; repeat three times.

Upper arm hang; grasp rings in front; swing forward and backward several times; assistant stop swing if rings are high.

Step backward with rings as far as possible; jump to bent arm hang; swing forward and backward (try not to touch floor).

Knee hang left over left arm; chin five times. Return to straight hang; knee hang right over right arm; chin five times; return to bent arm hang; extend arms slowly to straight hang.

Double knee hang left; return to inverted squat hang; double knee hang right; return to inverted squat hang; lower legs to a bent arm hang; extend arms slowly.

Upper arm hang; long swings; with knees raised forward.

From hang; feet on deck; circle through hang lying position frontways; sideways; rearways; several times.

Jump to inverted balance hang; cut off left; to bent arm hang.

Same as above cut right and left; after each cut come to bent arm hang returning to inverted balance hang before cutting off to other side.

Upper arm hang; swing long forward and backward; executing a half turn on the end of each swing.

Nest hang; return to bent arm hang; extend arms slowly to straight hang.

Turn over backward to stand; dislocate to stand. Use mat roll for safety.

Step backward with rings as far as possible; jump to bent arm hang, knees up; swing forward and backward.

Jump to inverted squat hang; extend to inverted hang, feet against ropes; return to inverted squat hang; lower to bent arm hang.

* See pp. 301, 317, 319, 335.

Step backward with rings as far as possible; jump to bent arm hang and at end of forward swing straighten arms and immediately chin with the backward swing.

Nest hang straighten one leg backward; alternate; return to bent arm hang.

Jump to inverted hang; lower to hang rearways; return to inverted squat hang; return to bent arm hang.

Straight arm swing with turns on end of swing.

Parallel Bars*

Jump to hang lying position frontways; chin up ten times.

Jump to cross hang lying frontways; feet placed on bars; chin ten times.

Jump to knee hang double on far bar; chin ten times.

From cross stand; frontways; knee hang left; return to bent arm hang; knee hang right; return to bent arm position; raise legs to inverted squat; hang lower rearways to stand; return.

From cross stand rearways; turn over backward to stand; repeat and return to stand.

From cross stand rearways; turn over backward to stand; return to knee hang; return to stand.

High Parallel Bars

From cross stand frontways; jump to knee hang over both bars; push to straddle seat in front of hands. Turn to side straddle seat; under grip leg swing; dismount.

Jump to knee hang over left bar; push to outer cross seat; swing to cross seat opposite; jump off.

From cross stand rearways; turn over backwards straddling legs; push up to straddle seat in rear of hands; change to outer cross seat; jump.

Support (lower bars to minimum height): Cross support; walk to end of bars—Cross support; hop to end of bars—Cross support figures; straddle seats; cross riding seats; dismounts, vaults.

Cargo Net**

Up the cargo net and down the ropes. (See plate 480.)

Ropes**

Medicine Ball Activities†

Medicine Ball activities are well suited to the needs of the sub-squad, of injured cadets, and the individual development room.

Throwing and Pushing.—From toes: extend arms; bend at waist; throw or push from toes; shoulder high: flex arms; extend arms; push forward; behind head: flex arms behind head; extend arms; throw ball forward!

Variations.—Knees, waist, chin and over the head height.

* See pp. 59, 61, 63, 68, 69, 300, 316, 319, 332, 392.

** See Chapter IX.

† See pp. 276, 336.

- Throw for Height*—Forward: back straight; knees bent; raise on toes; backward over head: knees bent; raise on toes; extend arms over head!
- Throw for Distance*.—Forward, backward over head, sideward: one arm, both arms; sideward with a turn: one arm, both arms.
- Throw Backward Through Straddle Legs*.—As you catch the ball, jump and turn; bend and throw between legs; jump again to starting position!
- Shot Put Forward*.—Standing, deep knee bend, kneeling, sitting.
- Rise on Toes and Throw*.—From chest, from right shoulder, from left shoulder, from behind head, from right side arms extended, from left side arms extended.
- Circle in Front of Body*.—Start from over head circle down right side; circle up left side and throw from over head.
- Charge Forward*.—Throw from overhead: starting position; charge forward with left (right) foot and throw forward; throw from toe: starting position; charge forward with left (right) foot, bend forward and throw from toes!
- Variations*.—Charge forward with left (right) foot; throw from left (right) shoulder; charge forward with left (right) foot; twist and throw from right (left) shoulder.
- Leg Extended to Rear, Flex Other at Knee*.—Extend left (right) leg to rear; flex right (left) leg at knee; arms flex at chest; extend arms and push ball forward!
- Variations*.—Throw from left (right) shoulder; throw from overhead; throw from left (right) toe.
- Step Forward with Left (Right) Foot*.—Drag right (left) foot. Throw from right (left) side (bowling step).
- Knees Fully Bent, Throw to Partner Standing*.—Throw from chest: knees fully bent; back straight; arms flex; knees fully bent; back straight; extend arms forward; throw from behind the head: knees fully bent; back straight; arms flex behind head; knees fully bent; back straight; extend arms overhead and throw!
- Variations*.—Throw from left (right) shoulder; arms extended down left (right) side and throw.
- From Seat on Floor Push Ball with Feet*.—Bring knees into chest; feet on ball; extend legs; push ball to partner!
- From Seat on Floor*.—Throw from right and left shoulder; throw from chest; throw from behind head; throw from arms extended vertical.
- Lie Prone, Arms Extended*.—Extend arms; raise legs; raise the ball!
- Variations*.—Raise ball and legs together; raise ball and legs together and hold for five seconds; raise ball and legs together and push ball to partner.
- Lie Supine*.—Ball on feet; extend arms over head; roll back; toes on ball; raise and throw; spread legs; extend arms overhead; roll back; spread legs; throw between legs before coming up!
- Seat on Floor, Spread Legs*.—Reach out and touch deck with ball; touch left toe, right toe; push from chest!
- Ball on Knees*.—Roll back ball on abdomen, come up and throw!
- Lie on Back*.—Kick ball to partner, standing.
- Variations*.—Form a circle, lie on deck, feet upward. Keep ball in air.

Group Medicine Ball Drills**Circle Position Drills*

Use a 15 medicine ball for a group of twenty men. Pass the ball rapidly from man to man.

Variations:

Use two balls. Object is to pass balls with such rapidity that one man is caught with all the balls.

Use three balls.

Instructor call *Reverse Direction*.

All men stand with upraised arms. Pass the ball from man to man. Keep the lower extremities facing to the front. Rotate the upper part of the body.

All men bend forward at the hips, hands almost touching the deck. Pass the ball rapidly from man to man at all times just keeping the ball clear of the deck.

Variations:

Call reverse of directions.

Men stand shoulder to shoulder. With both hands push the ball into the abdomen. (Caution men to tense belly muscles.)

Variations:

Call reverse of directions.

Men lie down on the deck, feet pointing toward center and close together. Lift the feet. Raise the arms. Hand protect the face and are used to keep the ball in center of circle. Use three or four balls, and keep throwing them in as they are kicked out. This is a juggling exercise and not a kicking contest.

Two Lines Position Drills

Men sit facing each other in pairs, feet about three feet apart. One grasps ball, lies back, and throws ball from sitting position.

One Line Position Drills

Men take supine position. Place medicine ball between feet. Arms are extended along side, palms downward. Lift medicine ball.

Men take supine position, knees to chest, feet close together in kicking position. Leaders toss ball onto feet. Object is to kick ball over his head.

Variations:

Use two lines with one line alternating as to throwing or kicking.

*Relays** (Two Lines Position Drills)*

Form two columns, Number 1 man holding medicine ball, legs apart. The ball is rolled on the deck between the legs. The last man gets the ball and runs with same to head of line and repeats. This is continued until Number 1 man is back in original position.

Variations:

Men take same position as above, ball is passed between legs, last man runs with same to head of line and passes ball down the line over the heads.

The last man then runs to head of line and passes ball between legs, alternating between legs and over head.

* See pp. 274, 336.

** See Chapter XIV.

Throwing Position

Feet apart, flex at waist, grasp ball. On deck and with combined lift with upper body, push with legs and throw with arms. Throw ball over head for distance or height. Distance, 50 feet; height, 30 feet.

*Medicine Ball Games**

Sub-squad interest may be stimulated by medicine ball games.

Medicine Ball Relays

(See Chapter XIV.)

Straddle and Turn. (Work in threes.)

A throws ball to B in the center. B throws ball between his legs to C and turns in time to catch it from C. Continue until men want to change places.

Medicine Ball Bowling

The medicine ball is thrown out and rolled along the deck at nine Indian clubs which represent the pins.

Medicine Ball Wrestling

Two teams form a circle; two opponents in circle, representing teams, try to wrestle ball away from each other. The side which succeeds the greatest number of times wins.

Medicine Ball Basketball

The game of basketball is adapted depending upon the number of men on the teams.

Medicine Ball Volleyball

The game of volleyball can be modified by catching instead of hitting the ball.

The above games are presented to show how medicine ball variations can enhance the program.

INJURED CADETS

Under the supervision of the Department of Gymnastics and Tumbling, injured cadets may participate in special prescribed activities until they can resume regular activities in the sports program and the instruction class. Good physical condition may be maintained in spite of handicap, and no time is lost in training.

The objectives of these special activities are:

1. To maintain and improve general condition and strength already acquired.
2. The increase and equalization of flexibility to the injured joint or member of the body through exercise.
3. The strengthening and readjustment of muscle control.
4. To discourage "goldbricking" on a weak excuse to avoid the instructional and Sports Program.

ADMINISTRATIVE FORMS

Method of Organization

The various pieces of equipment may be arranged in a series of stations. The cadets may then be divided into small groups and proceed from station to station.

Forms which may be used effectively for the injured cadet activities are shown on the following pages. (pp. 278-279)

* See pp. 274, 336.

CADET _____
 TYPE OF INJURY _____
 LENGTH OF WORKOUT _____ TIME TO LEAVE _____

LEG INJURY		ARM AND HAND INJURY			
	Min.	Max.		Min.	Max.
Dips on parallel bars	3	_____	Chest Weights routine	10 min.	_____
Chins (ordinary)	5	_____	Bicycle	100	_____
Chins (reverse)	5	_____	Arm Curls (10-20 lb. barbells)	15	_____
Push-ups (low parallel bars)	10	_____	Sit-ups	50	_____
Wrist Twist	4	_____	Leg Lifts (medicine ball)	10	_____
Back Dips	20	_____	Leg Squats (50-75 lb. barbells)	25	_____
Rope Climb (hands and feet)	10 ft.	_____	Sidebending (50-75 lb. barbells)	15	_____
Arm Curls (10-20 lb. barbells)	10	_____	Sit-ups (inclined board)	20	_____
Arm extension (10-15 lb. barbells)	10	_____	_____	_____	_____
Sit-ups (inclined board)	20	_____	_____	_____	_____
Support Walk push-ups	1	_____	_____	_____	_____
Grasshopper Walk (push-ups)	1	_____	_____	_____	_____
Leg Lifts, sit-ups	20/20	_____	_____	_____	_____
Arm Curls (chest weights)	_____	_____	_____	_____	_____

This cadet has satisfactorily completed the workout.

 Officer in charge

CHART VIII. REPORT OF GYMNASTIC WORKOUT FOR INJURED CADETS
 DURING SPORTS PROGRAM

ACTIVITIES FOR CADETS WITH LEG INJURIES

*Development of Arms, Chest and Back Muscles**

- Rope Climbing
- Chinning. (Chin as many as possible.)
- Push-ups or Dips on Parallel Bars.
- Medicine Ball Activities.
- Weight Lifting:
 - Arm Curls. Press-ups. Straight Arm Lift. One Arm Lift. Wrist Twist.
- Parallel Bars:
 - Support Position; arms straight; walk across. Hop Across. Grasshopper Walk.
 - Grasshopper Hops.
 - Travel across three Parallel Bars end to end using the above as means of travel. End up with as many dips as possible.
 - Dragon Crawl on top of three parallel bars.
 - Pull over to Inverted Hang on ends of bars.

* See also activities for Sub-Squad on pages 267-277.

Pulley Weights:*

For upper back muscles. Face machine; work in cycles of three movements; arms straight; hands downward, sideward and upward. Good load for average cadet, 40 cycles.

Development of Neck and Upper Back Muscles

Head Balances.

Wrestlers' Bridge.

Work against resistance of hands, sides of head, back of head and under chin.

Development of Balance

Squat Head Balance.

Squat Balance.

Elbow Balance.

Forearm Balance.

Head Balance.

Hand Balance.

Hop on One Foot.

Development of Abdominal Muscles

Leg Lifts and Sit-ups (35 to 40 each).

"V" Position (two minutes).

Half Lever on Balance Beam; Parallel Bars; and Deck.

Stall Bar exercises:

Span Bending.

Angle Support Stretch; Arms Bend Stretch.

Back toward bars; grasp bars with hands; travel down bars keeping knees straight.

Hanging on Stall Bars with back to bars do leg raises; bend knees; knees straight; one leg, and alternate both.

Lie supine; hook toes under bars; raise to sitting position; grasp bars; return to supine position.

Same as above except toes under fourth or fifth bar.

Flutter Kick.

Leg Lowering Sideways.

Inclined Board.

Rowing Machine.

Agility

Punch Light Bag.

Punch Heavy Bag.

Ride Bicycle (one leg).

If Injuries Permit

Rope Climb and Vertical Pipe (use hands and feet).

* See Pulley Weights on pages 284-285.

Tiger Stretch.
Skip Rope (one leg).
Leg Lifts with Medicine Ball.
Ride Bicycle.

ACTIVITIES FOR CADETS WITH ARM AND CHEST INJURIES

Development of Abdominal Muscles

Leg Lifts.
Flutter Kick; prone or supine.
Sit-ups.
Crossing Legs, 45 degrees.
Legs Raised; lower to left and right.
Arch Up; from prone position; hips on deck.

Development of Leg Muscles

Ride Bicycle Around Track.
Run Around Track.
Walk Around Track.
Run Up and Down Ladder (Stairs) in Field House.
Squat Jumps.

Light Arm Work

Bar Bell Routine (one hand).
Pulley Weights (light).

Agility

Rope Skipping.
Bicycle Riding.

Development of Foot and Lower Leg Muscles (Especially for cadets with weak feet and low arches)

Use Toes to Tie Knots in Skipping Rope using three-quarter inch sash cord.
Use Toes to Pick Up Marbles and Place in Jar or Can on Opposite Side of Other Leg. Also, Shoot Baskets with Marbles and Can.
Creeper. Sit with back to wall; bring heels to buttocks; plant or flex toes; raise heels and pull legs out in successive movements. When legs are straight or nearly so reverse process back with heels to buttocks.
Walk in Sandbox; Plant or Flex Toes; Grasp with Toes; Sandbox 3' x 6' x 12" deep.
Sit; Do Alternate Knee Bends Keeping Both Heels off the Floor and Feet in a Position of Abduction and also Dorsi-flexed.

If Injuries Permit

One Hand Chin. (Other hand grip wrist.)
One Hand Push-up.
Dips on Parallel Bars.

Wrist Twist.
 Rope Climb.
 Hanging Ladder.
 Bag Punching.
 Tiger Stretch.

After the injured cadets have spent a reasonable amount of time (30 to 40 minutes), doing the suggested exercises for leg injury or arm and hand injury at their own speed they are then given another 20 to 30 minute work out. The work out depends upon the number of cadets present and the prevailing type of injury, and include:

Free Hand (Calisthenics).
 Climbing Poles.
 Horizontal Ladder.
 Pulley Weights.
 Medicine Ball.*
 Stall Bars.**
 Exercises with Partners.
 Self Testing Doubles.
 Exercises on Benches
 Follow the Leader.

FREE EXERCISES

Standing

Warm Up Running in Place

Side Twister.—Twist left (right)—Hands on hips—Bend left (right)!

Bent Stretcher.—Hands overhead—Bend left (right)!

Go High, Go Low.—Arms extended overhead—Raise on toes—Bend and touch toes—Knees and legs straight!

Weather Vane.—Arms shoulder high sideways, twisting left, right!

High Stepper.—Raise left knee and pull into chest—Right—Alternate.

Charger.—Charge forward left (right) foot, arms sideways—Bend forward and touch toes!

Jumping Jack.—Jumping feet spread, arms overhead—Jumping feet together, arms at side!

Toe Tapper.—Feet spread; arms shoulder high sideways—Bend—Left hand touch right toe!

Side Stepper.—Lunge sideways left, right; alternate—Hands on hips or arms sideways shoulder high!

Lie on Deck (Belly Down)

Belly Rocker.—Hand on hip or back—Rock back and forth on belly!

"Ugh."—Extend arms to front overhead—Raise arms, head, legs off deck—

* See Medicine Ball Activities on Pages 276 and 277.

** See Stall Bars Activities on Pages 272 and 273.

Lower!

"Push 'Em Up Tony."—Push up!

Sit on Deck

Bend Low.—Hands behind head—Feet forward and together—Bend forward—Touch knees with one or both elbows!

Airplane.—Feet spread, arms sideways, shoulder high—Left hand touch right toe!

Double Up.—Feet together in front—Bring knee into chest—Right, alternate; both together!

Lie on Deck (Back)

Leg Lifter.—Lie on back—Arms at side—Raise legs up and lower!

Easy Does It.—Lie on back—Arms overhead—Raise up and touch toes with hands!

Joy Ride.—Inverted Bicycle.

CLIMBING POLES

Climbing Poles are used to strengthen the upper body, arm, shoulder, back and abdominal muscles. Some of the activities used (See pp. 182, 183) are the following:

One Pole Climb

Inverted Climb

Two Pole Climb (Knees Inside and Knees Outside)

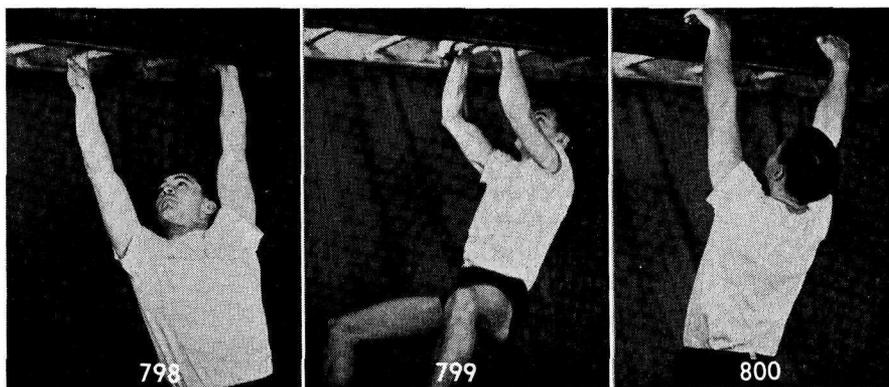
Hang on Two Pipes

(1) Half Lever

(2) Inverted Hang

(3) Skin the Cat

HORIZONTAL LADDER

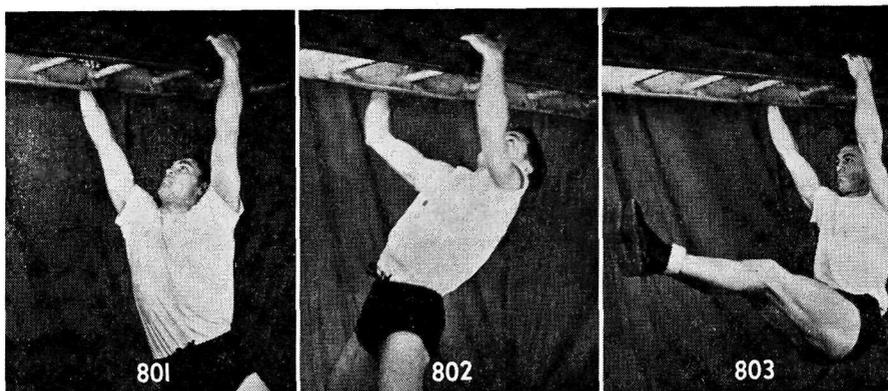


798—*Hang Travel.*—Hand over hand on rungs!

799—*Hang Travel Up.*—Double jumps on rungs!

Variations.—Increase the number of rungs between grasps.

800—*Hang Travel Sideward.*—Walk sideward on rail!



801—*Hand over Hand on Both Rails!*

802—*Double Jumping on Both Rails!*

Variations.—Forward and backward.

803—*Hand over Hand, Legs in Half Lever!*

Variations.—This same type of work may be done on the inclined ladder!

PULLEY WEIGHTS (Sample Lesson)

Facing Machine

Arms Shoulder High Extended Frontways

Arms sideways, shoulder high.

Bring arms frontways and down to hip. (2 counts)

Twist left; return.

Twist right; return.

Both hands together. (2 counts)

Left arm up; right down; alternate. (2 counts)

Lunge sideways with left foot; arms sideways, shoulder high. Return. (2 counts)

Lunge right. Return. (2 counts)

Alternate left and right. (4 counts)

Feet spread.

Bend; touch left toe with both hands. Return.

Bend; touch right toe with both hands. Return. (4 counts)

Step backward with left foot. Bend forward, both hands touch right toe. Return (2 counts)

Step backward with right foot; bend forward, both hands touch left toe. Return. (2 counts)

Alternate left and right. (4 counts)

Jump and spread feet; hands down between legs.

Jump upright; arms sideways shoulder high. (2 counts)

Kick left leg forward; hands to hips. Return. (2 counts)

Kick right leg forward; hands to hips. Return. (2 counts)

Alternate left; right. (4 counts)

Arms Shoulder High Extended Sideways

Twist left. Return. Twist right. Return. (4 counts)

Back to Machine*Arms Shoulder High Extended Frontways*

Left arm up, right arm down. Alternate. (2 counts)

Hands on Chest

Lunge sideways with left foot, arms sideways, shoulder high. Return. (2 counts)

Lunge sideways with right foot, arms sideways, shoulder high. Return. (2 counts)

Alternate, left and right. (4 counts)

Hands Over Head

Bend forward; touch toes. Return. (2 counts)

Hands at Hips; Palms Up

Left hand forward; right hand moves forward as left returns (uppercut motion). (2 counts)

Exchange feet. Left hand and left foot forward. Right foot and right hand move forward as the left return (shadow boxing motion). (2 counts)

Arms Shoulder High Extended Sideways

Twist left; return. Twist right; return. (4 counts)

Standing Sideways to Machine (Both handles in one hand)*Arms Sideways, Shoulder High*

Pull frontways. Arms extended. Return. (2 counts)

Spread Feet

Bend. Bring hands down in front to feet and up around in front of face (down and around). (4 counts)

Arms Sideways, Shoulder High, Opposite Hand on Hip

Bend sideways; bring handles over head, upper arm against ear. Return. (2 counts)

Sit on Deck, Facing Machine*Arms in Front Shoulder High, Both Hands Together*

Twist left. Return. Twist right. Return. (4 counts)

Arms in Front

Flex and bring left knee into chest, hands down to hip. Return. (2 counts)

Flex and bring right knee into chest, hands down to hip. Return. (2 counts)

Alternate, left; right. (4 counts)

Lie on Back*Arms Extended Upward*

Raise left leg. Arms downward, shoulder high. Return. (2 counts)

Raise right leg, arms downward, shoulder high. Return. (2 counts)

Alternate; left, right. (4 counts)

Raise both legs together; arm downward; shoulder high. Return. (2 counts)

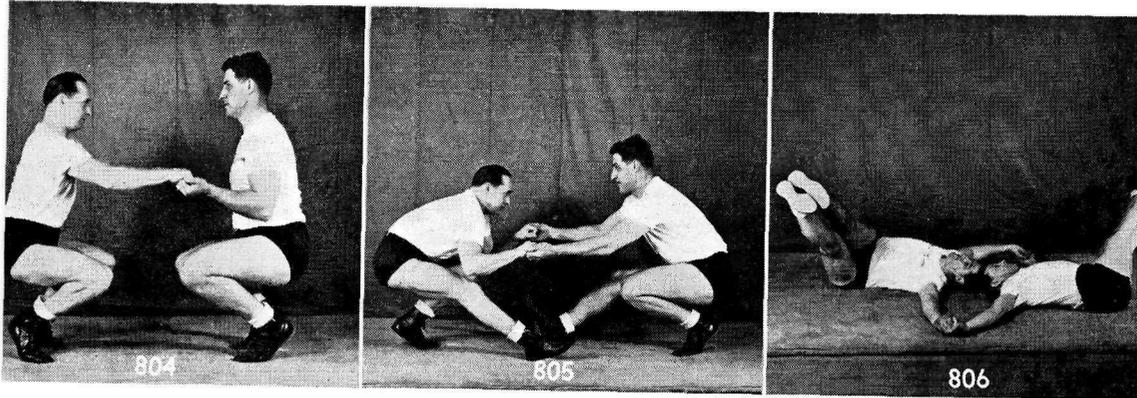
Hands Extended Over Head

Sit up and touch toes. Return. (2 counts)

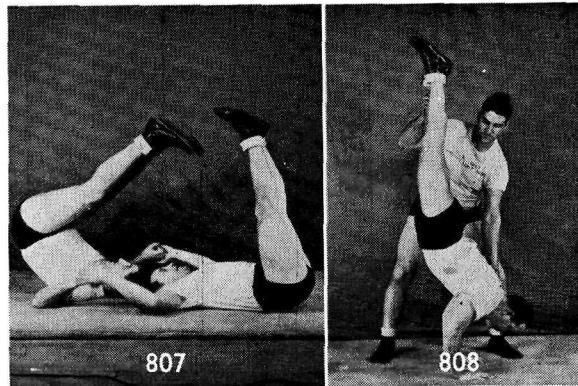
Arms Extended Upward

Spread legs; raise six inches off deck—arms downward; shoulder high. Return. (2 counts)

GYMNASTICS AND TUMBLING
EXERCISES WITH PARTNER



- 804—*Deep Knee Bends*.—Partners face and clasp hands in quick cadence. Thirty to fifty times. Effect: strength with flexibility—Backs are kept straight, pull against partner for balance!
- Alternate Knee Bends*.—From feet stride left or right—Twenty to thirty times. Effect: strength—Keep forward leg straight and pointed forward—Face opposite directions and clasp right hand to left hand! (Same as above), with forward leg free of the floor—fifteen to twenty times.
- 805—*Russian Step*.—Partners face holding hands, knees fully bent, do Russian step—Effect: strength—obtain support from partner!
- Leg Stride Left and Right*.—Backs on floor, head to head—Thirty to fifty times. Effect: strength—Toes pointed; legs straight!
- 806—*Legs Swinging Sideward*.—Back on floor—Hands sideward—Clasp hands. Twenty to thirty times. Effect: strength—Keep the legs perpendicular and together. Alternate swinging legs to left and right!

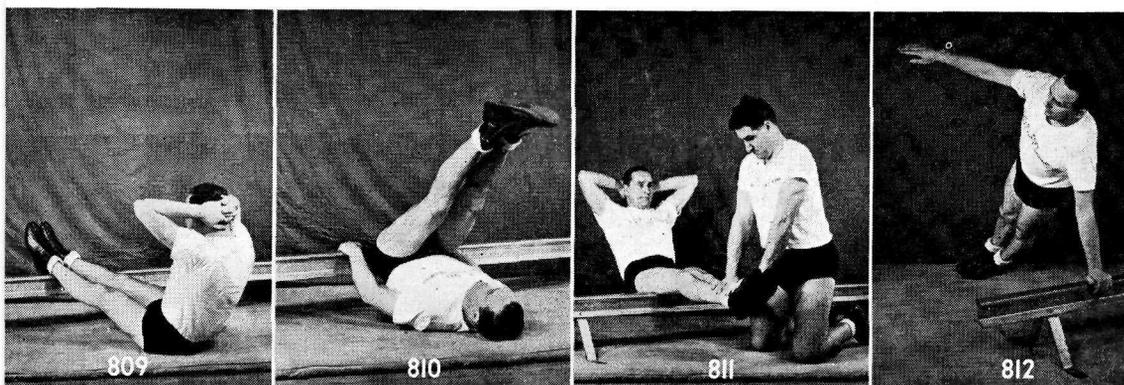


- 807—*Leg Raises*.—Back on floor, legs one-half upward raise and slowly lower to deck. Fifteen to twenty times. Effect: strength—Keep knees straight—Point toes!
- Leg Circles*.—Back on floor, both legs slightly raised—Circle legs—Twenty circles. Effect: strength—Hands on neck or at the side!
- Figure Eight with Legs*.—Same as above stunt, except make figure eight with legs!
- 808—*Hand Balance*.—Effect: strength—Partner supporting by grasping legs with right hand and left hand under shoulders—Do dips in this position!

SELF-TESTING ACTIVITIES (DOUBLES)

- Head to head, lie on back, hands under neck of partner. Lift.
- Hurdle position. Partner hold down straight leg, number of times that partner can put back on deck (trunk in line with extended leg).
- Rigid body lift (man own weight).
- Rigid body (2 men lift).
- Push-ups with man on top. The man on top can adjust the load until bottom man is able to withstand entire weight.
- Chins, lifting man to sitting position (hold on to ankles).
- Lift man of own weight above head. Bottom man lying on back, hands by head; top man standing on hands, lift man above head. One man spotting.
- Flex and extend arms with man on hands in position.

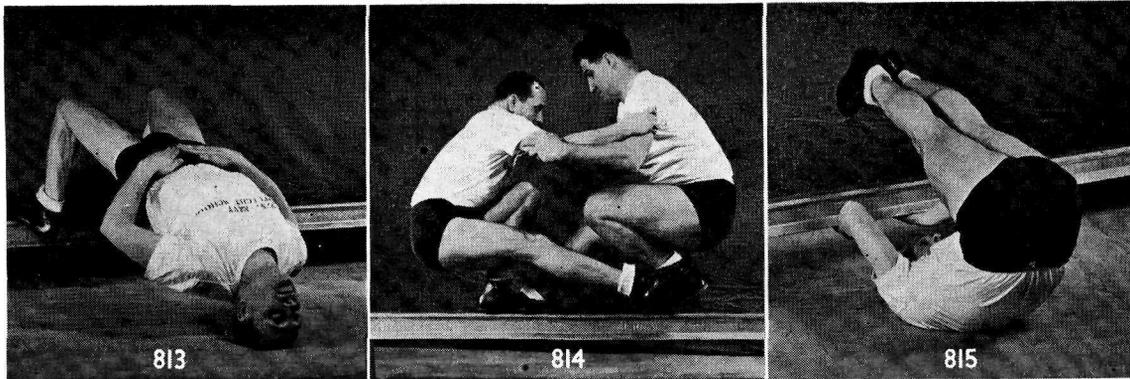
EXERCISES ON BENCHES



- 809—*Trunk Bending Forward*.—Thirty-five to fifty times—Ankles on beam, hands behind neck on deck; grasp ankles!
Hold On to Beam with Hands, Feet Outside.—Straighten legs—Feet together!
- 810—*Lie on Back*.—Grasp beam, whip legs down, come up to a sitting position on beam!
Trunk Forward Bend.—Sitting on bench or beam—Partner holds ankles down—Add arms in stretch. Do twenty to twenty-five times.
- 811—*Trunk Backward Bend*.—Lying over beam on thighs, hand on neck, trunk raise—Helper anchors ankles—Do twenty to forty times!
Push-ups with Ankles on Beam.—Both feet on beam—Hands on floor—Do twenty to fifty times! (Same as above) except one hand on top of other—Do fifteen to thirty times.
- 812—*Front to Side Support*.—Turn to side, support, keeping body rigid!
From Side Support Raise Leg and Arm.—Do twenty-five times!
Crab Position and Push-Ups.—Do five to ten times!
Bridge on Neck with Heels on Beam, Hands on Belly.

★ ★ ★

- 813—*Trunk Twisting with Stride Sitting on Beam*.
- 814—*Single Leg Bend with Partner*.—Partners grasp hands, keep knee bend with one foot!
Jumping On and Off Beam with Partner, Free.
Push Up to Shoulder While Lying on Beam, Legs Swinging Up and Over to Touch Toes on Beam.
- 815—*Leg Swinging Up to Touch Beam While Lying on Deck, Head near Beam*.
 Numerous variations of balance movements may be introduced in the form of toe marches, change of step, horizontal one-half stand, bouncing balls, balance sitting, squat sitting, and the like. This is valuable in developing coordination and poise.



"FOLLOW THE LEADER"

Follow the Leader is given at the end of the period for all who can participate. The routine is as follows:

- Run around the room.
- Travel hand over hand on the hanging ladder.
- Vault over the buck.
- Punch the heavy bags.
- Swing under the parallel bars.
- Climb the rope or vertical pipe.
- Run out and around the track (indoor).
- Up and down the ladder (steps).
- Return to room.
- One chin (ordinary, reverse, combination) on the 3 bars placed around the room.
- Travel across the hanging ladder and end with running in place.

INDIVIDUAL DEVELOPMENT ROOM

An individual development room is an asset to the program. All equipment that might be helpful in overcoming individual deficiencies or weaknesses might be kept in the room, which could also be used for the injured cadet program, thus preventing interference in regular class sessions.

Some of the inexpensive equipment which may be used in such a room is as follows, together with the part they develop:

- Arms, Neck and Chest (Upper Body Development)*
- Climbing Poles. Spaced to be used single or double. (Biceps)
- Ropes. (Biceps). Inclined, Vertical, Horizontal.
- Climbing Shelf. (Biceps)
- Chinning Bars. (Biceps)
- Peg Board. (Biceps)
- Hanging Ladder. (Biceps)
- Parallel Bars; Buck; Horse. (Triceps)
- Pulley Weights. (Chest)
- Wrist Twist. (Forearms and grip)

Old Tennis Balls. (Grip)

Rings (Latissimus Dorsi)

Stretchers. (Pectorals)

Stall Bars. (Upper body)

Adjustable Barbell. (Upper body)

Medicine Balls. (Upper body)

Abdominal

Benches, weighted Abdominal Shoes.

Rowing Machine.

Stall Bars.

Inclined Boards.

Back

Tiger Stretch.

Barbells.

Rowing Machine.

Balance

Balance Beams.

Mats. (Individual small mats can be hung up by the individual after use.)

Low Parallel Bars.

Agility

Bags. (Punching and striking.)

Rope Skipping.

Vertical Jump.

Ground Tumbling.

Legs

Stationary Bicycle.

Stall Bars.

Rope Skipping.

Other Equipment

Boxes for Magnesium and Resin.

Gear Rack.

Buck.

Medicine Ball Rack.

Wands and Rack for Same.

Office

Bulletin Boards.

Desk.

Log Books.

Locker for Records.

To summarize, the supplementary programs for injured cadets, for the sub-squad, and for individual development are but a particular means to the general end of physical training. All departments involved, such as Mass Exercise and Training, should work closely together so that the gymnastic specialists may contribute to the common end. Of a subsidiary nature, the programs are planned only with a view to the development and maintenance of strength, endurance, power, agility, balance and flexibility for temporarily incapacitated individuals, or for those lacking in upper body strength.

OFFICERS' CONDITIONING DEPARTMENT

It is recommended that wherever feasible a complete Officers' Conditioning Department be installed. This department is considered to be particularly valuable for the physical conditioning and relaxation of flyers in or returning from active duty whether they are on shipboard or stationed ashore.

A suggested Officers' Conditioning Department should include the following:

1. A fully equipped individual development room containing for example:
 - (a) Chest Weights
 - (b) Stall Bars
 - (c) Graduated Weights
 - (d) Belly Boards
 - (e) Chinning Racks
2. Steam Room
3. Hot Room
4. Shower Room
5. Massage Room
6. Ultra-Violet Lamps
7. Slumber Room
8. Lounge
9. Scales

Masseurs in many cases will be difficult to secure and it is suggested that enlisted men on the base be trained by a competent masseur for this purpose.

**Strength and Endurance
+ Effort + Hard Work
+ Guts
"He Conquers Who
Endures."**

CHAPTER XIII

Competitive Developmental Gymnastics in an Intramural Sports Program

The program outlined in the following pages represents pioneer work in physical education. It solves the problem of accommodating a large group (1) in a limited space, (2) with limited equipment, by putting the emphasis upon "all-out" effort activities, tumbling, apparatus stunts, balancing, vaulting, a Pre-Flight test (See page 346) and relays. (See Chapter XIV) Even a rapidly changing personnel of both officers and cadets can be safely accommodated with this program.

While the program described below is designed for a compulsory type program of intramural sports, many of the principles and techniques of organization and administration are equally applicable to the voluntary intramural programs in high schools and colleges.

OBJECTIVES OR DESIRED OUTCOMES

The development of strength rather than skill for the beginner in which:

1. Grasps are strengthened.
2. Upper body strength is developed: Biceps, triceps and abdominals are built up assuring improved physical fitness and relative safety to the cadet as he attempts progressively difficult gymnastic stunts.
3. Individual proficiency in strength, endurance, power, agility, balance, flexibility and coordination is increased.
4. Keener interest in individual accomplishment.
5. Teamwork based on individual effort.
6. A desire on the part of the cadet to participate in gymnastics and tumbling with a view to increased and maintained physical fitness.

The competitive gymnastic program emphasizes strenuous effort and provides a challenge for all concerned. The below par cadet is motivated to strive for par standing. The man at or above par is actuated to progress beyond his immediate standing, hence an excellent spirit of rivalry is maintained.

ORGANIZATION AND ADMINISTRATION

The program must be flexible because of a rapidly changing personnel of officer coaches and cadets. As it is now administered, the Sports Program* could make assignments weekly and the gymnastic staff could meet the changing situation.

Method of Organization

The novice is given full consideration through a series of achievement tests in

* At the Pre-Flight Schools the assignments are made every four weeks for the winter schedule and six to twelve weeks for the summer schedule.

gymnastics on graded levels. (Described on page 295 under Competition) The classifications are established on a squad basis as follows:

- Squad A—Varsity
- Squad B—Junior Varsity
- Squad C—Average
- Squad D—Below Average (Developmental)

Method of Scoring

The scoring is computed on a point basis (See p. 320) according to squad requirements, records broken, and relay competition. On competition days the coach stays at the same station for uniform judging.

Distribution of Activities

Monday is "Instruction Day." The cadets attempt the stunts and coaches instruct as to the proper technique, etc.

Tuesday and Thursday are "Stunt Days" when cadets attempt to check off the stunts listed for the various levels.

Wednesday is "Relay Day." Teams compete in relays which stress upper body development. (See page 297)

Friday is "Free Day." (See pages 297, 323-336)

Attempts may be made to break existing records. (See page 298)

Participation is encouraged in Doubles and Triples Balancing. (See pages 184-194)

Instruction in Trampoline practice is given. (See page 239)

Stations of Activity

Six stations of activity have been established as follows:

- | | |
|-------------|------------------------------|
| 1. High Bar | 4. All-Out Effort Activities |
| 2. Tumbling | 5. Parallel Bars |
| 3. Ropes | 6. Balance Beam |

For Squad C rings are substituted for ropes; side horse is substituted for balance beam.

The horizontal ladder may be substituted for the balance beam, and the parachute agility jump for the vaulting box in Squad C.

The following stations are added for the spring and summer programs:*

- | | |
|------------------|-----------------------|
| 1. Vaulting Box | 7. Vertical Pipes |
| 2. Low Parallels | 8. Horizontal Pipes |
| 3. Long Horse | 9. Horizontal Ladders |
| 4. Buck | 10. Inclined Ropes |
| 5. Side Horse | 11. Climbing Shelf |
| 6. Rings | 12. Swinging Rope |

Time Allotment

The Sports Program period is sixty minutes.** One-sixth of the total time is

* *Summer Schedule.* There are twelve stations when the twelve teams are together for competition.

** In the Summer Program it is one hour and twenty minutes and approximately thirteen minutes at each station. Twelve teams compete with each other.

spent at each station. The sound of a horn is the signal to change from one station to the next. At the first blast of the horn, cadets cease activity and fall in. At the second blast of the horn cadets march to the next station in columns of twos. The coach or captain may take charge of the team. At the beginning of each period two minutes are devoted to push-ups, squat jumps, sit-ups, "V" position, etc. (See Squad D or C Stunts.)

RULES AND REGULATIONS

The competitive gymnastics and tumbling program is directed by a member of the gymnastic staff.

There are three sports periods per day during the winter. Four teams composed of 20-40 men each compete in each period. Company commanders from the Military Department are designated as athletic directors by the Sports Program Office. They make up the different teams from their entire company of approximately 180 cadets, naming the teams:

Vindicator	Corsair	Helldiver	Kingfisher
Catalina	Dauntless	Mariner	Avenger
Coronado	Wildcat	Seagull	Hellcat

These teams compete against each other during the Sports Program, four competing during the period following their regular sports instructional period. There are three Sports Program periods during the day,* with four teams competing each time. Coaches for each team are assigned by the Sports Program Office. Many of these coaches have had no experience in the teaching of gymnastics. Part of the problem then is to acquaint them with both the program and the activities. Part of the first day is devoted to orientation.

EXPLANATION DAY

The first day of each four week session is known as "Explanation Day." Half of this first period is used to acquaint both the coaches and the cadets with the apparatus and with many of the activities and safety procedures. The various stunts are also demonstrated. The latter part of the period is used to acquaint the group with the method of moving from station to station. The period terminates with a lively calisthenic workout.

Uniform.—Khaki trunks, "T" shirt and socks. Sweat suits and tennis shoes are stacked in gear rack. Gear that is not being used must be stowed in the gear rack.

Spotting.—Spotting is a safety procedure in which one or more cadets stand ready to assist or safeguard a performer. Two or more spotters are needed for every performance on the apparatus. Three spotters are needed for the flying rings; one at the front end of the swing, one in the middle and one at the back end of the swing. (See Chapter V on Safety Methods and Devices.)

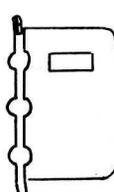
Muster.—Cadet mustering is done by the outstanding team member from the viewpoint of achievement. If he is absent, the next in rank takes over. Other cadets are seated according to number. Muster books are obtained from a cen-

* In the summer the Sports Program is one period per day.

trally located rack. (See Chart IX) They are kept in the form designated by the Sports Program Office (See Chart IX), a copy of which is placed above the muster book rack. Cadets muster five minutes before the activity. Musters are taken at the assigned places on the deck. Immediately following muster, the absentee slip is placed in the Sports Program Box for check on absentees.

COACH:											
COMPANY E	PLAYBOOK	JANUARY					FEBRUARY				
1	2	25	26				1	2			
2	2										
3	1										

CORRECT FORM FOR MAKING OUT MUSTER BOOKS



MUSTER

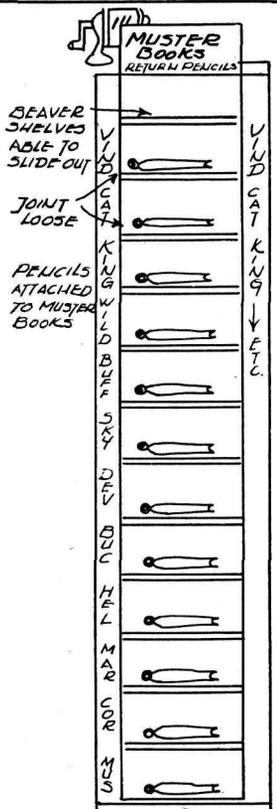


CHART IX. MUSTER BOOK AND RACK

Basis of Competition

Four graded levels or squads of achievements, Squads A, B, C and D have been established, and are based upon progressively-arranged stunts.

- | | |
|---|---|
| <p>Squad A Varsity Calibre
 First and Highest Level
 Skill and Ability Basis (See page 320)</p> | <p>Squad B Junior Varsity
 Second Level
 Skill and Ability Basis (See page 320)</p> |
|---|---|

Squad C	Average Third Level Strength and Elementary Skill (See pages 299-317)	Squad D	Below Average Fourth Level Strength. Promotion of upper body development (See pages 299-317)
---------	--	---------	--

Competition is organized on a point basis. (See page 308 for point scoring.) The first day of competition: All cadets try Squad D stunts, the fourth level.

The Second Day of Competition.—Cadets who have passed the requirements of Squad D attempt the third level. (Squad C)

Squad D and C Requirements.—(See pages 299-317) Cadets work together under the supervision of their coach while in Squads D and C.

Uniforms.—Squads D and C wear the blue "T" shirts. Squad B wear the yellow shirts. Squad A wear the white "T" shirt with Squad A printed on the front. The wearing of the different colors designates at a glance the ability of the various groups, and promotes interest and motivation to advance to the next group.

Squad A and Squad B Requirements (See pages 318-320): Work in Squad A* and Squad B is on an independent basis. Coaching is done by a member of the gymnastic staff. Proper performance of a stunt is verified by a cadet on an opposing team and the stunt is then checked off on the Squad B or Squad A Chart. The check marks used are as follows:

(1st Week—1); (2nd Week—2); (3rd Week—3); (4th Week—4); (5th Week—5), etc. (See Chart No. XI, p. 320)

Squad A members may participate in the following activities after having passed all "A" requirements:

- (1) Varsity Intercollegiate Competition
- (2) Exhibitions at Championship and Basketball Games, etc.
- (3) Inter-squad Gymnastic Meets
- (4) Assist in Instruction

Squad Advancement Basis.—In order to be promoted to Squad B, the cadet must successfully complete all Squad D stunts, plus forty of the Squad C stunts. The promotion entitles his team to ten additional points. Direct advancement to Squad A (Varsity) allows his team twenty points but requires proper performance of the following stunts:

	<i>High Bar</i>		<i>Low Parallels</i>
Kip		Hand Balance for 10 Seconds	
Drop Kip		<i>Parallel Bars</i>	
Free Hip Circle		Kip	
	<i>Tumbling</i>		<i>Long Horse</i>
Front Handspring		Straddle Vault	

Rope Climb

20 foot Climb without use of legs.

The above stunts were selected in terms of the following criteria:

1. A quick screening of ability of a large group.
 - a. For quick recognition of individual differences.
 - b. For quick determination of candidates for a Varsity Squad.

* On varsity.

2. Appropriateness in teaching effective handling of the body.
 - a. For advancement with reasonable safety.
 - b. For correlation to the objectives of the general program.

Vaulting	Balancing
Climbing	Apparatus Stunts
Tumbling	

3. Their importance as fundamentals for more advanced tricks.

Relay Day

This day is held every Wednesday. Some of the relays* used are the following:

Crab Crawl	Coaster Relays	Inverted Hang
Seal Crawl	Elephant Walk	Monkey Hang
Lame Dog	Horse and Rider	Tandem Walk
Running on All Fours	Horse Walk	Wheelbarrow
Medicine Ball Relays	Human Chair	Ropes
Rope Climbing Relays		

Free Day

The free day is held every Friday and permits participation in:

Doubles and Triples Balancing,** Trampoline Activities,† Attempts at Record Breaking, Climbing the Cargo Net, Individual Development Room

During half of the period, two teams are performing doubles and triples balancing stunts while the other two are performing on the trampoline.‡ After thirty minutes, the teams change activities.

Doubles and Triples Balancing

The doubles and triples balancing practice takes place on a large area covered with tumbling mats. For doubles, work is done in groups of threes; two cadets attempting the stunt, a third spotting. For triples, work is done in groups of fours, with one man spotting. All the balancing tricks are first demonstrated by the instructor or by Varsity men, who point out the different cues and the spotting positions. After the demonstration everyone attempts the stunt.

Several doubles balancing tricks are introduced during the half hour. Selection may be made from the list described in Chapter X.

Trampoline Activities

Trampoline activities are restricted to elementary tricks such as the following:

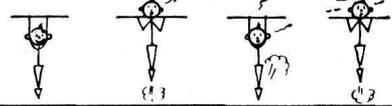
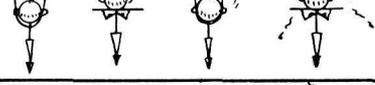
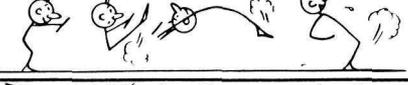
Bouncing, Twists, Land on Knees, Land on Seat, Seat to Knees (Series), Front Drop, Front Drop-Pull Through to Seat, Back Drop to Feet, Back Drop to Half Twist to Seat, Seat Half Twist to Seat

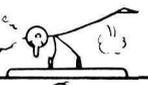
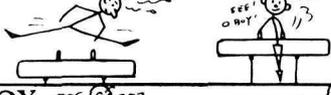
* For description of relays see Chapter XIV.

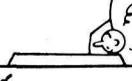
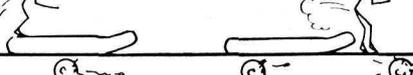
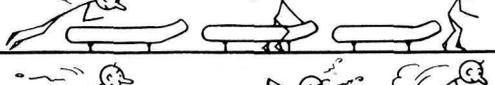
** See Chapter X.

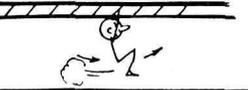
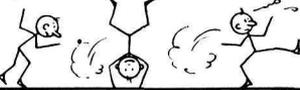
† See Chapter XI for Trampoline Activities.

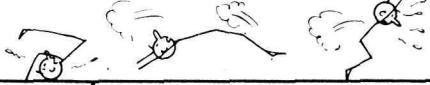
‡ Squad A men can use the trampoline every day except Friday. They can try more difficult tricks since they are a select group.

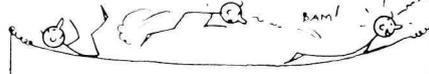
GYMNASTICS AND TUMBLING SPORTS PROGRAM																					
Squad D and C Stunts																					
* = D Stunts																					
HIGH BAR																					
*10 Chins																					
*3 Skin the Cats																					
*2 Monkey Hangs																					
Belly Grinds																					
Skin the Cat, Belly Grind, Skin the Cat																					
Monkey Hang, Skin the Cat, Monkey Hang																					
8 chins to back of neck																					
Short-under-swing Dismount																					
One Arm Chins, Grasp Wrist																					
Belly Grinds, Short-under-swing Dismount																					
Back Hip Circle																					
Single Knee Swing-up																					

* = D Stunts	<p>SPOT!</p>  <p>SQUAD D AND C STUNTS</p>								
*Wolf Vault									
High Vault									
Rear Vault									
Rear Vault, One-half Turn									
Thief Vault									
Scissors on End									
Shoulder Roll									
Scissors from Cross Seat									
Straddle Vault to Back Rest									
VAULTING BOX									
Jump to Stand, *Straddle Vault									
Jump to Stand, *Squat Vault									
*Straddle Vault									

<p>* = D Stunts</p> <p>SPOT!</p>  <p>SQUAD D AND C STUNTS</p>							
<p>Squat Vault Low & High Box</p> 							
<p>Squat Without Hands</p> 							
<p>Flank Vault Sideward</p> 							
<p>Swan Dive and Catch</p> 							
<p>Head Balance</p> 							
<p>Stand, Scissors Off</p> 							
<p>Vaulting Routine</p> 							
<p>LONG HORSE Jump to Stand *Straddle Vault</p> 							
<p>Jump to Stand *Squat Vault</p> 							
<p>Jump to Straddle Seat on Neck, *Straddle Off</p> 							
<p>Squat Vault</p> 							
<p>Straddle Vault</p> 							

* = D Stunts	SPOT!																		
<p>SQUAD D AND C STUNTS</p> 																			
Neck Spring																			
<p>HORIZONTAL Travel Length, Two Hand Jump (Front)</p>	<p>LADDER</p> 																		
<p>Travel Length, Two Hand Jump (Backward)</p>																			
<p>TUMBLING 2 Front Rolls, Turn, *2 Back Rolls</p>																			
*Cartwheel																			
*Head Balance, 10 Seconds																			
Head Balance, Arms Folded																			
Forearm Balance																			
3 Cartwheels																			
Head Balance, Clap Hands																			
Forward, Sideward Back Roll																			
Head Balance, from Squat Balance																			

* = D Stunts	<p style="text-align: center;">SPOT!</p>  <p style="text-align: center;">SQUAD D AND C STUNTS</p>	
Roll Back to Head Balance		
Hand Balance, 5 Seconds		
Head Balance, 5 Straight Leg Lifts		
Snap-up		
Hand Balance, Forward Roll (3)		
Head Spring		
Hand Spring (front)		
<p>ALL OUT ACTIVITIES</p> <p>*25 Push-ups</p>		
*50 Sit-ups		
<p>35 Sit-ups (Back of head touching deck, back arched)</p>		
*Squat Balance, 20 Seconds		
Squat One Leg, 10 Times		

<p>* = D Stunts</p> <p>SPOT!</p>  <p>SQUAD D AND C STUNTS</p>					
<p>TRAMPOLINE</p> <p>Seat to Stand *(sit drop)</p>					
<p>Knees to Stand *(knee drop)</p>					
<p>*Knees to Seat</p>					
<p>Knees, One-half Twist to Knees</p>					
<p>Front Drop</p>					
<p>Stand, Full Turn to Stand</p>					
<p>Back Drop</p>					
<p>Seat, One-half Twist Seat</p>					
<p>Seat to Belly</p>					
<p>Back to Belly</p>					
<p>Belly to Seat</p>					
<p>Belly to Back</p>					

SPOT!																			
																			
SQUAD D AND C STUNTS																			
<i>Back, One-half Twist to Stand</i>																			
<i>Belly, One-half Twist to Belly</i>																			
<i>Knees, Full Twist to Knees*</i>																			
<i>Three-quarter Forward Turnover, Piked</i>																			
<i>Three Quarter Forward Turnover, Tucked</i>																			
SQUAD B STUNTS																			
HIGH BAR <i>Double Knee Swing-up, Between Hands</i>																			
<i>Double Knee Swing-up, Outside Hands</i>																			
<i>Single Knee Circle Forward</i>																			
<i>Hock Swing Dismount</i>																			
<i>Hock Swing with One-half Turn</i>																			
<i>Backward Hip Circle</i>																			

<p>SPOT!</p>  <p>SQUAD B STUNTS</p>									
<p><i>Squat Over Neck</i></p> 									
<p>TRAMPOLINE <i>For More Advanced Tricks Refer to Chapter XI</i></p>									

SQUAD A—VARSITY STUNTS

- | | | |
|---|---|---|
| <p><i>High Bar</i>
Kip
Kip with one-half turn
Back Kip
Reverse Grasp, Kip
Free Hip Circle
Drop Kip
Uprise (Ordinary Grasp)
Uprise (Reverse Grasp)
Back Lever
Front Lever
Pull to Support Both Hands
 Leading
Double Knee Circle Forward
Double Knee Circle Backward
Circus Kip
Free Hip Circle Backward
Forward Hip Circle
Giant Swing (Ordinary)
Giant Swing (Reverse)
Heel Dismount
Ordinary Flyaway</p> <p><i>Parallel Bars</i>
Straddle Forward over Both Bars
Straddle Backward over Both Bars
Hollow Backrolls
Kip (End)
Glide Kip
Back Kip
Drop Kip
Peach Basket
 Back Somersault to Upper Arm Hang
 Back Somersault to Support</p> | <p>Front Somersault to Upper Arm Hang
Front Somersault to Support
Kick Upstart to Upper Arm Balance
Top Kip or Kick Upstart
Double Rear Dismount
Double Front Dismount
Straddle over Both Bars to Cross Rest
Glide Kip in Center of Bars
Glide Kip to Hand Balance
Pirouette Dismount</p> <p><i>Rings</i>
Hand Balance
Pull to Support Both Hands
 Leading
Shoulder Balance
Front Dislocator
Back Dislocator
Back Lever
Front Lever
Front Cut Off
Back Cut Off</p> <p><i>Tumbling</i>
Headspring
Neckspring
Front Handspring
One Arm Handspring
Hand Balance—Neckspring
Leaping Handspring
50 ft. Hand Walk
Hand Walk with Medicine Ball between Feet for 15 ft.
Back Handspring</p> | <p>Back Somersault
Back Somersault—Layout
Front Somersault
Gainer
Roundoff, Back Handspring
Two Flip Flops (Back Handspring)
Back Handspring, Back Flip
Alternates
Bounders
Back Flip with One-Half Twist</p> <p><i>Long Horse</i>
Squat over Neck
Straddle over Neck
Stoop Vault
Back Straddle over Neck
Sheep Vault over Neck</p> <p><i>Low Parallel Bars</i>
Press to Hand Balance
Walk Length of Bars
Pirouettes
Hand Balance
Shoulder Balance
Hand Balance One Bar</p> <p><i>Side Horse</i>
Double Rear
Scissors
Scissors (Reverse)
Single Leg Travel
Giant Hip Circle
Double Rear Vault
Triple Rear Vault</p> <p><i>Trampoline*</i>
Refer to Chapter XI</p> |
|---|---|---|

* The organization of a "Tramp" Club is very desirable.

SQUAD A - SPORTS PROGRAM

		High Bars	Parallel Bars	Low Bars	Uneven Bars	Flies	Tumbling	Platform	Vaults
TEAMS	CADETS								

CHART XI. SQUAD A STUNT CHART

Point Basis of Scoring

1. Scoring is based on the point system as follows:
 - One point per stunt, Squad D, C.
 - Squad B—2 points; Squad A—3 points.
 - Promotion from Squad C to Squad B—10 points.
 - Promotion to Squad A, Varsity—20 points if within the first week; 10 points after the first week.
 - Every record broken—10 points
 - Relays*—7 points every race won.

If there is an unequal number of cadets on the four teams competing against one another (i.e., Vindicator—40, Catalina—20), fifteen highest points from each team are compiled to make up the team total, or the team total can be divided by the number of cadets on the squad for the team average.
2. The highest varsity man is listed. This is obtained by the number of records that he is able to break, or by the number of stunts passed for that week.
3. The relative standing of all teams in all activities.
4. The Coach of the Week. The coach of the team with the highest total is designated the "Coach of the Week."
 - Coaching of Squads A and B is done by a member of the Gymnastic Staff.
 - Other scoreboards are also set up to show individual performance in Squads A and B. (See page 298)

* Usually 6 relays given.

MAN AGAINST MAN COMPETITION

Another method of conducting the Intramural gymnastic program was successfully developed at one of the Pre-flight schools. This scheme works best where there are only two teams involved.* Competition is conducted like a regular dual meet but the teams are organized on a man against man basis. This plan, now included in the intramural program at Florida State University, follows:

Points

- House—5 for winning
- Interdivision meets—10 points

Gymnastic Clinic

A gymnastic clinic is held during the second week of school in the Fall.

Personnel of Team

A team is comprised of six performers who must compete in all events except Double Balancing. In Double Balancing two men represent the team.

Events

1. High Bar—Single knee swing up, short underswing dismount.
2. Low Parallel Bars—Hand balance facing inward (mat over bars). Two attempts are allowed.
3. Tumbling—Three cartwheels (in a straight line).
4. Tumbling—Front Handspring.
5. Balancing—Hand walk for distance. The performer does not score unless he walks beyond a line 6 feet beyond starting point. If he can return to starting line he may have a second try.
6. Double Balancing—Shoulder-head-knee balance, to shoulder to shoulder to shoulder balance and forward roll.
7. Rope Climb—Twenty foot rope climb.

Order of Events

1. High Bar
2. Low Parallel Bars
3. Tumbling
4. Tumbling
5. Hand Walk
6. Double Balancing
7. Rope Climb

Officials

One judge provided by the Intramural Office and two scorers, one from each team.

* A trampoline meet likewise can be administered satisfactorily.

Method of Scoring

The meet is organized on a man against man basis. Their performance is evaluated by the judge, and the better performer scores one point for his team in all events except Double Balancing. In Double Balancing the winning pair scores 3 points for their team.

SPORTS PROGRAM STUNTS AND RECORD PERFORMANCES

On Floor (All Out)

1. *Balance on toes*

Stand on one foot, eyes closed, hands clasped over head. (Record—49 secs.)



2. *Forearm balance*

Place forearms on floor, palms down, head up—kick up to a balance. (Record—1 min. 47 secs.)



3. *Hand balance*

Stand motionless on one spot on hands. (Record—1 min. 50 secs.)



4. *Hand walk (floor)*

Walk on hands while in the hand balance position. (Record—186 ft.)



5. *Hand walk—(Low parallels)*

Walk the length of parallel bars, turn and walk back, etc. (Record—6.)



6. *Kneeling back—bend*

Take a kneeling position, hands behind the head, lean backward so that head touches the floor. (Record—64.)



7. *Leg lifts and Sit-ups*

Lie flat on back, lift legs so they are perpendicular to the deck, then lower, continue . . . Sit-up from flat on back, hands behind head, feet not anchored. (Record—500/500.)



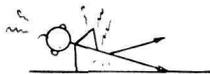
8. *Left side support*

Take a prone position, roll to side leaning position, balance on left arm and left leg, lift right leg up sideways. (Record—130.)



9. *Right side support*

Take a prone position, roll to side leaning position, balance on right arm and right leg, lift left leg up sideways. (Record—130.)

10. *Extension press-up*

Lie on deck, arms outstretched, palms down, legs together and straight. Head held down and shoulders kept low. Press forward with toes so body is raised from the deck, hold body about 5-6 inches from the deck. (Records—4 min. 15 secs.: no. of times—25.)

10a. *One arm extension press-up*

Same as 10 using one arm. (Record—2 mins.)

11. *Push-ups on hands*

Lie on abdomen, hands at side of chest, fingers straight, body rigid, push up and down. (Record—325.)

12. *Push-ups on fingers*

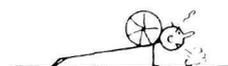
Lie on belly, hands under chest. Push body from deck to straight arm support, using finger tips, not flat of hand. (Record—84.)

13. *Push-ups slapping chest*

Do push-ups. At the top of push-up lift hands from deck and slap chest with hands. (Record—75.)

14. *Push-ups with 9 lb. medicine ball*

Same position as for push-ups on hands, except a 9 lb. medicine ball is balanced by a helper on the shoulders. (Record—305.)



15. *One arm push-ups*

Take a prone position same as for push-ups from deck. Place one hand behind the back and press up. (Record—84.)

16. *One-half lever*

Sitting position, place hands at side, lift feet and buttocks from deck. Legs are then parallel to the deck. (Record—80 secs.)

17. *Sit-ups (feet not anchored)*

Sit with legs together and straight, fingers laced, back of neck, lie back and sit up. The feet may be lifted slightly. (Record—2326. Sit-ups, Inclined Board—47.)

17a. *Sit-ups—back arched*

Touch deck with back of head only. (Record—75)

18. *Skip forward and backward over leg*

Hold to one toe with one hand. Hop forward and backward over leg without releasing grasp. (Record—34½.)

19. *Squat (Right leg forward)*

Place hands back of neck. Squat on left foot, hold right leg straight forward. (Record—47.)

20. *Squat (Left leg forward)*

Same as 19; holding left leg straight forward. (Record—41.)

20a. *Jump over stick*

Hold stick at shoulder width. Jump over stick maintaining grasp. (Forward and backward equals once.) (Record—41½.)



21. *Wrestler's bridge*

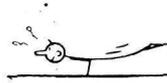
Head placed on mat, arms on chest, feet spread apart, body slightly flexed at hips. Turn over to back position and then to front position without touching hands to deck. (Record—33.)

22. *Eight foot jump agility test*

Jump from eight foot platform, land on both feet, perform a forward roll, sideward roll, backward roll, respectively. Time is taken when feet hit on landing from platform. (Record—2.5 secs.)

23. *Elbow lever on deck*

Body supported on elbows (in the belly) with hands on deck, body straight, feet together, head up. (Record—3 min. 46 secs.)

24. *Forearm balance walk for distance*

Balance on forearms then walking forearm over forearm for distance. (Record—43' 9".)

25. *Hand walk fifty feet for time*

Walking on hands from a running start. (Record—8.3 secs.)

26. *Handwalk with 9 lb. medicine ball*

Same as 25 with 9 lb. medicine ball between knees. Ball must be kept in position by performer. (Record—132 feet.)

27. *Headbalance to handbalance*

Headbalance, press up to hand balance, then lower to head balance again. (Record—8.)



28. *Headbalance; Straight leg lifts*

Headbalance, lower legs (straight) and touch deck and getting back to headbalance each time. (Record—45.)



29. *Push-ups; Crab position*

Backbend position, bend arms and touch back of head then push back to original position. (Record—91.)



30. *Squat balance touch knees*

Supporting body on elbows, knees outside arms, head up, release knees from elbows and touch together. Return back to elbows each time. (Record—45.)



31. *Squat jumps*

Placing hands on top of head, fingers interlocked, feet 6 inches apart, squat down and sit on rear heel, keeping body erect at all times. Jumping up and change position of feet (6 inches) and landing in squat position. (Record—156.)



32. *Wrestler's turnover on medicine ball*

With head resting on medicine ball, hands are free, turn over to wrestler's bridge (head resting on ball, body arched and feet on mat), then turning back again to original position. (Record—33.)



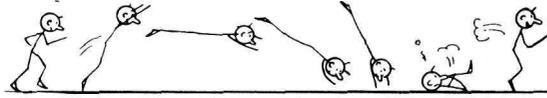
33. *Wrist twist*

Grasping wand with weight suspended to the floor. Hold at arms length and turn wand by wrist action until weight is under wand. Release weight to floor and twist wand lifting weight off the floor. Arms up opposite shoulders at all times. (Record—91½.)



34. *Diving roll*

Run and dive for distance, completing dive in forward roll. (Record—14' 4".)

35. *Number of sit-ups in five minutes; feet unanchored*

Lying flat on deck, hands back of neck, sitting up, keeping feet on deck, unanchored. (Record—132.)

36. *Number of sit-ups in five minutes; feet anchored*

Same as 36, feet anchored in any fashion. (Record—157.)

37. *"V" position*

Sitting position; legs straight; hands behind head; lift legs 6 inches above deck. Hold for time. (Record—20 min. 25 secs.)

38. *Forearm balance to hand balance*

Press from forearm balance to a hand balance. (Record—2)

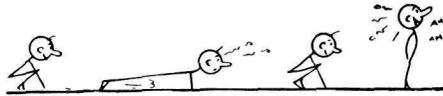
39. *V-Roll*

From a seat on the deck, raise both legs and bend the trunk forward forming at least a 90 degree "V" position balancing on the buttocks; arms extended forward upward to maintain balance. Hold momentarily. Roll right or left over the hip and come to a prone swan balance on the lower abdomen—hold momentarily. Return to "V" position by turning over the opposite hip. From "V" position to swan balance back to "V" position constitutes one "V" roll. (Record—32)



40. *Burpees*

From a stand, take a crouch sitting position; then a stoop falling position; back to a crouch sitting position and return to stand. These four successive movements constitute one burpee. (Record—40 in 30 secs.)



On High Bar

1. *Back lever*

Ordinary grasp on bar, pull through from hang position to half lever, legs straight, head up. (Record—53 secs.)



2. *Front lever*

Lifting body to a horizontal position by use of hands and arms. (Record—19.5 secs.)



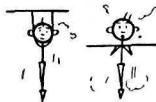
3. *Belly grinds*

Start from hanging position (ordinary grasp), pull legs up and over the bar, end up in hanging position. (Record—26.)

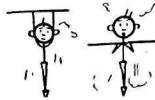


4. *Chins*

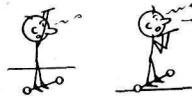
A. Use ordinary grasp, thumbs around the bar; straight pull-ups—no swing. (Record—46.)



B. Use reverse grasp; straight pull-up—no kicking, chin even with bar. (Record—46.)



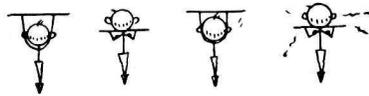
C. Use reverse grasp. Hold 50 lb. weight on instep. (Record—11.)



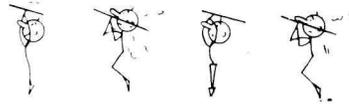
D. Use reverse grasp. Hold 9 lb. medicine ball between feet. (Record—21.)



E. Use ordinary grasp. Wide arm spread, pull up and touch back of neck. (Record—20.)



F. Grasp forearm of the one arm holding on to bar. (Record—21.)



G. Same only grasp bicep instead of forearm. (Record—6.)



H. Ordinary grasp; raise legs to half lever, instead of hanging straight down. (Record—21.)

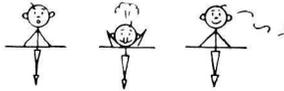


I. One finger chins. (Index fingers.) (Record—14.)

J. One arm chins. Chin with one arm. (Record—2.)



R. Chin dips. From front rest lower arms to chin and push-up to rest. (Record—15.)



5. *Pull up both hands leading*

Jumping and grasping high bar with over grasp and pulling body to front rest position. Lower down to hang and repeat. (Record—12.)



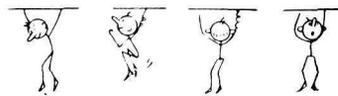
6. *Fence vault*

Stand grasp both bars, spring off from both feet over bar without touching any point of the body except the hands. (Record—6' 3".)



7. *Monkey hang*

Start from hanging position, ordinary grasp on high bar. Bring legs up and through arms, allow legs to drop through as far as possible, then drop one hand and pivot on one arm until your body makes one complete turn, then grasp bar with free hand—repeat. (Record—20.)



8. *Skin the Cat*

Come to a hang on the bars, flex at hips and pull through to inverted hang—return. (Record—25.)



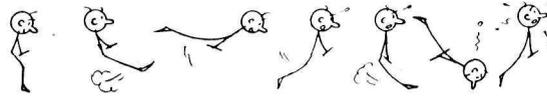
9. *Drop kips*

From front rest position, drop to kip position and kip to rest. (Record—25.)



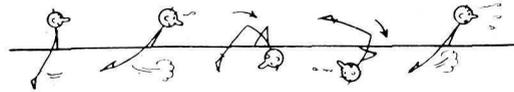
10. *Free Hip Circles*

From a front rest execute a series of free hip circles. (Record—19.)



11. *Forward Hip Circles*

From a front rest execute a series of forward hip circles. (Record—42.)



12. *Giant swings*

Swinging by hands in a complete circle, (Forward—backward). (Record—20.)

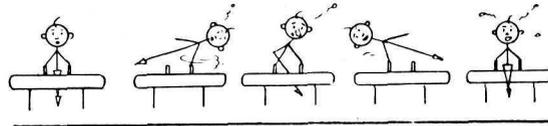


On Side Horse

1. *Giant Hip Circles*

Swing legs around horse over both pommels. (Record—28.)

2. *Scissors Ordinary* (Record—58.)



On Low Bar

1. *Short underswing dimount for distance*

(From high bar lowered to chin height) Grasp high bar with ordinary grasp, bring instep of one foot to bar and then swing under the bar and kick both legs out and push with hands. Land out for distance. (Record—10' 3".)



Parallels

1. *Dips*

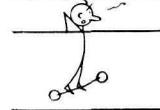
A. Grasp the ends of the parallel bars. Push up to straighten the arms, let down and push up. feet do not touch the floor. (Record—34.)



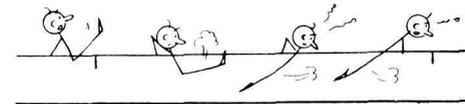
B. Reverse Grasp. (Record—20.)



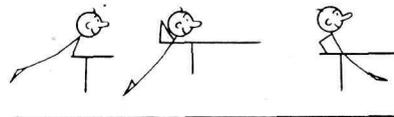
C. Same as A. 50# weight on instep. (Record—15.)



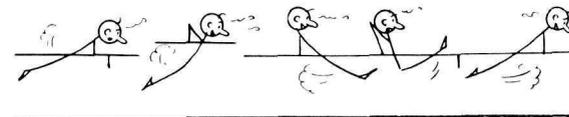
D. Swinging dips backward. Swing from shoulders, dip on back end of swing to bent arm and raise on forward swing. (Record—30.)



E. Swinging dips forward. Swing from shoulders, dip on forward swing and raise on backward swing. (Record—43.)

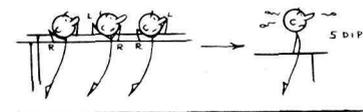


F. Swinging dips Backward and Forward. On each forward and backward swing, bend and come to straight arm support. (Record—31.)

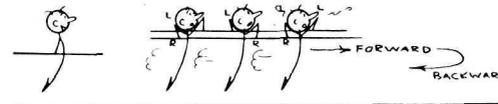


2. *Grasshopper Walk Forward and Dips*

Grasp ends of the bars, hold body in a full bent arm position. In this position walk forward to the opposite end of the bars and straighten out the arms-up and down. (Record—29.)

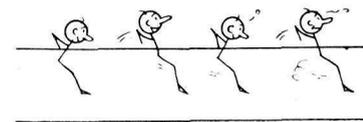


2a. *Grasshopper Walk Backward and Dips* (Record—31.)



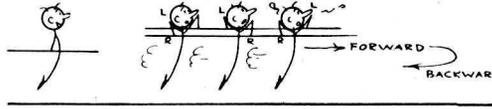
3. *Grasshopper Jump and Dips*

Start at one end of bars. Straight arm support. Bend at elbows. From this position, hop the length of bar, at end do dips. (Straighten arms then bend, then straighten, etc.) (Record—29.)



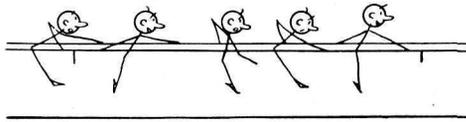
4. *Grasshopper Walk forward and backward and dips*

Walking length of bars in bent arm position, forward and backward then executing dips at end of bars. (Record—22.)



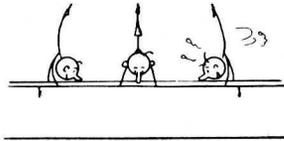
5. *Lion's Crawl and Dips*

Same beginning position as the Grasshopper Walk. Walk with one hand as far forward as possible and push out by straightening the arms. Repeat the entire length of the bars and then at end of bars straighten out the arms up and down. (Record—16.)



6. *Pirouettes*

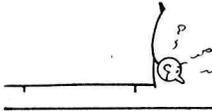
Handbalance on both bars—bring right hand to the bar which the left hand is on. Hold handbalance on that one bar. Now bring left hand backwards to the bar that right hand was on originally. Hold that balance . . . that completes a pirouette. (Record—8.)



Low Parallels

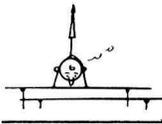
1. *Handbalance*

Stand on hands for time. (Record—2 mins. 16 secs.)



2. *Handbalance on one bar*

Handbalance on one bar for time. (Record—60 secs.)



3. *Pushups*

Front leaning rest on bars, push-ups similar to floor push-ups. (Record—202.)



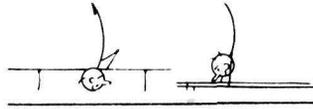
4. *Parrot Handbalance on Parallel Bars*

Handbalance on one bar. (Record—24 secs.)



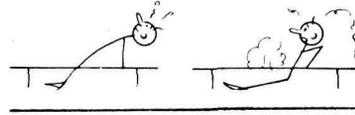
5. *Shoulder balance to handbalance*

On low parallels. Push to handbalance from a shoulder balance. (Record—6.)



6. *Push-ups (Back)*

Sitting on floor between bars reaching backwards, support body on hands on bars, raise body, tossing head back each time body is lifted upward to a support rearways. (Record—89.)



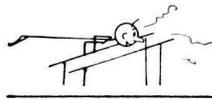
7. *Turn-table (legs in 1/2 lever)*

Support body with arms, lift legs parallel to mat, swing legs over left bar, bring right hand to left bar; then bring left hand back to bar right hand was on originally, throughout this movement, legs are not allowed to touch the bars. (Record—32 1/2.)



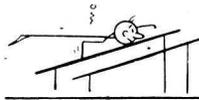
8. *Elbow lever*

Both elbows on belly and body in horizontal plane; supported by hands on bars. Body straight, head up. (Record—3 min. 30.5 secs.)



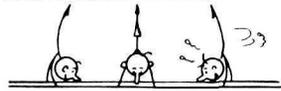
8a. *One Hand Elbow Lever*

Body supported on one elbow.

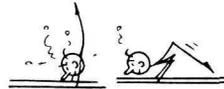


9. *Pirouettes*

Handbalance, then pirouetting counting 1/2 turn as one pirouette. (Record—9.)



10. *Straight Leg Bend Arm Press to Hand Balance*



Ropes

2. *Rope Climb 20 feet*

Single rope climb, hand over hand, starting from sitting position. (Record—4.9 secs.)



2. *Ropes. Double rope climb*

Same as 1 using two ropes. (Record—7.3 secs.)



3 *Ropes with 27½ # pack (parachute pack)*

Same as 1 with weight on shoulders, sacks on shoulders. (Record—8.2 secs.)



4. *Inverted Rope Climb*

Climb with feet overhead (Record—7 secs.)



Rings

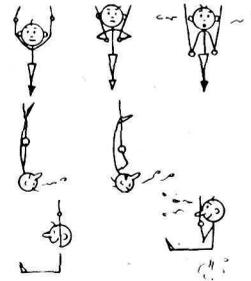
1. *Handbalance*

On still rings. (Record—45 secs.)



2. *Pull-ups both hands leading*

Grasping rings, overgrasp, pull to front rest. Lower body and repeat. (Record—9.)



Inverted Hang

Pull-ups in Inverted Hang position. (Record—36)

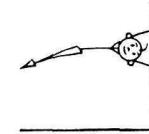
Chins—legs in Half Lever

Pull-ups with legs in Half Lever position. (Record—20)

Stall Bars

1. *Flags*

Very wide grasp on bars and pulling body up to a horizontal position. Arms straight and legs even with hips. (Record—23 secs.)



2. *Leg lifts*

Hang raise straight legs to half lever or "L" position then lower and repeat. (Record—81 times.)



3. *½ Lever with 9 # medicine ball*

Supporting medicine ball on legs while in "L" position, body suspended from top stall bar. (Record—41 secs.)



Medicine Ball1. 9 lb.—*throw for distance*

With back to field, medicine ball between hands, bend forward and bring ball between knees; throw it back over the head for distance. (Record—50 ft.)

2. 6 lb. *throw for distance*
63' 6"

Straight legs bent as in press hand balance, 7

Squat Balance, 2 min. 48 secs.

Punching Bag

Hitting punching bag, 225 per min.

Snap-ups, 144

Best all-round gymnast

The performer showing the best all-around ability on all apparatus.

Best doubles team

The two performers working together as a team and showing the best progression.

Best triples team

Same as above on three best men working as a team.

Best performer

High Bar; Parallel Bars; Side Horse; Long Horse; Trampoline; Tumbling; Flying Rings.

POST THESE RECORDS:
WHAT ARE
YOUR RECORD
PERFORMANCES?

Daily Reminder Board

Another effective board which is helpful in administering the program from day to day has been designated "Daily Reminder Board." On this board appear notices that seem most important for both the coaches and the cadets to note on any particular day. Typical reminders are the following:

<p>Remember to Spot Each Other</p>	<p>Last Day This Week to Check Off Stunts</p>	<p>Junior Varsity (Squad B) Requirements: 1. Pass all Squad D Stunts 2. Pass 40 Squad C Stunts</p>
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Grading of Cadets in Sports Program

The cadet is graded in the Sports Program on the basis of Superior, Average, Inferior. Chart XII shows a suggested grade scale which coaches may use in giving the cadets a grade for inclusion into their permanent file.

NO. OF STUNTS		GRADE	GRADE		
Grading for 1 wk. Period	Below 25	= Inferior	Grading for 4 wks. period	Below 40	= Inferior
	25-35	= Average		40-60	= Average
	Above 35 Any cadet who makes B or A.** Any Cadet who breaks a record	= Superior		Above 60	= Superior

CHART XII. SUGGESTED GRADE SCALE FOR SPORTS PROGRAM GRADE*

* Varsity men receive a numerical grade starting with 3.5.

** Grade Scale can be devised to suit various local situations.

SQUAD A (VARSITY) INTER-SQUAD MEETS

Administration of Gymnastic Meets.
 Rules of Competition in Squad A Meets.
 Suggested Stunts and Routines for Squad A competition.
 Physical Fitness Tests.

Events

Regular gymnastic meets* may be held between Squad A members. Competition should include:

Horizontal Bar
 Side Horse
 Rings (Still and Swinging)
 Parallels
 Long Horse
 Tumbling

Type of Routines.—Routines should be one set and one optional on each apparatus except ropes. Rope climbing should be for time. A different type of climbing will be prescribed from time to time. The type of climbing required at any one time will be one of the following kinds:

1. With the use of legs
2. Without the use of legs
3. Combinations of 1 and 2

A competitor's climbing time will be transferred into points as shown in the rope climbing time. Point Value Table (See page 345).

Officials.—Officers of the gymnastic staff should judge this type of gymnastic meet as considerable background is required to judge fairly. Three judges should be used for each event. One man is designated as the official referee for the meet. Other officials needed are:

Scorers	Announcer
Messenger	Recorder

Scoring

Individual Scoring.—A definite system of scoring should be used such as:

1. Difficulty—5 Form 5—Continuity or Unity—5
2. Difficulty—7 Form 5—Continuity—3
3. The Judges shall record a numerical mark for each routine on a basis of 0 to 100. They shall take into consideration the following:

Required Routine.—Since this type of routine is known beforehand by all competitors, only two factors need be considered: form and execution.

* A Varsity schedule of competition and exhibition should be arranged if possible.

Optional Routine.—In rating this type of routine, the judge of the particular event should give consideration to:

Difficulty: Originality, risk, strength, grip changes, balances, and mastery requiring intensive practice.

Combinations: Variety, changes from one position to another without unnecessary intermediate swings, turns or swings, both left and right and shifting of position.

Execution and Form: The routine should be a smooth, rhythmic routine without unnecessary pauses; knees straight; legs together; toes pointed; head erect; arms straight as the routine may require. There shall be no excess motion nor undue effort displayed.

Approach and Retreat:

Judgment shall be expressed for required and optionals in points as follows:

Excellent Performance	90 to 100 points
Good Performance	70 to 90 points
Satisfactory Performance	50 to 70 points
Poor Performance	30 to 50 points
Very Poor Performance	0 to 30 points

Team Scoring

The team with the highest score shall be the winner. To determine the team score the aggregate score will be taken.

Explanation of a Gymnastic Meet to Audience

Gymnastics as a competitive event is new to a lot of people. For this reason, it might be advisable to have the announcer present a simple statement prior to the start of the meet. Such a sample statement follows:

"This may be the first time many of you may have ever witnessed a gymnastic meet. With this in mind, I shall endeavor to explain how a gymnastic meet is conducted. This is a triangular meet between the Varsity Team, the Freshman Team, and the Varsity Team of the U. S. Navy Pre-Flight School.

Each team is permitted to enter as many performers as it desires in each event, but only the score of that team's three highest men counts in compiling their score for that event. At the termination of the meet, the points of each team are totaled and the team having the highest aggregate of points wins the meet.

The order of events, seven in all, follows: horizontal bar, side horse, flying rings, parallel bars, long horse, tumbling, and trampoline. Each team will alternate in having one of its competitors perform the first exercise on the respective apparatus.

The score of each performer is judged on the following basis: 7 points for difficulty, 5 points for form, and 3 points for the continuity or unity of the routine. This includes the approach and manner of leaving the apparatus. The highest score that can be awarded at any one time from one judge is 15 points, and from three judges, 45 points. At the completion of each separate exercise, each of the three judges will flash his score in plain view. The score will then be announced. At the completion of each event, the total score for each team will be posted on the scoreboard.

Each participant will perform one exercise. The judges for this evening are:

- 1.
- 2.
- 3.

The head judge will be

Rules of Competition in Squad A Meets will be between Squad A members.

No competitor will be permitted a second attempt at a routine unless the apparatus is faulty; the judge of the event shall decide the issue. The referee makes all final decisions relative to the meet.

A contestant may not continue his routine in the event of a "break" or "touch off"; the judge shall, however, lower the rating of the contestant if such "breaks" or "touch offs" occur decrease the difficulty or fluency of any exercise.

In the tumbling event a contestant shall not be disqualified if he steps off the side of the mat; however, a deduction in rating shall be made in such a case. A contestant in tumbling may leave the end of the mats to get a run for his routine.

In the rope climbing event, the starting position will be decided prior to the meet. It might be from the seat or the stand with both or no hands on the rope. The signal for starting shall be "On your mark! Go!"

Horizontal bar in competition for height; as high as it can be raised.

Parallel bars in competition—height; not more than 5'4" or less than 5'1"—Width 18".

Side horse vaulting in competition—no neck—height 42".

Long horse vaulting in competition with neck—42" high at point of saddle.

Still rings in competition—7'8" clearance from mat to lowest part of rings. Flying rings between 6' and 7' high.

Tumbling in competition—optional routine must not exceed 1½ minutes. A contestant will be given a signal when he has 15 seconds left.

Anything not covered by these rules shall be decided by the referee.

Assistance

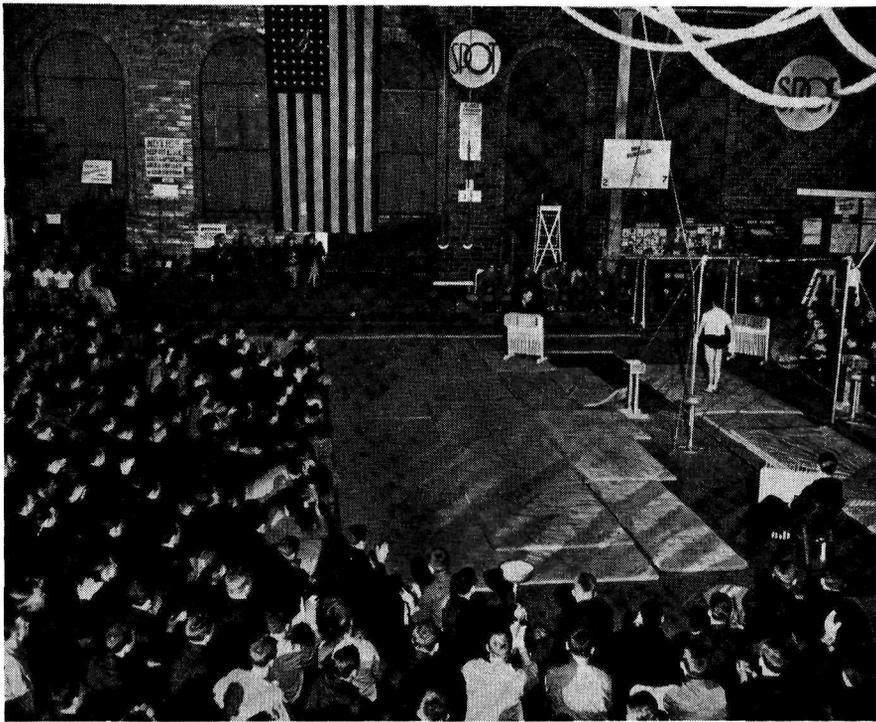
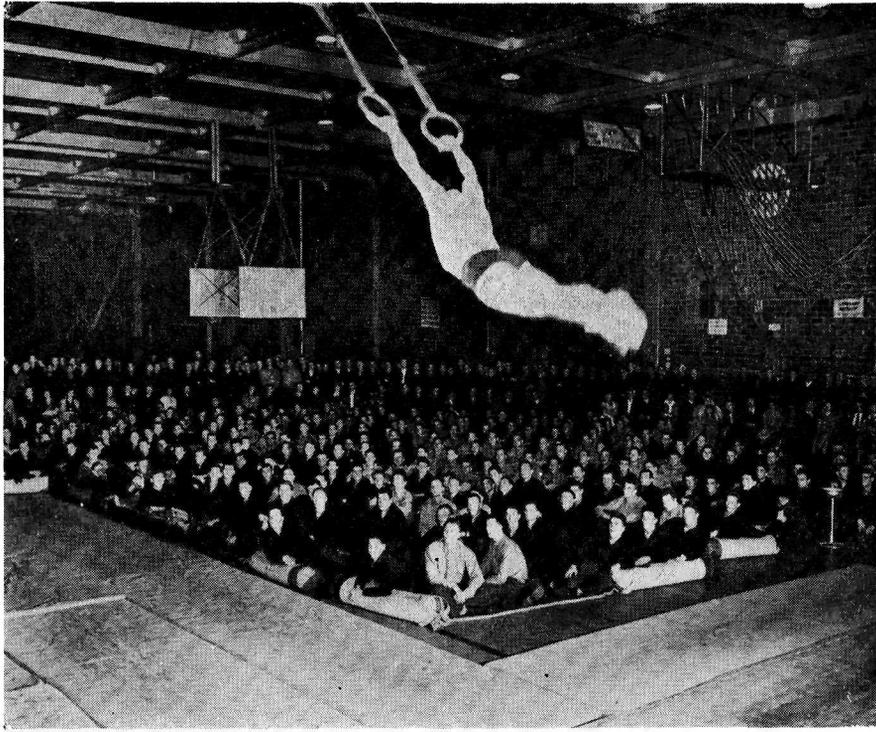
Spotting is permitted, but if assistance is actually rendered, this shall cause a deduction in the rating according to the degree given. If a competitor is too short to jump to hang on the apparatus, he may be assisted, but he shall suffer no loss in his rating.

SUGGESTED GYMNASTIC STUNTS AND ROUTINES

RINGS

Stunts or Routines in Order of Difficulty

- Bird's Nest or Nest Hangs
- Hang Rearways
- Inverted Hangs
- Single Leg Cuts
- Kips
- Dislocates Backward and Forward
- Uprises Backward and Forward



GYMNASTIC MEET

Forward and Backward Rolls
 Forward and Backward Levers
 Hand Balances (Flying and Still)
 Double Cuts on Forward and Backward Swings
 Double Cuts and Catches

Dismounts

From Inverted Hang Dismount on End of Forward Swing
 Straddle Cuts on Either End of Swing Either Forward or Backward
 Flyaways Backward on End of Forward Swing
 Front Flyaways on Backward Swing
 Flyaways with Twists
 Dislocates into Flyaways

Combinations

Required Routines will be all Still Rings
 Optionals—Flying Rings

PARALLEL BARS

Stunts or Routines in Order of Difficulty

Support Swings, Straddle Seats and Scissors
 Side Riding Seats
 Front and Rear Vaults
 Front and Rear Vaults with Quarter and Half Turns
 Single and Double Leg Straddle Vaults on End of Bar
 Forward Rolls
 Shoulder Balances
 Hang Kip on End of Bar
 Upper Arm Kip in Center
 Glide Kips
 Uprise Backward
 Uprise Forward
 Single and Double Leg Cuts In as Mount on End of Bar
 Single and Double Leg Cuts in Center of Bar from Support
 Half Levers on One Bar
 Hand Balances
 Walking on Hands
 Back Kips on End of Bar
 Backward Rolls
 Drop Kips
 Support Turns from Dip Swings in Center of Bar
 Uprises into Double Leg Cuts in Center of Bar
 Hand Balances on One Bar
 Forward and Backward Pirouettes
 Forward Somersault
 Backward Somersault
 Peach Baskets

Dismounts

Single and Double Leg Cut Offs at End of Bar

Flank, Front, Squats and Straddle Vaults over Both Bars from Stoop Falling
Position in Center

Same Vaults as above from Hand Balance on End

Same Vaults as above from Side Hand Balance on One Bar

Wendows

Twist Wendows

Forward or Backward Somersault over Side from Center of Bar

Handsprings off End or over Side

Cartwheel from Hand Balance in Center of Bar

Combinations

Jump to Upper Arm Hang. Uprise on Backward Swing. Swing to Straddle Seat in Front of Hands. Roll Forward. Simple Kip to Straddle Seat in Front of Hands. Grasp Ends of Bars, Swing and Straddle Dismount over Both Bars to Stand.

From a Cross Stand at End of Bars Straddle (Cut) under Both Hands to a Balance Support. Swing Backward to Hand Balance. Dip Swing Forward and Backward to Upper Arm Balance.

Difficult Shoulder Balance. Roll Forward to Upper Arm Hang and on Backward Swing Drop to Hang. Swing and Kip to Hand Balance. Turn to One Bar and Straddle Vault from Hand Balance as Dismount.

HORIZONTAL BAR

Stunts or Routines in Order of Difficulty

Knee Hangs

Knee Swing Ups with and without Swing

Forward and Backward Knee Circles

Hip Swing Ups

Hip Circles Backward and Forward

Crotch Swing Ups from Swing

Hip Swing Ups from Swing

Hip Swing Ups Rearways from Swing

Double Knee Circles Forward and Backward

Knee Hangs (Double) Swing and Dismount

From Seat on Bar Swing Arms Up and Back, Hook Knees, Dismount

Knee Circles Backward without Use of Hands, Half Twist to Support Frontways

Knee Circle Forward and Dismount Forward to Stand

Kip

Seat Swing Up, Through Arms to Balance Support

Back Kip

Kips with Mixed and Reverse Grasps

Kips with Forward Hip Circles

Drop Kips

Uprises

Uprises with Mixed Grasps
 Under Swings and Uprises
 Uprises with Backward Hip Circles
 Uprises with Reverse Grasp Changing to Ordinary Grasp Coming to Support
 Swings with Changing of Grasp to Uprises or Kips
 Free Hip Circles
 Seat Circles
 Instep Circles
 Squat Stand Sole Circles
 Straddle Stand Sole Circles
 Vaults (Learn on Low Bar) (Usually from Kip and Forward Hip Circle into
 Vault)

Dismounts

Front
 Flank
 Straddle
 Stoop
 Turn Swing Uprises
 Half Giants
 Giant Swings Forward and Backward (Never to be learned without Instructor
 Assistant)
 Forward and Backward Flyaways as Dismounts (To be Spotted always)
Combinations (Arranged in order of difficulty to show how to build and exercise)
 Jump to Hang with Ordinary Grasp. Swing. On Forward Swing Knee Swing Up
 Left Between Hands. Knee Circle Backward. Drop to an Underswing Dis-
 mount Rearways
 Uprise with Reverse Grasp and Change to Ordinary Grasp on Coming to Sup-
 port. Free Hip Circle Backward to Hang. Kip to Support and Front Vault
 over Bar to Stand

ROPES

On Ropes exercises will be Climbing with or without the Use of Legs. This will be executed either From a Stand, Seat on a Chair (legs free of deck) or From a Seat on the Deck (legs free of deck). Men will be climbing to top against time, either individually or as a relay group. This event will be scored on a team basis.

From time to time stunts on the Trampoline may be used in competition. Also Pyramid Building, Relays, Side Horse Vaulting and Elephant Vaulting may vary and stimulate the program. Rope Climbing and Side Horse Vault Values are listed below:

ROPE CLIMBING TIME VALUES IN POINTS*		SIDE HORSE VAULT VALUES	
<i>Time in Seconds</i>	<i>Points</i>	<i>Vaults</i>	<i>Points</i>
7 or under	100	Rear	50
8 to 7.1	95	Flank	55
9 to 8.1	92	Flank with 1/2 Turn	60
10 to 9.1	90	Squat	65
11 to 10.1	85	Straddle	70
12 to 11.1	82	Thief Vault	75
13 to 12.1	80	Squat with 1/2 Turn	75
14 to 13.1	75	Hand Balance Straddle	80
15 to 14.1	72	Hand Balance Squat	80
17 to 15.1	70	Hand Balance Stoop	85
18 to 17.1	68	Sheep	90
19 to 18.1	65	Stoop	90
20 to 19.1	62	Neckspring	95
21 to 20.1	60	Handspring (Straight arms)	100
22 to 21.1	55		
25 to 22.1	50		
26 to 25.1	40		
27 to 26.1	30		
28 to 27.1	20		
29 to 28.1	10		
30 to 29.1	5		

* Height—20 feet.

TUMBLING

Stunts or Routines in Order of Difficulty

Forward Roll	Forward Somersaults from a Running Start
Backward Roll	Forward Somersaults from a Stand
Rolls in Series	Backward Handsprings (Flips)
Diving Rolls	Round Off Back Handspring
Combinations of Rolls	Successive Handsprings
Cartwheels	Backward Somersaults from Springboard
Round Offs	Backward Somersaults from Stand
Backrolls to Head Balance	Momentary Hand Balance Followed by Snap Down and Flip Flop or Back Somersault
Backrolls to Momentary Hand Balance	Successive Somersaults Backward from Round Off
Snap Ups	Back Somersault with Half Twist (Full Twist)
Rolling Snap Ups	Back Somersault with Layout
Snap Downs	Baronis and Side Somersaults
Forward Headsprings	
Forward Handsprings	
Headsprings or Handsprings in Series	
One Hand Handsprings	
Handsprings with Half Twist	
Handspring from Dive	

PRE-FLIGHT TEST

		EVENT	RECORD	CREDIT
I. FLEXIBILITY and BALANCE	1.	Recovery from dizziness: Rotate 5 times, eyes closed, finger on floor, then immediately walk line 10 feet by 8 inches	_____	_____
	2.	Rope swinging: Swing on rope from tower 8 feet high and drop with half turn, landing on balance	_____	_____
	3.	Trunk flexion: 8 inches from floor—(no bobbing of head)	_____	_____
	4.	Trunk extension: 20 inches from floor	_____	_____
	5.	Shoulder flexibility: 15 inches from floor	_____	_____
II. AGILITY	6.	Forward and backward "safe" fall: Demonstrate form for each 3 times	_____	_____
	7.	Skipping forward and backward over leg 3 times	_____	_____
	8.	Vault: Over bar 5 feet high	_____	_____
	9.	Thirty-foot run, forward roll, climb rope 18 feet, climb down forward roll, back to 30 foot mark: 20.0 seconds	_____	_____
	10.	Agility exercise: 24 counts in 12.0 seconds	_____	_____
III. STRENGTH	11.	Extension Press-up: Body 4 inches off floor, hold 5 seconds	_____	_____
	12.	V support two minutes	_____	_____
	13.	Pick-up on shoulders, kneel, lower: Man of own weight	_____	_____
	14.	Leg lifts and body levers: 35 each, successively	_____	_____
	15.	Chin the bar: 12 times	_____	_____
IV. POWER	16.	100 yard sprint: Outdoor track, 12.0 seconds	_____	_____
	17.	Running broad jump: 15 feet, outdoors	_____	_____
	18.	Rope climb: 19-foot rope in 12.0 seconds	_____	_____
	19.	Six pound medicine ball throw: 50 feet horizontally	_____	_____
V. ENDURANCE	20.	Vertical jump: 20 inches above reach	_____	_____
	21, 22.	Run Obstacle Course in 3 minutes	_____	_____
	25.	Swim continuously for 30 minutes	_____	_____

CADET _____
 Squad A _____ B _____ C _____
 Squadron _____

Head of Gymnastics & Tumbling _____ Director of Test _____

Combinations

With a running start Hand Spring Forward. Return with Round Off Back Roll to Momentary Hand Balance Snap Down to Feet. Running Forward Somersault.

Round Off Series of Flip Flops Back Somersault. Handspring Forward Somersault. Round Off Alternating Flip Flops and Somersaults. Cartwheel Side Somersault. Round Off Somersaults in Swing Time Series. Round Off Flip Flop, Full Twisting Back Somersault.

OUTDOOR GYMNASIUM SPORTS PROGRAM

When the weather permits, the program can be moved outdoors. Many of the activities that are used for the indoor program can be readily adapted to the outdoor gymnasium. Apparatus can be constructed very easily and with the help of the labor crew can be constructed at a very reasonable cost.

Some of the equipment that could be constructed for outdoor use is:

Horizontal Bar—made from pipes or wood
 Parallel Bars—made from pipes or wood
 Vaulting Boxes—made of wood and covered with felt and canvas
 Vertical Ropes—fastened to trees
 Rings—fastened to trees
 Balance Beams—old steel rails
 Vertical Poles—made from pipe
 Tumbling Pits—sawdust mixed with crankcase oil; cover with canvas for ground tumbling
 Inclined Boards (For abdominal work)
 Rope Ladder
 Low Parallel Bars
 Beat Boards and Storm Boards. (Inclined take off boards)
 Instructor's Stand
 Boxes to hold Resin and Magnesium
 Bulletin Boards
 Wands—made from broom handles
 Parachute Agility Platforms—different heights
 Safety Belts
 Oblique Ropes—one tree to another
 Bucks—made from tree trunks covered with padding and canvas
 Stall Bars—pipe or wood and Agility Pegs.
 Climbing Shelf—made from wood, maybe between two trees
 Vaulting Fence and Swinging Rope.

Some of the indoor equipment could be made available for the outdoor gymnasium if facilities permitted easy transportation to and from the indoor gymnasium, such as:

Trampoline
 Springboards
 Cargo Net

Rohn Rods (Aero Wheels)
 Adjustable Bar Bell
 Medicine Balls

Most of the relay races can be conducted outdoors. At a Pre-Flight School the outdoor program consists of:

- Monday—Instruction and coaching of the various stunts for competition during the week
- Tuesday—Competition Day
- Wednesday—Free Day or Practice Day
- Thursday—Competition Day
- Friday—Relays

SUMMARY

The sports program in gymnastics is organized on a self-testing basis. Cadets strive to improve their standing by moving from Squad D through Squads C and B to A. The more skilled performer is given the opportunity to move directly from Squad D to Squad A by passing off the following eight stunts:

- | | |
|---------------------------|------------------------------------|
| <i>High Bar</i> | <i>Parallel Bars</i> |
| 1. Kip | 6. Kip |
| 2. Drop Kip | |
| 3. Free Hip Circle | <i>Long Horse</i> |
| <i>Tumbling</i> | 7. Straddle Vault |
| 4. Front Handspring | |
| <i>Low Parallels</i> | <i>Rope Climb</i> |
| 5. Hand Balance, 10 secs. | 8. 20 ft. Climb without Using Legs |

Strength rather than skill is sought for with the beginner.

Through graduated competitive activities in the Squad D and C group, progression is developed, which reduces the possibility of accidents to a minimum and stimulates the individual to improve himself.

Teamwork based on individual effort is the principle upon which the program is operated: It is challenging to everybody.

Variety of activities are promoted:

Monday, Tuesday and Thursday are Stunt Days.

The stations used are High Bar, Tumbling, Ropes, All-Out Effort Activities, Parallel Bars, Balance Beam, Storm Board, Trampoline, Doubles Balancing, Long Horse, Vaulting Bar, Vaulting Fence, Rings, Low Parallels, Climbing Shelf, Peg Board, and Agility Pegs.

Friday is Relay Day.

Wednesday is Free Period or Practice Day.

- Doubles and Triples Balancing
- Trampoline Activities
- Break Records
- Cargo Net and Peg Board
- Individual Development Room

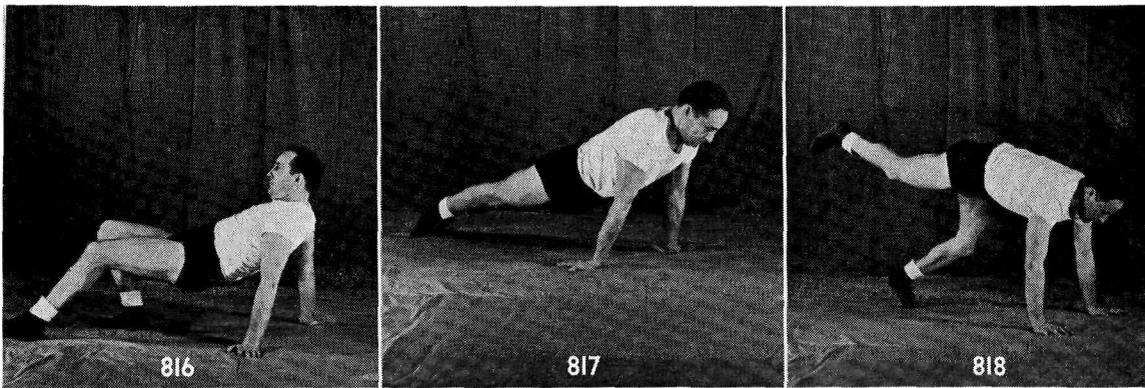
If the program is organized on a dual meet basis, practice may be held on Monday, Tuesday, Wednesday, and Thursday with competition on Friday.

CHAPTER XIV

Suitable Relays for Upper Body Development

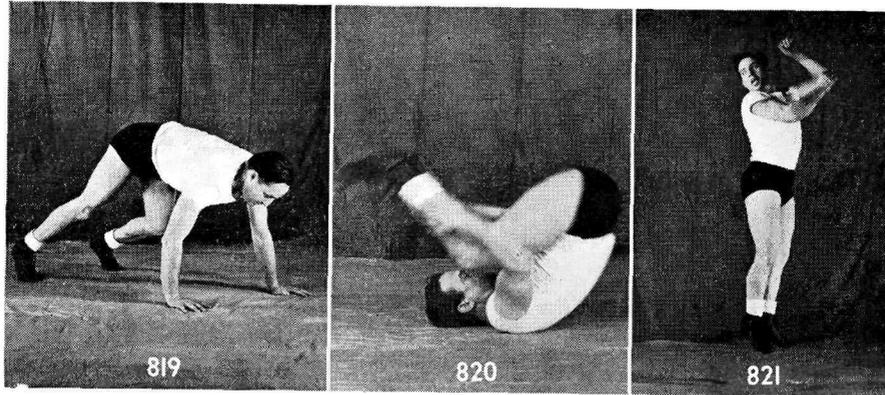
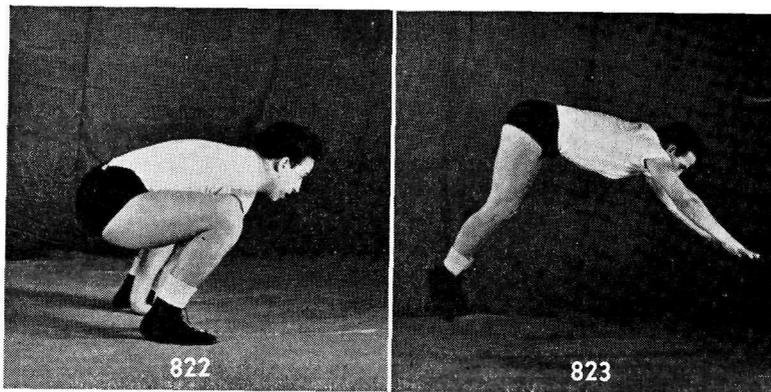
Both the instructional and the intramural gymnastics and tumbling program may be greatly enhanced by the use of relays. Relays that are designed specifically to aid known deficiencies, mainly upper body strength, should be chosen. The following relays do not exhaust the possibilities, but are offered as relays which have been used very successfully.

SOLO RELAYS



Solo Without Equipment

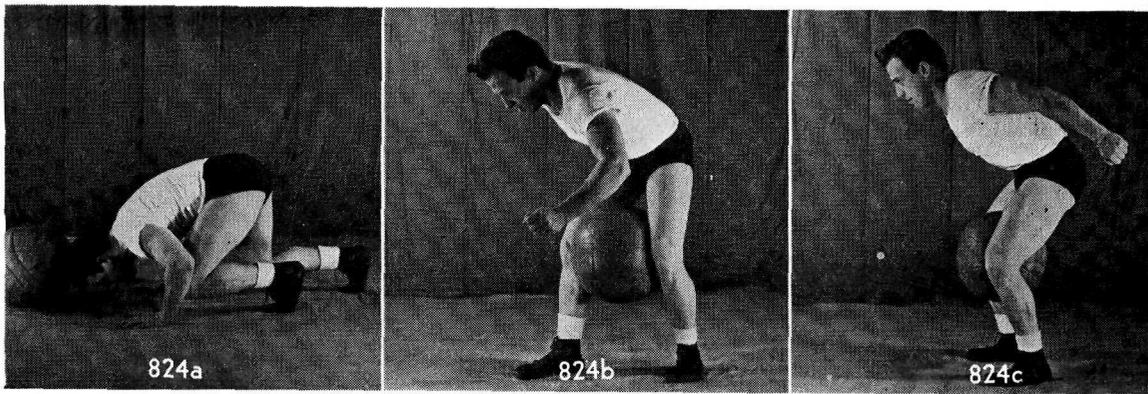
- 816—*Crab Crawl*.—Cadet lies on his back, raises body off the mat to the crab position (supporting on hands and feet)—Crawl backward and forward!
- 817—*Seal Crawl*.—Cadet in prone position, resting on straight arms and insteps of feet. Drag himself to line and back. Swing freely from hips—Keep fingers pointed backward!
- 818—*Lame Dog*.—Cadet on all fours—Lifts one leg and hops to a line and back!

819—*Running on All Fours.*820—*Dive.*821—*Turn and Continue Series.*822—*Frog Jump.*823—*Frog Jump and Dive.*

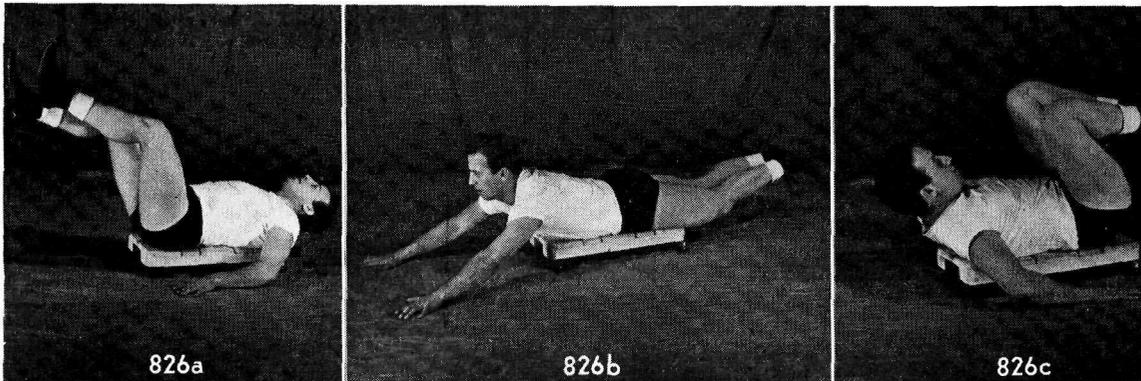
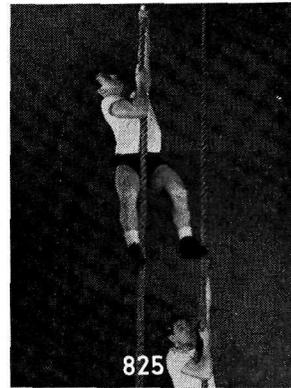
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Solo with Equipment

824—*Medicine Ball Relays.*—(a) Cadet down on all fours, butts the ball with his head to a distant line and back; (b) Place Medicine Ball between legs. Cadet runs to line and back holding the ball between legs! *Variation.*—Cadet runs backward to line; (c) Place Medicine Ball between legs—Cadet jumps to line and back holding the ball between legs!

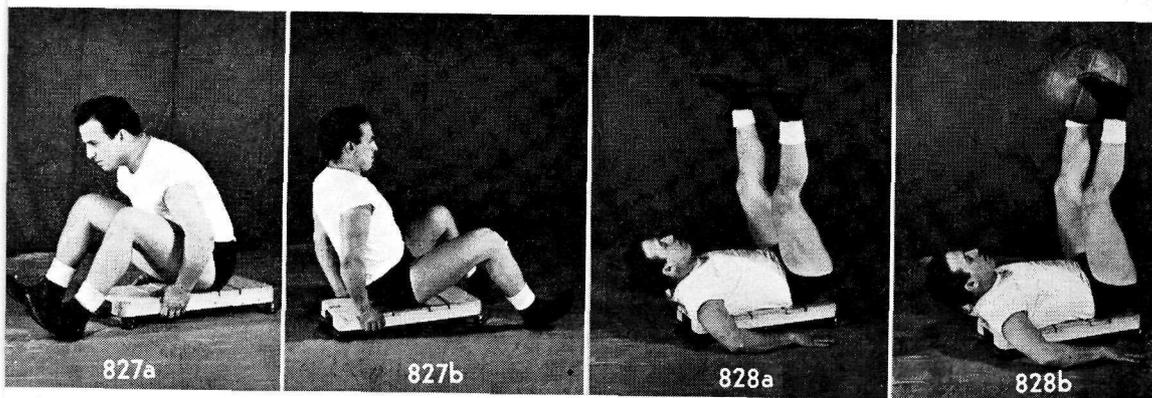


825—*Vertical Rope*.—Two ropes for each team. Divide the team, half of team sitting facing one rope, half facing the other rope. On start Cadet A climbs to the top or to a specific height (15-18 feet, etc.). When he reaches top, Cadet B starts to climb. While he is climbing, A is descending; so when B has reached his required height, C is ready to climb the rope A just came down.



826—*Coasters*.*—(a) Lying on coasters in prone position, push with hands—Travel head first; (b) Lying on coaster, supine position—Push with hands—Travel head first; (c) Same as above—Travel buttocks first!

* The coasters furnished with the trampoline may be used for this purpose.

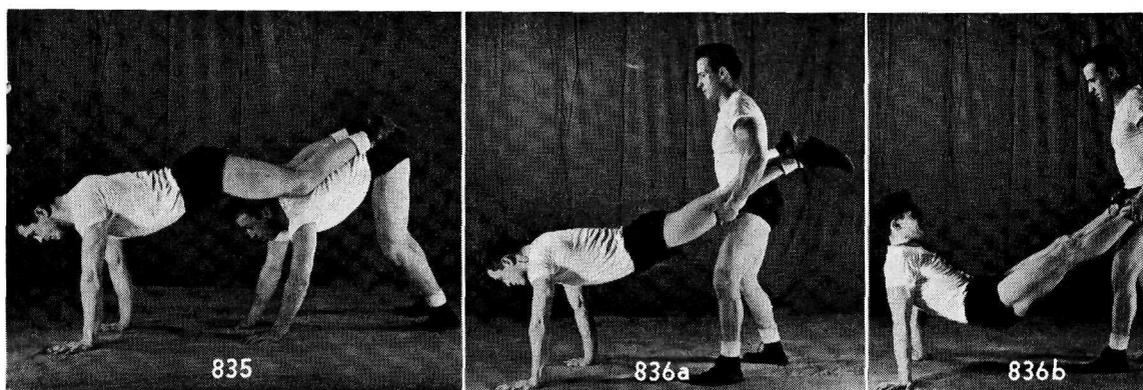
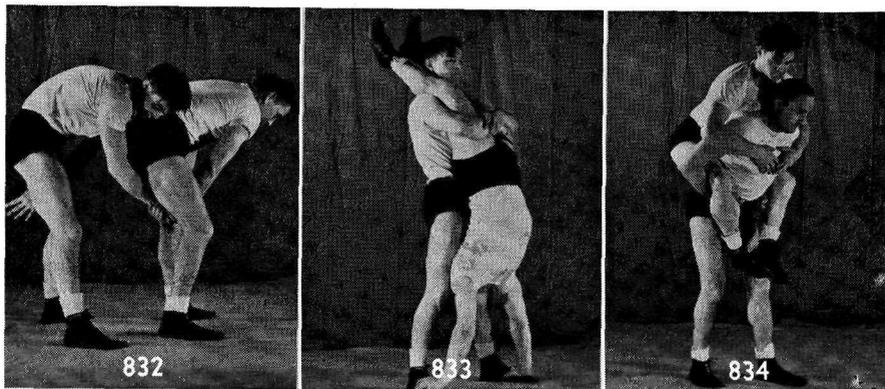
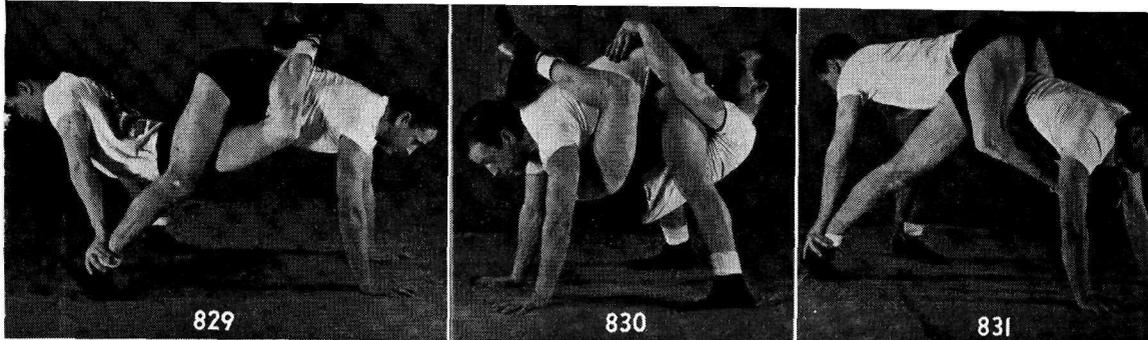


- 827—(a) Sitting on coasters—Push with feet only—Travel forward; (b) (Same as above)—Travel backwards!
- 828—(a) Supine positions—Legs up, vertical to deck—Push with hands; (b) (Same as above)—Medicine Ball between feet!

DOUBLES RELAYS

Doubles without Equipment

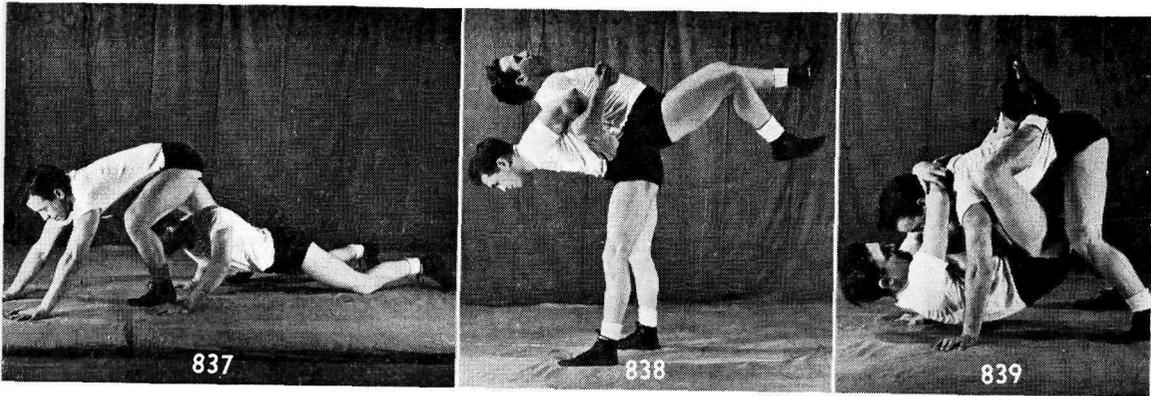
- 829—*Elephant Walk*.—(Cadets A and B) Cadet A stands erect, legs spread—Cadet B faces A, jumps upward and places legs around A's waist. Bends backward and places arms on deck between A's legs—Cadet A bends forward and places hands on deck—Cadet B places hands on A's ankles and straightens arms—Cadet A moves forward!
- 830—*Monkey Walk*.—Cadet A stands with legs spread—Cadet B lies on his back between A's legs facing same direction as A—Cadet A bends forward, placing hands on the deck—Cadet B places legs around A's waist, reaches upward and holds around A's buttocks, fingers clasped together—A moves forward carrying B!
- Variation*.—This relay may be modified by travelling half the length of mat rolling left or right, and B returns to the starting point carrying A.
- 831—*Horse Walk*.—Cadet A bends forward placing hands on the deck—Cadet B lies on A's back facing opposite direction, legs around A's chest, hands on A's ankles, arms straight!
- 832—*Human Chain*.—Cadet A bends slightly forward placing right hand between his legs—Cadet B stands back of A, bends forward and grasps A's right hand with his right hand—Cadets must keep hands grasped!
- Variation*.—This relay may be modified for the whole team to run together.
- 833—*Inverted Hang*.—Cadet A stands erect—Cadet B faces A, bends forward placing hands on A's feet, does a hand balance—Cadet A grasps the ankles of B as he makes hand balance—On signal, A and B move forward!
- Variation*.—This relay may be modified by placing hurdles such as mat rolls on their path.
- 834—*Horse and Rider (Piggy-Back)*.—Cadet A stands erect—Cadet B mounts on A's back, feet and legs around A's waist, hands clasped over A's shoulders—Cadet A carries B to designated object—Change partners and return!



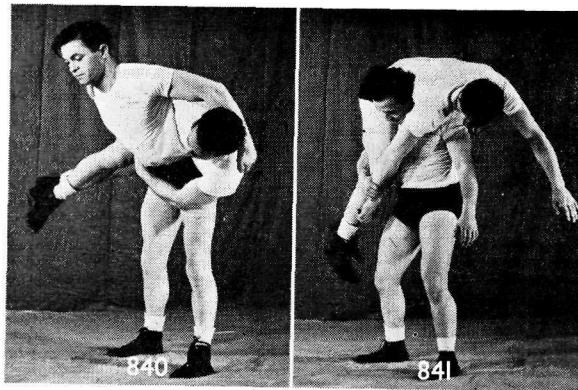
835—*Tandem Walk*.—Cadet A bends forward placing hands on the deck, fingers well spread—Cadet B stands in front of A, facing same direction, bends forward placing hands on the deck, fingers well spread, feet being raised upward and placed on A's shoulder—On given signal, both walk forward!

836—*Wheelbarrow (Forward or Backward)*.—(a) Forward—Cadet A, supported on hands, legs in hands of Cadet B, who is standing—A and B walk forward!

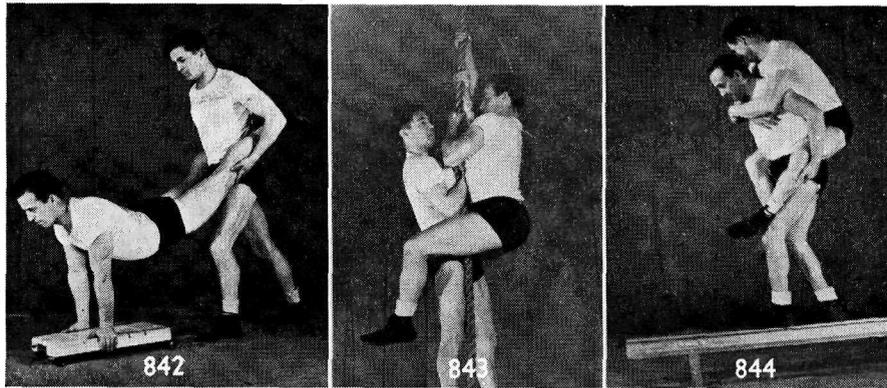
Variation.—(b) Backward—This relay can be done backward.



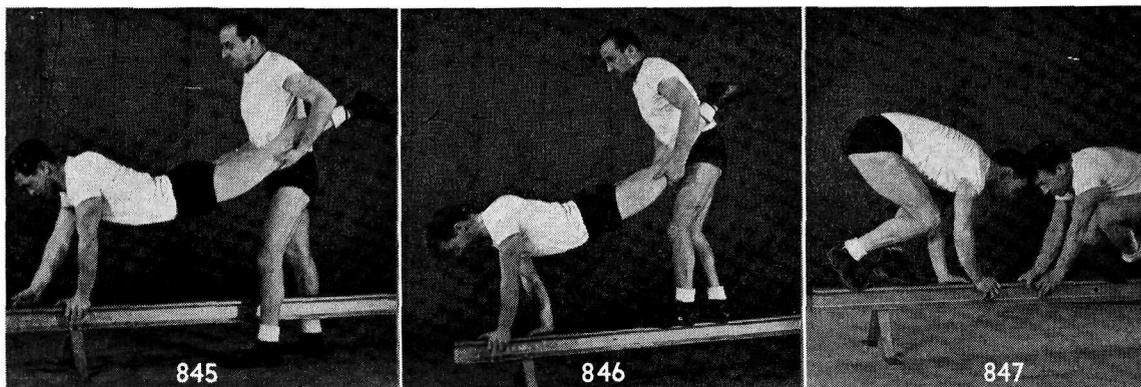
- 837—*Wheelbarrow Change*.—Walk half way—Cadet A lies flat on belly—Cadet B jumps over and takes the position—Cadet A then picks up B's legs and continues on to finish line!
- 838—*Back Carry*.—Cadets A and B stand back to back and lock arms—A bends forward lifting B up on his back—A bends at the waist raising his legs upward!
- 839—*Pilot Hang*.—Cadet A lies on the deck facing upward—Cadet B faces A, straddles him, legs spread, and bends forward placing hands on the deck, facing A—Cadet B places legs around A's waist and holds onto A's neck, moves forward carrying B!



- 840—*Saddle-Back Carry*.—Cadet A holds Cadet B waist high, horizontal to the deck—Cadet B is facing Cadet A's back!
- 841—*Fireman's Carry*.—Cadet A holds Cadet B over one shoulder. He locks his arms under B's thigh and holds wrist!

Doubles with Equipment

- 842—*Wheelbarrow on Coasters*.—Cadet A supported on hands on coaster, legs in hands of Cadet B who is standing behind him—Cadet B then pushes A the length of the floor and then they change places!
- 843—*Passing on Rope*.—After A has reached the top, B starts—A starts to descend and passes his teammate on the rope. This process continues until the entire team has climbed and descended the rope!
- 844—*Piggy-Back Along Balance Beam*.—Cadet B mounts A on the floor—He then steps up on the balance beam and walks the length of it. They then change places—The relay should perhaps be done barefooted to get a better grip on the beam!

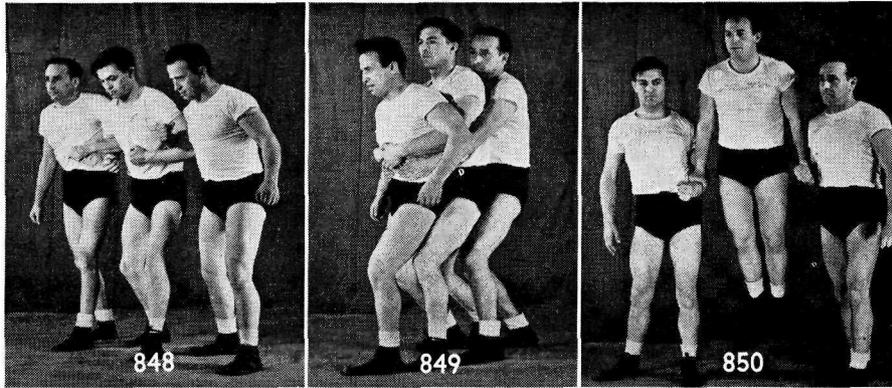


- 845—*Wheelbarrow Along Balance Beam (Not on Beam)*.—Cadet A supported on hands on balance beam, legs in hands of Cadet B who is standing astride the beam—Cadet B walks along deck—At the end of the beam they change and A supports B!
- 846—*Wheelbarrow Along Balance Beam (Both on Beam)*.—(Same as above) except that Cadet B walks along beam instead of on the deck!
- 847—*Head Wrestling on Balance Beam*.—Tight grip—Push with toes and head!

Climbing Shelf Relay (9 ft. high).—Each team places one man (A) in position—He lies face downward with arms extended—On the signal *GO* the first man runs to the shelf, jumps into a forearm grasp with A. A then helps him to climb shelf—After he is on top, A jumps to mat—When he lands that is the signal for the next man to start—When the last man crosses line, the team will have concluded the race!

GROUP RELAYS

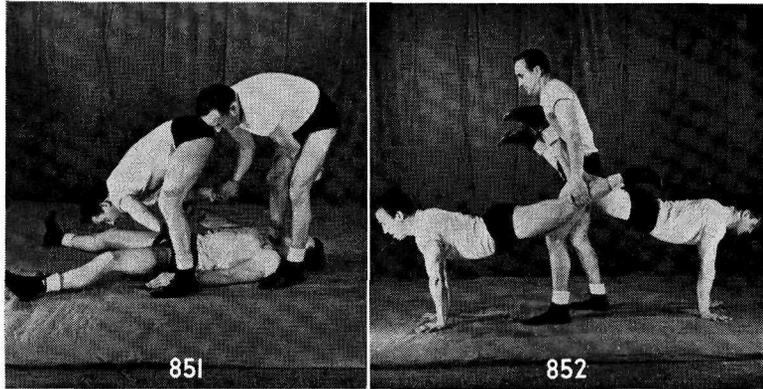
Group without Equipment



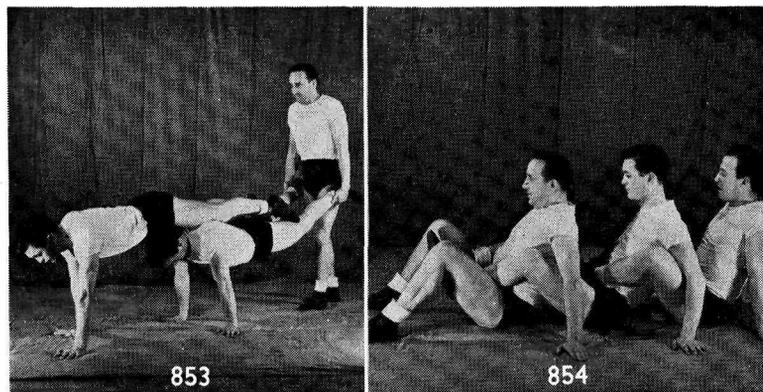
- 848—*Chariot Race (2, 4, 6, 8 Cadets).*—Men run together, arms locked, around distant object.
- 849—*Centipede.*—Entire team stands behind each other in close formation, arms around each other—The entire line then runs around a distant object and back!
- 850—*Forearm Carry (A, B, and C).*—Cadets A, B, and C stand side by side facing same direction—Cadets A and C flex inside arms, forearm parallel to the deck outside arms flexed and held across the body grasping inside arm—Cadet B grasps the wrists of A and C and lifts his body upward—Feet approximately 4 to 6 inches off the deck. Cadets A and C move forward carrying B.

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- 851—*Skin the Snake (6 or More).*—Cadets line up in single file or squad, facing same direction—Cadets bend forward placing right hand between the legs grasping the left hand of the cadet behind him—Cadet reaches forward with his left hand and takes right hand from man in front—On given signal, last man in column lies down keeping body straight, feet together—All cadets move backward doing same procedure—When the first man gets over all, he holds on and returns to original position!

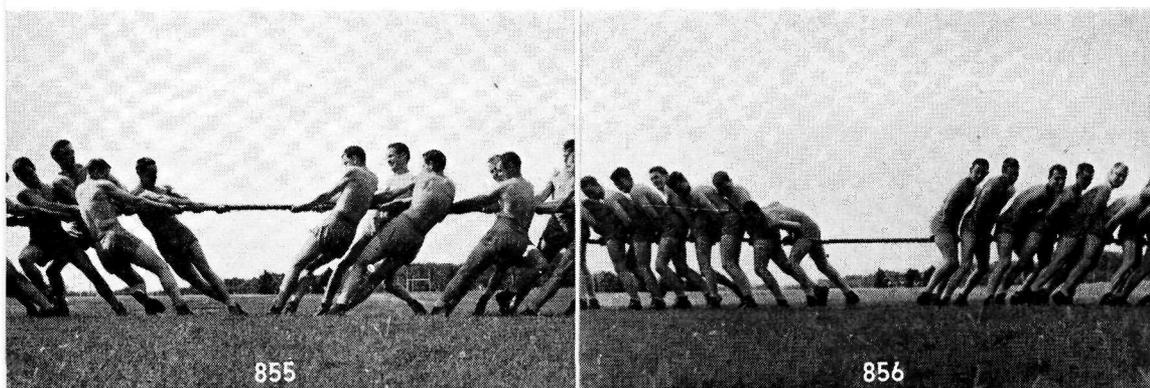


852—*Tripod (A, B and C)*.—Cadet A stands erect—Cadet B stands in front of A, facing same direction—Places hands on the deck, raises legs, placing feet beneath A's arms—Cadet C stands with back to A and assumes same position as B—A moves forward holding B's and C's legs firmly under arms!



853—*Three-Men Wheelbarrow*.—Cadets A, B, and C stand directly behind one another facing same direction—Cadet A bends forward placing hands on the deck—Cadet B places hands on A's buttocks while C stands and holds B's feet and legs extended!

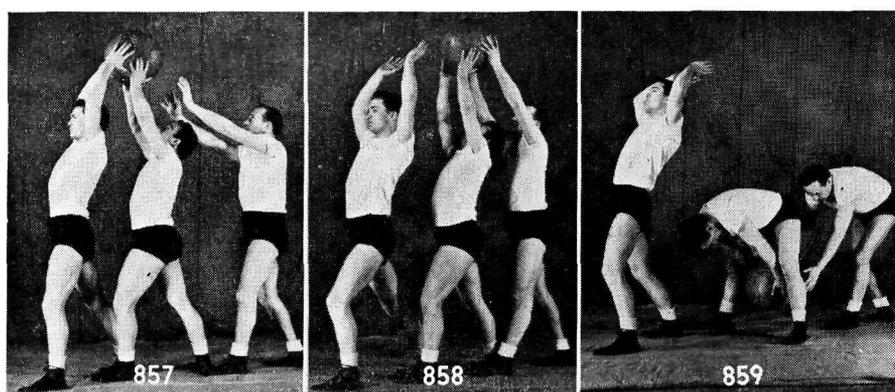
854—*Stroke the Boat*.—Cadets sit on the deck directly behind one another, placing feet in one another's lap—Cadet in forepart of the boat can push with his feet, hands, and buttocks, while other cadets will be limited to hands and buttocks—If cadets separate, that team loses!

Group with Equipment

855—*Ropes—Tug of War.*—Use 1½ inch line, fifty feet long—Twelve men or more on a team—Length of time: pull for two minutes.

856—Rope between legs pulling backwards in opposite directions—This method is suitable for a limited space.

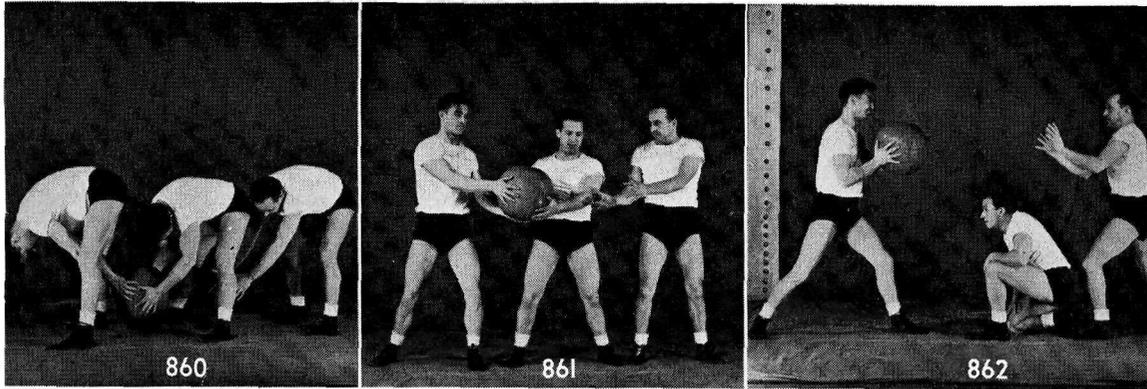
Coasters—Soccer.—Improvise the game of soccer to be played on coasters.



857—*Medicine Ball (Overhead—Last Man to Front).*—The team stands in a straight line—The medicine ball is passed over head starting from the first man—The last man brings the ball to the front of the line and passes it overhead—Repeat this procedure until everyone is back in his original position.

858—(*Back between Legs and Forward over Heads*).—Team in straight line—The ball is passed backward between legs, when it reaches the end of the line it is passed forward over the heads—Five complete trips constitutes a relay!

859—(*Over and Under—Last Man to Front*).—The team stands in a straight line—The first man passes the ball over his head; the second man passes the ball between legs; third man passes the ball over his head, etc. Last man brings the ball to the front of the line and the procedure is repeated—Keep this up until everyone is back in the original position!



- 860—(*Back Between Legs—Last Man to Front*).—Team stands in straight line—The ball is passed backward between legs, when it reaches the end of the line the last man runs to the front of line with the ball and then passes ball back between legs!
- 861—(*Down the Sides*).—Team stands in straight line shoulder to shoulder—The ball is passed down the side of the line—When it reaches the end everyone about faces and the ball is passed up the other side—Five complete trips constitute a relay!
- 862—(*Pass and Duck—Four or more Cadets*).—Cadet A stands 3 feet in front of X column composed of three or more cadets facing X column. Cadet A passes 9 lb. medicine ball to Cadet B, who returns pass and then squats. A passes to C who does as B did, and so on down the column—When the ball gets to the end of the column the cadet carries ball to the position of A and then A steps in front of column and the relay continues!
- Variation.*—This relay may also be done by passing the ball backward over the head!

APPLICATION OF THE NAVY GYMNASTIC MANUAL
TO GRADE AND HIGH SCHOOL TEACHING

1. The Flight Preparatory School Program is suitable for the Seventh Grade. At this age it is desirable to emphasize vaulting activities rather than support work. Tumbling and balancing should be emphasized, also.
2. The War Training Service School Program is suitable for the Eighth Grade. Tumbling should be emphasized. Include also vaulting, natural gymnastics, and relays for upper body development.
3. The Preflight School Program is suitable for the Senior High School. Use the first part for 9th and 10th grades and the second part for 11th and 12th grades.

In adapting the Navy syllabus to the school program the following changes might be made:

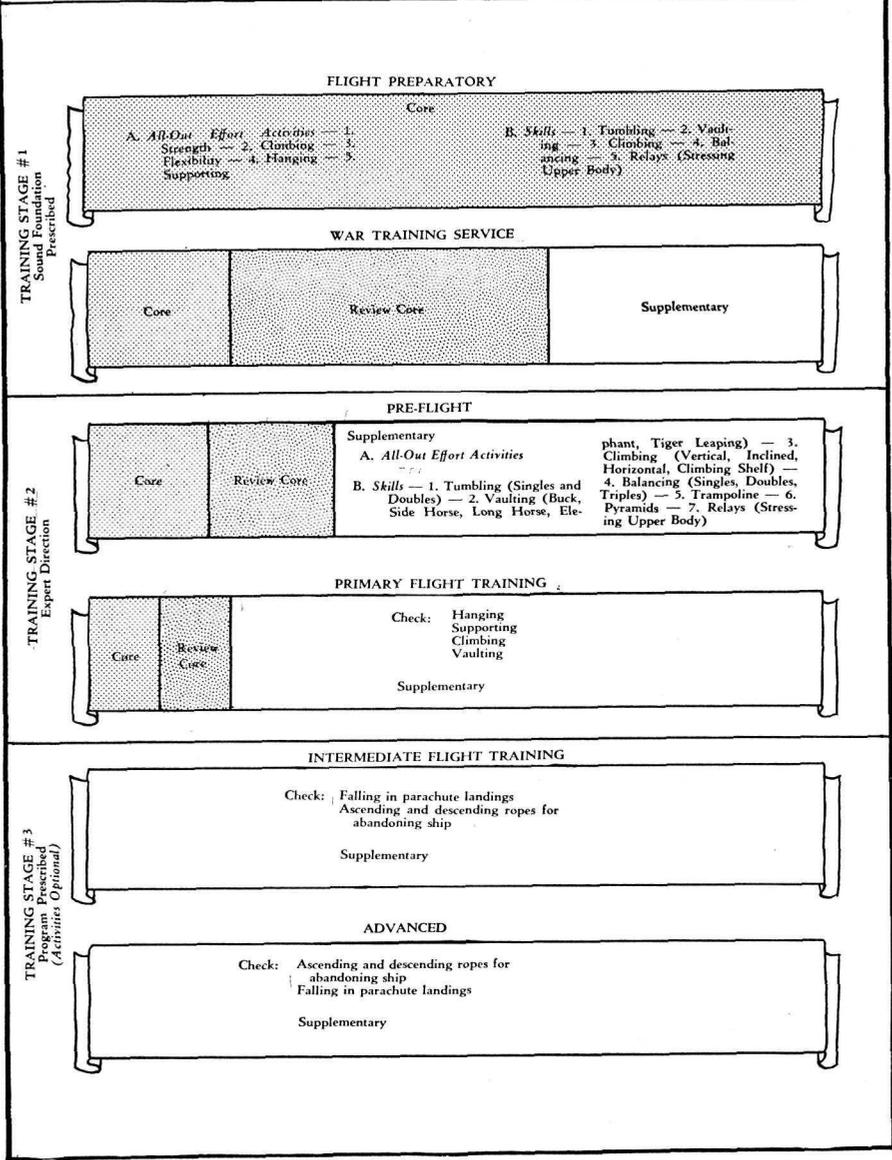
1. Less attention should be given to All-Out Effort Activities. Be sure that the biceps, the triceps, and the abdominals are given considerable attention to insure the safety of the performer.
2. The program should be planned with less formality.
3. An appropriate grade scale should be established.

APPENDICES

The Naval Aviation Gymnastic and
Tumbling Program

THE NAVAL AVIATION GYMNASTICS AND TUMBLING PROGRAM

The program develops in the cadet *all-out effort* and *skill* through the activities which constitute the program. These activities are established in terms of: I CORE II REVIEW CORE III SUPPLEMENTARY ACTIVITIES



The Naval Aviation Gymnastics and Tumbling Program

APPENDIX I

The Gymnastics and Tumbling lessons throughout the Naval Aviation Physical Training program have been planned progressively. All phases of the program should be conducted as closely as possible to stipulated lesson plans. However, it will be necessary to deviate somewhat from the general outline because of the needs and circumstances peculiar to a particular base. The results, therefore, will depend to a large extent upon the facilities, the time allotment, the previous background of the cadets and the available leadership.

The controlled progression of work ends at the Primary Flight Bases. At the Intermediate and Operational Bases the gymnastics and tumbling staff should carefully select the stunts that will motivate interest, stimulate the cadets, and contribute toward a realization of the objectives.

GENERAL PLAN FOR GYMNASTICS AND TUMBLING IN NAVAL AVIATION CADET TRAINING

The general plan must be sufficiently flexible in order to adapt it to unpredictable variations in equipment, space, time allotment and previous training of instructors. It must be rigid enough, however, to insure the desired outcomes; namely, the teaching of required minimum core activities which are divided into two main categories:

Core All-Out Effort (Strength) Achievement

Purpose—to increase individual proficiency in upper body strength. In addition, power, balance, agility, flexibility, and endurance are developed.

Core Skills and Events

1. Tumbling
2. Climbing
3. Balancing
4. Vaulting
5. Trampoline
6. Hanging and Supporting

Purpose—to increase individual proficiency in coordinated skills.

Core, Review Core and Supplementary Activities Defined

1. Core Activities

Core activities are the activities that must be taught in Gymnastics and Tumbling in the Cadet Physical Training Program.* These activities have been carefully

* In the training program for enlisted personnel the activities are differentiated as *basic* and *additional*.

selected to insure maximum cadet physical achievement within his scope of learning and also to insure a proper foundation for the more difficult skills which will follow further on in the program. Core activities are divided into two groups:

- a. Core All-out Effort (Strength) Achievement refers to activities such as chin-ning, pushups, half levers, squat jumps, requiring strength to perform.
- b. Core Skill and Events refer to activities such as forward roll, backward roll, head balance, etc., requiring coordination to execute. They are selected from balancing, tumbling, vaulting, hanging and supporting activities.

2. *Review Core Activities*

Review core activities are offered to insure mastery of previous skills and achievements and also to serve as a check on previous accomplishment of cadets coming from preceding schools.

3. *Supplementary Activities*

In addition to Core material, that is, material the instructor is *required to teach*, is a list of Supplementary (or optional) activities, which may be taught at the discretion of the instructor. The Supplementary material list gives flexibility to the program by allowing for:

- a. Differences in cadet achievement.
- b. Differences in time length of class periods.
- c. Difference in instructor experience.
- d. Difference in gymnasium equipment.
- e. Differences in size of teaching staff.

Scope of Gymnastics in Flight Preparatory Schools

1. Program is to be built from a list of core activities and a limited list of supplementary activities.
2. The stunts are described fully in the appendix of the syllabus.
3. A detailed lesson plan based on twelve 45 minute lessons and including all prescribed core activities and some supplementary activities is provided as a recommended program. Reasonable variations are permissible only if core activities prescribed for this phase of training are taught. However, no other material is to be taught which is not included either in the core list for Flight Preparatory Schools and the supplementary list for War Training Service Schools.

Scope of Gymnastics in War Training Service Schools

1. Program is to be built from: (1) a review of core activities scheduled to be taught at the Flight Preparatory Schools and (2) a small specific list of new core activities.
2. A detailed lesson plan based on ten 45 minute periods is included as a recommended program. The lessons contain review and variations but largely are comprised of Flight Preparatory and War Training Service supplementary activities. Variations from it are permissible if all core material is included and if the supplementary material is restricted to the list established for the Flight Preparatory and War Training Service Schools.

Scope of Gymnastics in Pre-Flight Schools

1. Program is to be built from: (1) a review of core activities from Flight Preparatory and War Training Service Schools' lists; (2) a list of the new core activities for Pre-Flight Schools; (3) all supplementary activities which the director of gymnastics wishes to include. The scope of supplementary activities is determined by Pre-Flight School facilities, staff, and previous training received by the cadet. Some of the supplementary material is described in the appendix of the syllabus. The section on the "Scope and Explanation of Supplementary Activities for Primary, Intermediate and Operational Bases" (P. 415).
2. A detailed lesson plan based on 45 minute periods is provided as a suggested program. Variations are permissible and expected if new core activities and review core activities are adequately taught and if supplementary activities are well organized, well planned and safely taught.

Scope of Gymnastics in Primary Flight Training

1. Program is to be built from: (1) a check on cadet proficiency in certain listed core activities; (2) a review of core activities for sub-standard group; (3) supplementary, determined by equipment and instructional experience, selected "Scope and Explanation of Supplementary Activities for Primary, Intermediate and Operational Bases" (P. 415).
2. Four model 45 minute lessons are given for guidance and reference in presentation and organization. The problem is largely one of organization since a competent staff will administer a sound program for cadets of varying ability. Variations are permissible if sub-standard cadets are given review on core activities and if the supplementary material is based upon the "Scope and Explanation of Supplementary Activities for Primary, Intermediate and Operational Bases" (P. 415).

Scope of Gymnastics in Intermediate and Operational Training

1. Because of the apparent impracticability of a continuous series and set number of lessons, no core activities will be required but supplementary (optional) activity based on the "Scope and Explanation of Supplementary Activities" (P. 415) will be offered. The practice of reviewing core activities when groups and individuals indicate need of review is not to be eliminated.
2. No suggested lesson plans are provided since the number and length of lessons are unpredictable quantities. Variations of other lesson plans may be adopted by the instructor.

GENERAL PLAN FOR GYMNASTICS AND TUMBLING IN OTHER
BRANCHES OF THE NAVAL AVIATION PROGRAM

Scope of Gymnastics for Officers on Shore Stations

1. Differences of age, condition, previous training and facilities demand a flexible program.
 2. A list of suggested material is included from which suitable activities may be selected. No lesson plans are suggested since the number and length of lessons are more or less unpredictable.
-

Scope of Gymnastics for Enlisted Men on Shore Stations

1. Program is to be built from a list of activities considered basic in all phases of aviation training, together with additional material.
2. The stunts are described fully in the syllabus appendix.
3. A detailed lesson plan based on twelve 60 minute periods includes all basic activities and some additional activities. Variations are permitted. No limit is placed on achievement.

Scope of Gymnastics for Officers and Enlisted Men Aboard Carriers

1. Program may be built from any suitable activity in the syllabus or Naval Aviation Manual.
2. Suggestions are offered for partner stunts and pyramids which require no equipment.
3. No lesson plans are offered because of different levels of ability.

Scope of Gymnastics for Officers on Foreign Stations

1. Program should be flexible depending upon the location and facilities available.
2. Suggestions are offered for construction of equipment from material on hand.

**MINIMUM GYMNASTIC EQUIPMENT FOR THE
VARIOUS STAGES OF TRAINING**

	Mats	Climb Ropes	Parallels	S. Horse	Vaulting Box	Rings	Horiz. Bars	Spring Board	Beat Boards	Trampoline	Balance Beam	Cargo Net	Parallels Low
Flight Prep	12 5×10	10			4				4		4		
W.T.S. Schools	12 5×10	10			4				4		4		
Pre-Flight	10—5×20 10—5×10	8	2	2	2	2	2	2	2	2	2	1	2
Primary	15 10×5	6	2	1	2	2	1	2	2	2	2		1
Intermed. & ea. Outlying Field	8 5×10	4	1	1		1	1	1	1	1			1
Operational	8 5×10	2	1	1	1	1	1	1	1	1			1

FLIGHT PREPARATORY SCHOOL PROGRAM

Core Activities**A. All-Out Effort Standards***

1. Strength

<i>Achievements</i>	<i>Purpose</i>	<i>Standard</i>
Chins	Biceps	5
Neck Pull-ups	Biceps	3
Dips	Triceps	4
Push-ups	Triceps	15
Extension Press-ups	Shoulder and Back	2 sec.
V Position	Abdominal	1 min.
V Roll	Abdominal	1
Leg Lifts, Sit-ups	Abdominal	20/20
Squat Jumps	Legs	30
Burpees	Legs and Back	20
Push-ups Slap Chest	Triceps	10

2. Climbing

Rope Climb	Climbing	20' rope in 15 sec.
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3. Flexibility

Trunk Extension	Flexibility	15"
Trunk Flexion		10"
Shoulder Flexibility		10"

4. Hanging

Skin the Cat	Hanging	1
Monkey Hang		1
Belly Grind		1

5. Supporting

Dips	Supporting	4
Squat Balance		Correct Form
Grasshopper Walk		1 Forward

B. Core and Supplementary Stunts

1. Core Stunts

<i>Balance</i>	Momentary hand balance and snap down
Frog head balance	Hand balance (modified or supported)
Frog hand balance	
Head balance	

* See p. 441 for requirements throughout all stages of training.

Singles Tumbling

Back roll from squat stand
Back roll from stand

Falls

Low jumps from platform
limited height 5'
(no roll)
Jump and roll
Twisting jumps
Twisting jumps and roll

Doubles Tumbling

Double roll forward
and backward (monkeyroll)

Doubles Balancing

Chest Balance on partner's back

Balance Beam

Seat Travels
Walk forward and backward
Run forward and backward
Sideward Walk
Pirouette

Vaulting

Jump to Stand
Squat Vault
Straddle Stand
Front Vault
Wolf Vault
Straddle Vault
Knee Stand Vault
Fence Vault
Thief Vault

Horizontal Climb on Pipes or Ropes

Hand follow hand
Hand over hand
Sloth Walk

Climbing Vertical Rope

Leg around secure
Leg around climb
Leg around descend
Cross leg shinny-up
Cross leg secure
Cross leg descend
Stirrup climb
Stirrup descend
Stirrup secure
Core (climb without legs)

Description of all core activities in the appendix (P. 441).

2. Supplementary Activities

If supplementary activities are desired they may be selected from the War Training Service School list on pages 383, 391. Core activities must be covered thoroughly before supplementary activities are used.

LESSON PLANS FOR FLIGHT PREPARATORY SCHOOLS

The Flight Preparatory School Gymnastics and Tumbling Instructor is responsible for the foundation upon which the entire cadet gymnastic training is to be built. The inherent benefits derived from gymnastics will depend, in a large measure, upon the quality of the training given at these schools.

The following lesson plans are suggested as a guide and can be altered to suit immediate needs. However, the following principles must be observed.

1. Muster procedure should not infringe on the gymnastic and tumbling time.
2. Warm up—About three minutes from each lesson should be devoted to warm-up or conditioning exercises by means of special exercises or review of the fundamentals previously covered. Cadets may execute movements at top speed upon command:

1. Stationary run!
2. On your belly!—Stand up!
3. Touch head to deck!—Stand up!
4. Fall forward—Squat!—Turn right! Turn left! Stand up!
5. Forward roll!—Backward roll!

Repeat series until group is thoroughly warmed up.

3. All material must be selected from core material outlined in the syllabus appendix, and supplementary material should be used only when the core material has been covered satisfactorily. Refer to War Training Service School supplementary list on pages 383, 391.
4. An effort should be made to include more than one gymnastic activity in each lesson. Emphasis should be placed on rope climbing.
5. Material must be arranged progressively from the simple to complex.
6. Competition is to be included in each lesson. It may cover:
 - A. Relays
 - (1) Rope Climbing
 - (2) Balance Beam
 - (3) Mimetic Locomotion
 - (4) Vaulting
 - B. All out effort Activity Contests.
 - C. Platoon achievement on the basis of the number of stunts checked off by platoons.
 - D. Stunts Contests
 - E. Gymnastic Meets
 - F. Obstacle Races Using Gymnasium Equipment or Cadets.
7. Time Allotment of Lessons—The time allotment for the various activities of the lesson plan has been set up in terms of (1) Specific, (2) Running Total and (3) Percentage.
 - (1) *Specific*—The actual number of minutes devoted to each activity based upon a forty-five (45) minute period.
 - (2) *Running Total*—The accumulative number of minutes for each activity.
 - (3) *Percentage*—The approximate percentage of time to be devoted to the various activities in case the period is longer or shorter than the regular 45 minute period.

Grading

Grading is done objectively. An efficient objective system of grading has many advantages and helps to insure the success of the program.

1. The cadet is constantly challenged to improve himself.
2. An incentive is provided for every cadet to accomplish more stunts.
3. Each cadet determines own grade.
4. A complete picture of the cadet's ability is presented.
5. Weekly grade is easily determined.
6. Improvement of the cadet may be noted. (Time saver)
7. A helpful guide for lesson planning.
8. It serves as a "check record" for cadets.
9. Guide for class organization and procedure.

10. Competition between platoons possible.
11. Platoon officers can assist as "checkers" of stunts. They become additional coaches.

Plan of Organization in the Administration of Grading

A. Controlled

Grading may be administered by checking off learned stunts on a composite grading sheet (see page 371) by the instructor and platoon cadet officers as assistants or when classes are small, by the instructor alone. This may be done by various methods.

1. A day set aside solely for grading. (See Flight Preparatory lesson plans)
2. A small part of each lesson.
3. Continually checking off stunts as they are learned during the class period.

B. Alternate

If classes are large and instructor personnel is limited, complete grades of all cadets in a minimum time may be obtained. The following is suggested:

Post the composite grade sheet on the bulletin board.

The individual cadet masters a skill to the satisfaction of the instructor who sends the cadet to the composite skill list and checks that skill off against his name. This procedure is a continuous one beginning with the first lesson and including the last. At the end of the Gymnastics and Tumbling Course each cadet can see what he has accomplished and his corresponding grade.

The above setup will undoubtedly accelerate competition among the cadets individually within the platoon.

GRADE SCALE

This grading scale is not standard. The grades represented herein are approximate and are subject to change according to the needs of each situation.

Activities Passed	Gr.	Activities Passed	Gr.	Activities Passed	Gr.	Activities Passed	Gr.
5	2.1	10	2.6	15-16	3.1	25-26	3.6
6	2.2	11	2.7	17-18	3.2	27-28	3.7
7	2.3	12	2.8	19-20	3.3	29	3.8
8	2.4	13	2.9	21-22	3.4	30	3.9
9	2.5	14	3.0	23-24	3.5	National Championship Calibre	4.0

APPENDIX
GRADE SHEET

GRADE SHEET		Extension Press (3 Seconds)	Half Lever (3 Seconds)	Chins (5)	Dips (4)	V Position (1 Minute)	Leg Lifts and Sit-ups (20 Each)	Squat Jumps (30)	Squat Balance (Touch knees once) or Squat Balance (30)	Push-ups (Slap chest 10 times)	Burpees (20)	Push-ups; body parallel to deck (20)	"V" Roll (1)	Neck Pull-ups (3)	Sit-ups (arch backs) (15)	Skip over leg forward	Rope Climb (20 Foot rope—15 secs.)	Three Forward Rolls into frog-head balance	Straddle Vault (4 Ft.)	Vaulting Routine (Side Horse)	Forward and Backward Roll See-Saw	Straight Head Balance (10 secs.)	Balance Beam—6 Pirouette Turns in succession	Skin the Cat (3)	Belly Grind (1)	Modified Hand Balance—head supported on rolled mat	New Records (Equivalent to two stunts)	Shoulder Flexibility (10 inches)	Trunk Extension (15 inches)	Trunk Flexion (10 inches)	First Week	Second Week
CO. _____	Plat. _____																															
Platoon Leader _____																																
First Wk. Tot. _____																																
Second Wk. Tot. _____																																
"Be Sure Men Are Spotted Correctly."																																
1st Week																																
CADET																																
1.																																
2.																																
3.																																
4.																																
5.																																
6.																																

ACTIVITIES—FIRST AND SECOND WEEK

1. Extension press-up (2 sec.)	17. Rope climb (20 ft. rope from stand using legs to top 15 sec.)
2. Half lever (3 sec.)	18. Three forward rolls into a frog-head balance
3. Chins (5)	19. Straddle vault (height 4 ft.)
4. Dips (4)	*20. Vaulting routine on side horse
5. V-Position (one minute)	*21. Forward and backward roll see-saw
6. Leg lifts and sit-ups (20/20)	22. Straight head balance (10 sec.)
7. Squat jumps (30)	23. Balance beam—six pirouette turns in succession
8. Squat balance touch knees (1)	24. Skin the cat (3)
9. Push-ups, slap chest (10)	25. Belly grind (1)
10. Burpees (20)	26. Modified hand balance—head supported on rolled mat
11. Push-ups: body parallel to deck and not touching, legs supported 12 to 16 inches off the deck (20)	27. New record equivalent to two new stunts
*12. V-Roll (1)	*28. Shoulder flexibility (10 inches)
13. Skip over leg (forwd.)	*29. Trunk extension (flexibility) 15 inches
*14. Neck pull-ups (3)	*30. Trunk flexion (flexibility) 10 inches
*15. Sit-ups (15)	
16. Squat balance (30 sec.)	

SKILLS AND EVENTS IN FLIGHT PREPARATORY SCHOOLS*

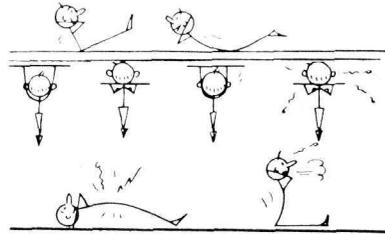
ALL-OUT EFFORT (STRENGTH WITH FLEXIBILITY) ACTIVITIES**

Strength

V-roll

Neck pull-ups

Sit-ups—Back arched

**Flexibility**

Shoulder flexibility—From a prone position on the deck, legs together and arms extended over head grasping wand with over grip, shoulder width—Keep chin on chest—Partner presses cadets hips to the deck and secures them there throughout the exercise—Cadet lying on the deck raises both arms from the shoulders as high as possible—Measure distance from deck to raised wand.



Trunk extension (Flexibility)—Starting position—Prone position as above—Partner presses down on hips of prone cadet and secures them to the deck throughout exercise—Cadet on deck raises trunk from the hips as high as possible—Measure distance from deck to chin



Trunk flexion (Flexibility)—Standing position—Sitting on the deck, legs apart and straight—Bend the trunk forward between the legs and as low as possible under own power, do not bounce trunk downward—Measure distance from deck to forehead.



Suggestions for administration of Flexibility tests; Place markings on wall either with adhesive tape or paint. These markings should be graduation of one inch starting from the deck and extending at least 20 inches high. The 10 inch and 15 inch line should be accentuated by coloring it or making it a thicker line than the others.

* Refer to p. 442.

** For other All-Out Effort Activities see pp. 308, 323, 391, 399, 441, 460.

Agility

Forward and backward roll, see-saw
 —From a crouch sitting position with hands in position for a forward roll, execute a forward roll to a crouch position with hands on the deck—Immediately execute a backward roll to a crouch position with hands on the deck ready for another forward roll.—This constitutes one see-saw roll.—The requirement of 5 see-saw rolls must be done without stopping after each roll



Vaulting routine—Side horse or vaulting box—Stand, facing the horse with the left hand on the left pommel and the right hand on the horse (if vaulting boxes are used, both hands will be placed on the box)—Vault through the hands using a squat vault—After hitting the deck with the feet, execute a half turn to the left, keeping the left hand on the pommel, grasp the right pommel, vault through with another squat vault—Again the feet hit the deck and a half turn to the right is made, keeping the right hand on the pommel—The left hand is placed on the horse and another squat vault is executed with a turn to the right after the feet hit the deck, remembering again to keep the right hand in contact with the pommel—Come to a position facing the horse with both hands on the pommels—From this position on the deck execute a straddle vault over the horse.



LESSON I

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Introduction to Gymnastics and Tumbling</i>	15	15	34
A. Purpose of Gymnastics and Tumbling in the Training Program of Naval Aviators			
B. Scope of Gymnastics and Tumbling in the Training Program of Naval Aviators (Flight Preparatory through Primary)			
C. Class organization and regulations peculiar to each particular situation.			
D. Spotting and assisting			
III. <i>Warm-up and All Out Effort Activity</i>	10	25	22
A. Push-ups, body parallel to deck and not touching, legs supported 12 to 16 inches off deck			
B. Leg lifts and sit-ups			
C. Shoulder flexibility exercises			
IV. <i>Gymnastics and Tumbling</i>	20	45	56
A. <i>Tumbling</i> (run relays with these stunts)			
1. Mimetic locomotion stunts			
2. Twisting jumps			
a. Stance—hands on hips, feet together. Hop length of mat			
b. Alter above, traveling diagonally across mat; right, left, right			
c. Traveling stride jumps			
d. Series of jumps over kneeling men. Divide squad into teams and run relay			
e. Jumps with $\frac{1}{4}$, $\frac{1}{2}$, and full turns			
f. Crab walk, forward, sideward and backward			
B. <i>Climbing—vertical ropes</i>			
1. Leg around secure			
2. Leg around climb			
3. Leg around descent			

LESSON II

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Burpees			
B. Sit-ups			
C. Chins			
D. Trunk extension (flexibility) exercise			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
III. <i>Gymnastics and Tumbling</i>	35	45	78
A. <i>Tumbling and Balance</i>			
1. Forward roll			
a. Crouch to stand			
b. Stand to stand			
2. Backward roll			
a. Crouch to stand			
b. Stand to stand			
3. Rolls in series			
a. Forward			
b. Backward			
4. Balance			
a. Frog head-balance			
b. Frog hand-balance			
B. <i>Vaulting</i>			
1. Jump to stand—dismount			
2. Squat vault			
C. <i>Climbing—vertical ropes</i>			
1. Review climbing of Lesson I			
2. New material			
a. Cross leg secure			
b. Cross leg shinny up climb			
c. Cross leg shinny descent			

LESSON III

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Extension press-up			
B. V-Position			
C. Trunk flexion and ham string flexibility exercises			
III. <i>Gymnastic and Tumbling</i>	25	35	56
A. <i>Tumbling and Balance</i>			
1. Review			
a. Series of Forward rolls			
b. Series of Backward rolls			
2. New Material			
a. Forward roll cross legs into backward roll			
b. Shoulder roll left and right			
(1) Crouch to stand			
(2) Stand to stand			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
3. Balance			
a. For review, combine balance with tumbling			
(1) Example—series of forward rolls into frog head-balance—same frog hand-balance or from frog head-balance roll forward			
B. <i>Climbing—vertical ropes</i>			
1. Review and drill on first two lessons			
2. Combinations of first two lessons			
a. Example—climb to top with cross leg shinny up, secure at top with leg around secure—descend using leg around			
IV. <i>Competition</i>	10	45	22
1. Seal walk—Relay			
2. Dead man's carry—Relay			

LESSON IV

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Push-ups Slap Chest			
B. Squat jumps			
C. Skip over leg forward			
D. Shoulder flexibility exercise			
III. <i>Gymnastics and Tumbling</i>	35	45	78
A. <i>Balance</i>			
1. Review			
2. Plain or straight head-balance			
B. <i>Balance Beams</i>			
1. Explain principles of balance			
2. Seat travels			
C. <i>Vaulting</i>			
1. Review previous lesson			
2. Knee stand vault			
3. Knee stand vault with turns			
D. <i>Climbing—vertical ropes</i>			
1. Review			
2. New Material			
a. Stirrup secure			
b. Stirrup climb			
c. Stirrup descent			

LESSON V

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Dips			
B. Neck pull-ups			
C. Trunk extension flexibility exercise			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. <i>Tumbling and Balance</i>			
1. Review			
a. Series of rolls—forward, backward, shoulder			
b. Combine in one series—forward, right and left shoulder roll			
Cross legs into a backward roll			
2. New material			
a. Falls			
3. Balance			
a. Review all previous balance skills and combine with tumbling			
B. <i>Climbing—vertical ropes</i>			
1. Review and drill in all previous climbing skills			
IV. <i>Competition</i>	10	45	22
A. Wheelbarrow walk relay			
B. Boat relay			

LESSON VI

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Practice on any or all the All Out Effort Activities covered thus far			
B. Trunk flexion and ham string flexion exercises			
III. <i>Gymnastics and Tumbling</i>	30	45	78
A. Testing in skills			
B. Checking off All Out Effort Achievements			

LESSON VII

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. V-Roll			
B. Squat balance, touch knees			
C. Half lever			
D. Shoulder flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	35	35	78
A. <i>Balance Beams</i>			
1. Standing Travels			
a. Walk across forward			
b. Walk across backward			
c. Side stepping across			
d. Hopping sideward			
e. Hopping forward on one foot			
f. Running across			
B. <i>Vaulting</i>			
1. Review			
2. Front vault—straddle stand, straddle vault			
C. <i>Climbing</i> —horizontal ropes, pipes or horizontal ladder			
1. Hand follow hand hang travel			
2. Hand over hand hang travel			
3. Sloth walking hang			
4. Hand and knees hang			
5. Elbow and knee hang			
6. Chinning			
7. Leg and hand swing up to side straddle seat			

LESSON VIII

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Push-up body parallel to deck but not touching, legs supported 12 to 16 inches from deck			
B. Leg lifts—sit-ups			
C. Trunk extension (flexibility) exercise			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. <i>Tumbling and Balance</i>			
1. Review material of other lessons			
2. New material			
a. Run and roll			
b. Jump and roll			
c. Jump twist and roll			
3. Balance			
a. Review			
b. Modified hand balance—partner assisted. Momentary hand balance and snap down			
B. <i>Climbing—vertical ropes</i>			
1. Review and drill			
IV. <i>Competition</i>	10	45	22
1. Crab walk relay (forward)			
2. Crab walk relay (backward)			

LESSON IX

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Chins			
B. Squat jumps			
C. V-Roll			
D. Trunk flexion and ham string flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	35	45	78
A. <i>Tumbling and Balance</i>			
1. Review			
2. New Material			
a. Double forward roll			
b. Double backward roll			
3. Balance—partner			
a. Chest balance			
B. <i>Vaulting</i>			
1. Review			
2. Fencers' vault, and wolf stand and wolf vault			
C. <i>Climbing—vertical or horizontal</i>			
1. Review			
2. New Material			
a. Climbing without legs			

LESSON X

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Sit-ups			
B. Neck pull-ups			
C. Shoulder flexibility exercise			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. <i>Balance Beams</i>			
1. Review			
2. New Material			
a. Travels in crouch position			
(1) Cat walk			
(2) Duck walk forward			
(3) Duck walk sideward			
b. Travels with turns in stand			
(1) Pirouettes			
B. <i>Climbing—vertical ropes</i>			
1. Review			
c. Climbing without legs			
IV. <i>Competition</i>			
A. Rope climbing			
B. Tandem walk relay			

LESSON XI

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Burpees			
B. Sit-ups			
C. Extension press-up			
D. Trunk flexion and ham string flexibility exercise			
III. <i>Gymnastics and Tumbling</i>	35	45	78
A. <i>Review all tumbling and balance</i>			
B. <i>Vaulting</i>			
1. Review all vaults			
C. <i>Climbing</i>			
1. Review all climbing and drill			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activity</i>	10	10	22
A. Review any of the all out effort activities			
III. <i>Gymnastics and Tumbling</i>	35	45	78
A. Testing in skills			
B. Checking off All Out Effort Achievements			

Competitive Relays*

Competitive Relays listed below are being used during the sports program at one of the Pre-Flight Schools. They are especially good for developing strength. The possible variations and combinations are almost unlimited. It is suggested that the instructor try these relays, re-using those which prove most challenging and interesting.

- | | | |
|-------------------------|----------------------|----------------------|
| 1. Chair obstacle relay | 10. Mat relay | 18. Three-man wheel- |
| 2. Chariot race | 11. Medicine ball (9 | barrow |
| 3. Crab crawl | lbs.) | 19. Back carry |
| 4. Double rescue | 12. Monkey walk | 20. Two-men carry |
| 5. Elephant walk | 13. Skin the cat | 21. Pilot hang |
| 6. Horse and rider | 14. Stroke the boat | 22. Dead man carry |
| 7. Horse walk | 15. Tandem walk | 23. Bar walk |
| 8. Human chair | 16. Tripod | 24. Pass and duck |
| 9. Inverted hang | 17. Tug of war | |

* Suitable relays may also be selected from Chapter XIV.

WAR TRAINING SERVICE SCHOOLS PROGRAM

Core Activities

A. All-out Effort Standards*

1. Strength

<i>Achievements</i>	<i>Purpose</i>	<i>Standard</i>
	Muscle Group	
Chins	Biceps	7
Neck Pull Ups	Biceps	5
Dips	Triceps	6
Push Ups	Shoulders and Back	25
Extension Press Up	Abdominal	3 sec.
V Position	Abdominal	1 min. 30 sec.
V Roll	Abdominal	3
Leg Lifts Sit Ups	Abdominal	25/25
Half Lever	Abdominal	4 sec.
Squat Jumps	Legs	40
Burpees	Legs and Back	25
Push-Up-Slap Chest	Triceps	15
2. Climbing		
Rope Climb (20')	Biceps	12 sec.
3. Flexibility		
Trunk Extension	Flexibility	15"
Trunk Flexion		10"
Shoulder Flexibility		10"
4. Agility		
Skip Over Leg	Agility	Forward and backward
5. Hanging		
Skin the Cat	Hanging	1
Monkey Hang		1
Belly Grind		2
6. Supporting		
Dips	Supporting	6
Squat Balance		Touch knees twice
Grasshopper Walk		Forward
Grasshopper Walk		Forward and 10 dips

* See p. 441 to show requirements throughout all stages of training.

REVIEW CORE AND SUPPLEMENTARY SKILLS

B. Stunts and Events

1. *Review Core (will teach)**Balance*

Frog Head
 Frog Hand
 Head Balance
 Head balance, arms folded
 Hand balance (modified or supported)
 Momentary hand balance snap down to stand

Doubles Tumbling

Double roll forward and backward (Monkeyroll)
 Balancing
 Chest balance on partner's back

Falls

Low jumps from platform limited height 5' (no roll)

Singles Tumbling

Forward roll
 Forward roll from stand
 Running forward roll
 Back roll from squat stand
 Back roll from stand with and without stand
 Jump and roll
 Twisting jumps
 Twisting jumps and roll
 Shoulder roll
 Mimetic locomotion

Balance Beam

Seat Travels
 Walk forward and backward
 Run forward and backward
 Sideward walk
 Pirouettes

2. *Supplementary**Balancing*

Arms folded (head balance)
 Press from squat to head balance
 Head in hands (elbow balance)

Climbing Vertical Rope

Leg around secure
 Leg around climb
 Leg around descent
 Cross leg shinny-up
 Cross leg secure
 Cross leg descent
 Stirrup climb
 Stirrup descent
 Stirrup secure
 Climbing without legs

Horizontal Climb on Pipes or Ropes

Hand follow hand
 Hand over hand
 Sloth walk
 Hand and knee hang
 Elbow and knee hang
 Chinning
 Leg and hand swing up to side straddle seat

Vaulting

Jump to stand
 Squat vault
 Straddle stand
 Front vault
 Wolf vault
 Straddle vault
 Knee stand vault
 Fence vault
 Thief vault

Forearm balance
 Forward roll to head
 Forward roll to head balance

Tumbling

Forward roll from frog hand balance
 Forward roll variations
 Back roll variations
 Lateral or side roll
 Roll combinations
 Fish flop
 Triple lateral rolls

Doubles

Limit to following:
 Swan balance
 Foot to hand
 Thigh mounts facing in and out
 Pyramids from above

Rope Climbing

Oblique Rope Climb
 Horizontal rope
 Inverted hang

Horizontal Ropes

Leg and hand swing up to front lying
 Backward circle up

Balance Beam

Balance Calisthenics
 Passing on beam
 Jump from beam to beam

Vaulting

Swan dive
 Vaulting routine

GRADE SCALE

Grading should be objective. A grade scale should be established. The grade scale below is not standard. The grades represented are approximate and are subject to change according to the needs of each situation. A sample grade sheet is shown on page 371, 403.*

Activities Passed	Gr.	Activities Passed	Gr.	Activities Passed	Gr.	Activities Passed	Gr.
7	2.1	12	2.6	17-18	3.1	27	3.6
8	2.2	13	2.7	19-20	3.2	28	3.7
9	2.3	14	2.8	21-22	3.3	29	3.8
10	2.4	15	2.9	23-24	3.4	30	3.9
11	2.5	16	3.0	25-26	3.5	Nat. Champ. Calibre	4.0

ACTIVITIES—FIRST AND SECOND WEEK

1. Extension press up (3 sec.)	17. Rope climb (20 ft. rope from stand using legs to top 12 sec.)
2. Half lever (4 sec.)	18. Three forward rolls into a frog-head balance
3. Chins (7)	19. Straddle vault (height 4 ft.)
4. Dips (6)	**20. Vaulting routine on side horse
5. V-Position (one min. and 30 sec.)	**21. Forward and backward roll see-saw
6. Leg lifts and sit-ups (25/25)	22. Straight head balance (12 sec.)
7. Squat jumps (40)	23. Balance beam—six pirouette turns in succession
8. Squat balance touch knees	24. Skin the cat (4)
9. Push-ups, slap chest (15)	25. Hip pull over belly grind (3)
10. Burpees (25)	26. Modified handstand—head supported on rolled mat
11. Push-ups: body parallel to deck and not touching, legs supported 12 to 16 inches off the deck (25)	27. New record equivalent to two new stunts
**12. V-Roll (3)	**28. Shoulder flexibility (10 in.)
13. Skip over leg (forward and backward)	**29. Trunk extension flexibility (15 in.)
**14. Neck pull-ups (5)	**30. Trunk flexion flexibility (10 in.)
**15. Sit-ups arched back (20)	
16. Squat balance (30 sec.)	

* Refer to p. 371, 403.

** See pp. 372 and 441 for description of events.

LESSON PLANS FOR WAR SERVICE TRAINING SCHOOLS

The lesson plans are mainly a review of core activities prescribed for Flight Preparatory.

The following lesson plan is suggested as a guide but may be adapted to different situations.

LESSON I

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Push-ups			
B. Leg lifts and sit-ups			
C. Shoulder flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	34
A. Tumbling and balance (review)			
1. Forward roll			
a. Crouch to stand			
b. Stand to stand			
2. Backward roll			
a. Crouch to stand			
b. Stand to stand			
3. Rolls in series (3 rolls)			
a. Forward			
b. Backward			
4. Balance			
a. Frog head balance			
b. Frog hand balance			
B. Vaulting (review)			
1. Jump to stand—dismount			
2. Squat vault			
C. Climbing—vertical ropes (review)			
1. Cross leg secure			
2. Cross leg shinny up climb			
3. Cross leg shinny descend			
IV. <i>Competition</i>	10	45	22
A. Human chain relay			
B. Duck walk			

LESSON II

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	11	22
A. Burpees			
B. Sit-ups			
C. Chins			
D. Trunk extension (flexibility) exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Series of forward rolls (review)			
2. Series of backward rolls (review)			
3. Roll forward from Frog hand balance			
4. Plain head balance (review)			
B. Climbing—vertical ropes			
1. Climb to top with cross shinny up, secure at top with leg around, secure descend using legs			
IV. <i>Competition</i>	10	45	22
A. Seal Walk relay			
B. Duck Walk relay			

LESSON III

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Extension Press-ups			
B. V-Position			
C. Lower back flexibility and ham string flexibility exercise			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Forward roll to head balance (review)			
2. Backward roll variations			
3. Head balance, arms folded			
4. Lateral or side roll			
B. Climbing			
1. Review previous lesson			
a. Stirrup secure			
b. Stirrup climb			
c. Stirrup descend			
IV. <i>Competition</i>	10	45	22
A. Seal Walk relay			
B. Crab Walk relay			

LESSON IV

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Push-ups slap chest			
B. Squat jumps			
C. Skip over leg forward and backward			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Head balance with head in hands (elbow balance)			
2. Hand balance (modified or supported)			
3. Lateral or side roll (review)			
B. Balance beam			
1. Seat travels (review)			
2. Walk forward and backward (review)			
C. Vaulting			
1. Knee stand vault (review)			
2. Squat vault (review)			
D. Climbing vertical ropes			
1. Review and drill all previous climbing skills			
E. Horizontal ropes			
1. Leg and hand swing up to side straddle seat (review)			
2. Chinning (review)			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Crab walk relay			

LESSON V

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Dips			
B. Neck pull-ups			
C. Trunk extension flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Thigh mounts facing in and out			
2. Fish flops			
3. Press from frog to plain head balance			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
B. Balance beam			
1. Run forward and backward (review)			
2. Sidewalk walk			
C. Vaulting			
1. Squat vaults with turns			
2. Low front vault, right and left			
D. Climbing—vertical			
1. Review and drill all previous climbing skills			
E. Horizontal ropes			
1. Leg and hand swing up to side straddle seat (review)			
2. Leg and hand swing up to front lying			
IV. <i>Competition</i>	10	48	22
A. Rope climbing			
B. Monkey walk relay			

LESSON VI

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Practice all previous work covered so far			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Double roll forward (review)			
2. Chest balance on partner's back (review)			
3. Forearm balances			
B. Balance beam			
1. Sideward walks			
2. Passing on beam			
3. Jump from beam to beam			
C. Vaulting			
1. Straddle vault (review)			
2. Fence vault (review)			
3. Swan dive			
D. Climbing—vertical			
1. Review and drill all previous climbing skills			
E. Horizontal ropes			
1. Leg and hand swing to front line			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Bear walk relay			

LESSON VII

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. V roll			
B. Squat balance touch knees			
C. Half lever			
D. Shoulder flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Double roll forward and backward (review)			
2. Swan balance (review)			
3. Forearm balance (review)			
B. Balance beam			
1. Sideward walk (review)			
2. Passing on beam (review)			
3. Balance calisthenics			
C. Vaulting			
1. Straddle vault (review)			
2. Wolf vault (review)			
3. Series of squat vaults			
D. Climbing—vertical ropes			
1. Review and drill all previous climbing skills			
E. Horizontal ropes			
1. Leg and hand swing up to front lying			
2. Back circle up			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Wheelbarrow relay			

LESSON VIII

I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Push-ups—legs supported 12 to 16 inches from deck			
B. Leg lifts—sit-ups			
C. Trunk extension flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Double rolls forward and backward			
2. Foot to hand balance			
3. Forearm balance			
4. Pyramids			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
B. Balance beam			
1. Balance calisthenics			
2. Jump from beam to beam			
3. Passing on beam			
C. Vaulting			
1. High front vault			
2. Series of squat vaults			
3. Thief vault			
D. Climbing vertical ropes			
1. Review and drill all previous climbing skills			
E. Horizontal			
1. Leg and hand swing up to front lying			
2. Back circle up			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Straddle vault for height			
LESSON IX			
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Climb			
B. Squat jumps			
C. V-Roll			
D. Trunk flexion—hamstring flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Forearm balance			
2. Foot to hand balance			
3. Pyramids			
B. Balance beam			
1. Balance calisthenics			
2. Jump from beam to beam			
3. Pirouette			
C. Vaulting			
1. Straddle vault			
2. Swan dive catch			
3. Thief vault			
D. Climbing			
1. Review and drill all previous climbing skills			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Head wrestling on balance beam			

LESSON X

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. <i>Muster</i>			
II. <i>Warm-up and All Out Effort Activities</i>	10	10	22
A. Sit-ups			
B. Neck pull-ups			
C. Shoulder flexibility exercises			
III. <i>Gymnastics and Tumbling</i>	25	35	56
A. Tumbling and balance			
1. Review all previous skills			
B. Balance beam			
1. Jump from beam to beam			
2. Balance calisthenics			
3. Pirouette			
C. Vaulting			
1. Series of squat vaults			
2. Thief vault			
3. Swan dive catch			
D. Climbing			
1. Review and drill all previous climbing skills			
IV. <i>Competition</i>	10	45	22
A. Rope climbing			
B. Head wrestling on balance beams			

Competitive Relays*

SUPPLEMENTARY ACTIVITIES FOR WAR TRAINING
SERVICE SCHOOLS

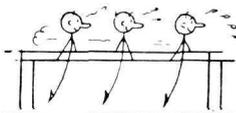
ALL OUT EFFORT (STRENGTH WITH FLEXIBILITY) ACTIVITIES

Preparatory and strength activities should be first introduced on the parallel bars and high bar. If these pieces of apparatus are available the following activities may be used.

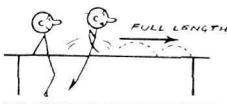
* See Chapter XIV.

Parallel Bars*

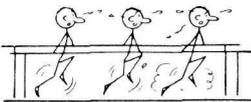
Support—Hand-over-hand walk forward—Keep chest out and head up



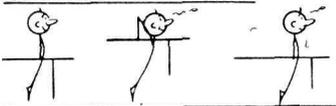
Support—Hop forward with the hands moved simultaneously



Support—Hand-over-hand forward and the legs flexed simultaneously—Ride a bicycle with legs



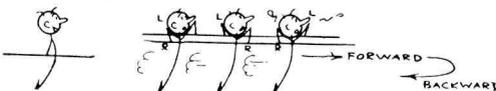
Dips—Flex arms so chin is even with bars—Arch back



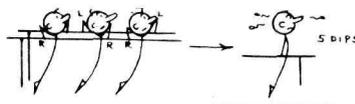
Swinging dips



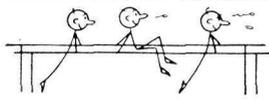
Grasshopper walk—(Bent arm position)



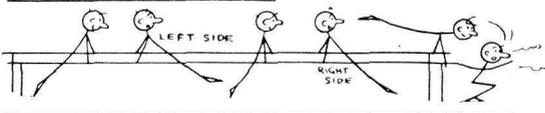
Grasshopper walk and five dips



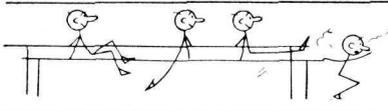
Straddle-seat—Series of straddle seats



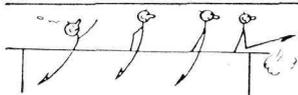
Single straddle-seat to center of bar and front dismount



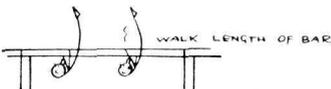
Single straddle-seat to center of bar and rear dismount



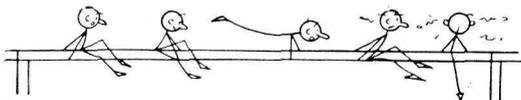
Jump to cross-support in center of bars. Lift legs to half lever position



Hang walk



Swing to side seat on left bar—Swing to side seat on right bar

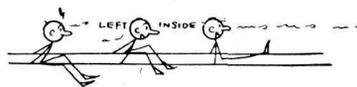


* See Chapter VIII, p. 110. Also pp. 59, 61, 63, 68, 69, 274, 300, 316, 319, 332.

Skin the cat—Bring the toes as close to the deck as possible

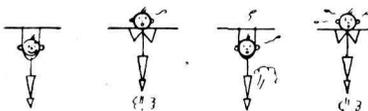


Inside cross-seat in front of left hand—Inside cross-seat in front of right hand—Dismount over right bar

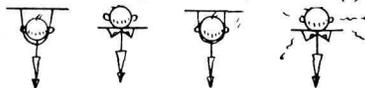


*High Bar**

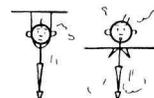
Chins—(Ordinary)



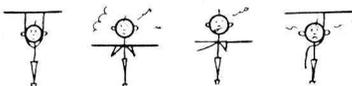
Chins—"Wide grasp—Pull up to back of neck"



Chins—Ordinary grasp—Pull up to chest



Chin (When in full chin position release one arm and hold body up with one arm)



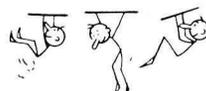
Chin (Grasp wrist of chinning arm)



Chin (Grasp bicep of chinning arm)



Skin the cat—From hang bring legs up through the arms and then back.



Belly grind—From hang pull legs over top of bar and then body.



Monkey hang—Do a skin the cat—Then release one arm and swing a complete turn on one arm and then regrasp.



Combinations—Do a skin the cat, then a monkey hang, then a belly grind, then a monkey hang, etc.



* See Chapter VIII, p. 97. Also pp. 59, 66, 69, 271, 299, 315, 319, 329, 457.

PRE-FLIGHT SCHOOL PROGRAM

Core Activities

A. All-out Effort Standards*

1. Strength

<i>Achievements</i>	<i>Purpose</i>	<i>Standard</i>
	Muscle Group	
Chins	Biceps	10
Neck Pull-Ups	Triceps	8
Dips	Triceps	12
Push-ups	Shoulders and Back	40
Extension Press-Up	Shoulders and Back	5 sec.
V-Position	Abdominal	2 min.
V-Roll	Abdominal	5
Leg Lift, Sit-Ups	Abdominal	35/35
Half Lever	Abdominal	5 sec.
Squat Jumps	Legs	60
Burpees	Legs and Back	40
Push-Up-Slap Chest	Triceps	25
2. Climbing		
Rope Climb (20')	Biceps	10 sec.
3. Flexibility		
Trunk Extension	Flexibility	15"
Trunk Flexion		10"
Shoulder Flexibility		12"
4. Agility		
Skip Over Leg	Agility	Forward and Backward (2)
5. Hanging		
Skin the Cat	Hanging	5
Monkey Hang		1
Belly Grind		4-6
6. Supporting		
Dips	Supporting	12
Squat Balance		Touch Knees (2)
Grasshopper Walk		Forward and Backward
Grasshopper Walk		Forward and 10 Dips

* See p. 441 for requirements throughout all stages of training.

B. Stunts and Events

Should include new core, review core, and supplementary activities*

Core

Balance

- Forearm balance
- Backward roll to head balance
- Hand balance
- Hand walk

Singles Tumbling

- Dive and forward roll from stand and from run
- Back extension roll
- Jump from platform and forward roll
- Head spring, hand spring, shoulder spring or snap up
- Principles of break-falling forward and backward

Climbing Vertical Rope

- Standing tie-in
- Sitting tie-in
- Hand over hand climb
- Climbing shelf, arm and leg mount still
- swinging
- Dismounts
- Reverse hip circle
- Seat, turn to front rest, lower to hang
- High straddle

Trampoline

- Controlled bounce
- Sit drop
- $\frac{3}{4}$ forward turnover piked
- $\frac{3}{4}$ forward turnover tucked
- Low back drop
- Low front drop

Scope of Supplementary Activities in Pre-Flight Schools

Supplementary material will be drawn from the experience of the expert gymnastic staffs at these schools. This supplementary material may be adapted to the ability level of the cadet if such a plan is thought feasible by the director at each Pre-Flight School.

Lesson Plan for Pre-Flight Schools

The lesson plans are made up of Review core stunts, new core stunts, and supplementary activities. The following lesson plan is suggested as a guide but may be adapted to different situations. The lessons for the gymnastics and tumbling program are set up from the activities listed on the following pages:

GRADE SCALE**

Activities Passed	Grade	Activities Passed	Grade	Activities Passed	Grade	Activities Passed	Grade
0	2.1	5	2.6	10-11	3.1	20-21	3.6
1	2.2	6	2.7	12-13	3.2	22-23	3.7
2	2.3	7	2.8	14-15	3.3	24-27	3.8
3	2.4	8	2.9	16-17	3.4	28 or over	3.9
4	2.5	9	3.0	18-19	3.5	Championship Calibre	4.0

* See scope of supplementary activities on page 415.

** See p. 403.

SKILLS AND EVENTS IN THE PRE-FLIGHT SCHOOL PROGRAM

- I. TUMBLING
- II. CLIMBING
- III. ALL-OUT EFFORT ACTIVITIES
- IV. VAULTING
- V. BALANCING
- VI. JUMPS AND STUNTS
- VII. APPARATUS STUNTS (Supporting & Hanging)
- VIII. COMPETITION
- IX. TRAMPOLINE

I. TUMBLING*

Standing dive and roll—Run and small dive and roll



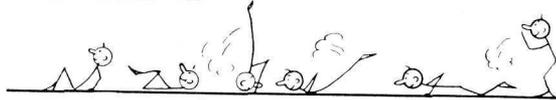
Dive and roll over obstacle



Arch down from head balance



Fish flops



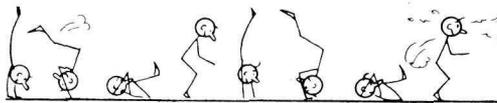
Backward somersault pitch



Backward roll to momentary hand balance and snap down



Hand balance, forward roll



Cartwheel

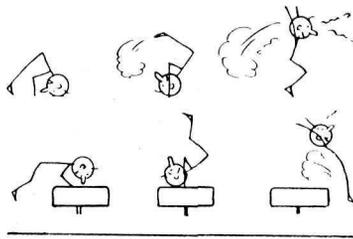


Handspring and headspring



* See pp. 69, 77, 83, 216, 307, 316, 319, 373, 400, 401, 442, 444, 455.

Snap-up



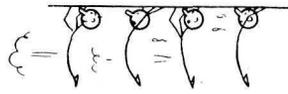
Neck spring or shoulder spring

II. CLIMBING*

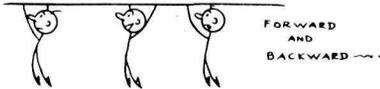
A. Ropes

1. Horizontal

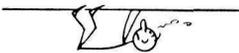
Travel—Hand follow hand



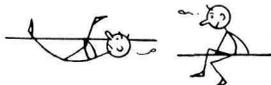
Travel—Hand over hand



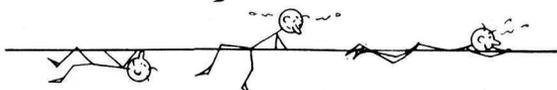
Travel—Hand and leg



Side seat



Front lying—20' rope climb in 10 sec.



2. Oblique

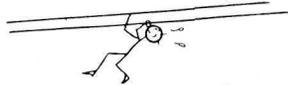
Climb—Hands only



Climb—Hands and Legs



Climb two ropes—Hands only



Front lying position



Inverted hang



3. Vertical

20' climb

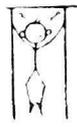


* See pp. 168, 305, 310, 334, 442.

Inverted hang



Climb two ropes

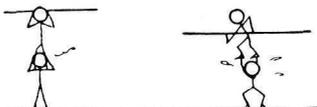


B. Climbing Shelf Drills*

1. Spot at all times directly under climber.

2. Partners (Assists to shelf) A, top man; B, bottom man.

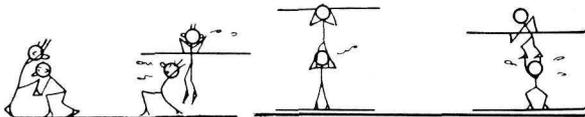
Feet to shoulder



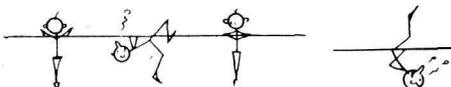
One leg toss from the rear



Pitch to shelf—Lifting man on to shelf—(1) One leg lift; assist by A—(2) Pitch; assist by A—(3) Two high; assist by A—(4) Waist lift; assist by A



Methods of getting on shelf—(1) Two hand press (Wrist in false grip)—(2) Two hand grasp; bring one leg on shelf and swing free leg downward—(3) Two hand grasp pull-up and bring elbow on shelf and press to top of shelf—(4) Back hip circle



Getting down from shelf—(1) Sitting and jumping (Landing on feet and rolling)—(2) Sitting and turning to front leaning rest then lower to deck—(3) Lower down by top man—(4) Forward hip circle dismount



C. Cargo net up and down

Cargo net suspended from ceiling, climb up and down; set your own time

* See p. 311.

III. ALL OUT EFFORT ACTIVITIES*

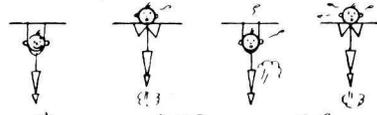
Extension press-up



Half lever



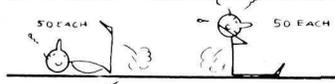
Chins



Dips



Leg lifts and sit-ups



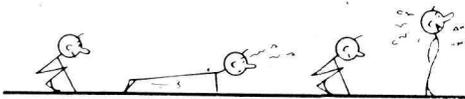
V position forward and backward. Hold left toe with right hand and skip once over the leg. Skip over leg.



Push-ups, slap chest



Burpees



Squat jumps



IV. VAULTING (*Buck or Horse*)**

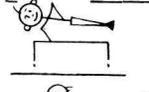
Straddle vault



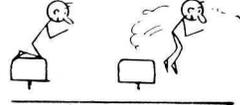
Front vault



Flank vault



Knee dismount vault



Wolf vault



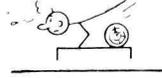
* See pp. 323, 372, 391, 441, 460.

** See pp. 140, 142, 155, 158, 163.

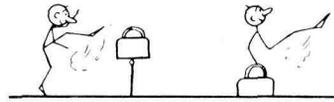
Squat vault



Height vault



Thief vault



Dive and catch



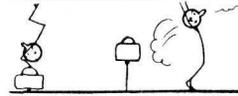
Forward roll vault



Neck spring



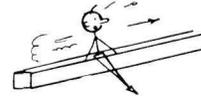
Bent arm handspring



V. BALANCING

A. *Balance Beam**

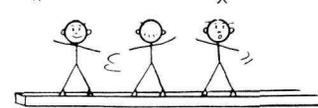
Side seat



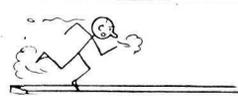
Walk forward



Turn—Turn walk one-half way



Run length of beam



B. *Inverted Balancing***

Head balance



Squat balance—Touch knees 4 times



* See pp. 212, 309, 446, 459.

** See pp. 78, 184, 445.

Forearm balance



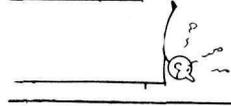
Backward roll to head balance



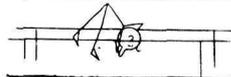
Head balance 10 sec.



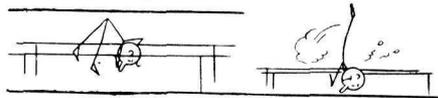
Hand balance, low parallel bars



Shoulder balance



Hand balance—same as above



VI. JUMPS AND STUNTS*

Frog jump



Squirrel jump



Seal crawl



Elephant walk



Duck walk



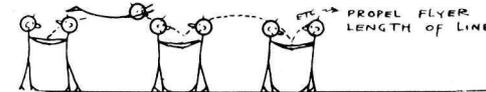
Crab walk



Sit through arms



Dead man pass



Parallel rolls

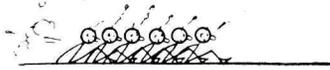


Sink the ship—Two teams—One team forms a ship; opposite team runs and vaults on top of ship trying to sink it—If ship sinks or other team member touches deck then alternate procedure.



* See p. 214.

Boat relay—Team in sitting position; each man puts feet in lap of the man in front; use hands and buttocks to move forward—Front man may use feet; line must not break.



Hip swing-ups, 6
(Belly grinds)



Kip on high bar



Tandem walk



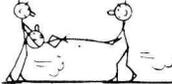
Wheelbarrow



Inverted hand walk



Dead man's carry



Parachute agility



Competition is to be included in each lesson. It may cover:

A. Relays

- (1) Rope climbing
- (2) Balance beam
- (3) Mimetic locomotion
- (4) Vaulting

B. All Out Effort Activity Contests

C. Platoon competition on the basis of checking off stunts

D. Stunts contents

E. Gymnastic meets

F. Obstacle races using gymnasium equipment

IX. TRAMPOLINE (Refer to Chapter XI, p. 239)

LESSON I

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
A. General Instructions and Introduction to Course—5 minutes	5	5	11
1. General information for cadets			
a. Leave shoes on gear rack			
b. Keep shirts on for protection			
c. Keep socks on for sanitary reasons			
d. Meet in semi-circle and bear a hand when called.			
e. Brief review of apparatus nomenclature and repeat parts daily			
f. Explain briefly class procedure of All-Out Effort Activities			
g. Mention records so that the above-average performer can plan his work his work accordingly. Every record broken is equivalent to two stunts			
h. Performer who can do a stunt not listed but worthy of getting credit may ask for credit from the instructor			
i. Cadets should use weights, wrist twist, inclined board, etc., during squad work while waiting their turn to perform			
j. Introduce Grade Scale and explain in the importance of passing the All-Out Effort Activities given throughout the week			
B. All-Out Effort Activities	10	15	22
1. Stress Development of Strength of specific muscle groups			
a. Chins—10			
b. Dips—12			
C. Rope Climbing	10	25	22
1. Short talk relative to importance of rope climbing in their future Naval Aviation career			
2. Stress the following items and practice:			
a. Climb rope hand over hand			
b. Descend rope hand under hand			
c. Use of stirrup in descending. Rope passes along side of body under the near foot and over the far foot			
d. Locks or rests on rope			
(1) Foot and leg lock. Rope passes around one leg and across instep. Step on rope over instep with other foot			
(2) Single leg seat. Cadets attempt single leg seat and stirrup descent			
(3) The weaker individual may get preliminary practice on the climbing poles			
3. Cargo Net is a second week activity. The rope climb prepares individual for cargo net			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
D. Natural Gymnastics (all squads work on tumbling mats)	10	35	22
1. Travel length of mat. Choose from following jumps			
a. Hop step, hop step, etc. Hop on same foot, lead up for handspring			
b. Four walking steps, then hop step, repeat			
c. Broad jump. Jump up with full turn, broad jump, etc.			
d. Broad jump, forward roll, frog jump, forward roll, etc.			
e. Frog jump			
f. Frog jump, forward roll, frog jump, forward roll, etc.			
g. Squirrel jump			
h. Elephant walk			
i. Seal crawl			
j. Duck walk			
k. Running on all fours			
l. Prone position, arms straight, hop forward on hands			
m. Prone position, arms straight, hop on hands and feet			
n. Jump over man in kneeling position, then get down (like leap-frog without hands)			
E. Relays*	10	45	22
1. Relay, using any of the above stunts			
Mass stunts as "Sink the Ship." One group lines up with hands around mans waist in front of him. All bend forward. Second group leap upon their backs in an effort to break through the line			

LESSON II

A. General Instructions	5	5	11
1. General Information for Cadets			
a. Activities may be passed any day			
b. Additional activities will be given from day to day			
2. Safety Hints			
a. Demonstrate different kinds of grasps on high bar			
b. Only one swing for each trick, beginners dismount on back swing only, thumbs should be around bar			
c. Explain spotting on high bar. (Proper grasp! Always follow your thumb in any event)			
d. Demonstrate spotting on parallel bars, arms under, never over			
e. Demonstrate swing from shoulders back arched			
f. Mention flying rings, mounts, and dismounts, spotters: Front, Middle and Back			

* For competitive relays see Chapter XIV, p. 349.

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
B. Climbing Ropes	5	10	12
1. Vertical Ropes			
a. Climb using hands and feet			
b. Single leg seat and stirrup descent			
C. All-Out Effort Activities	10	20	21
1. Demonstrate and try new stunts			
2. Demonstrate extension press-up. Cadets try. Must hold 5 seconds. If they are having any difficulty have them work from the elbows until they are finally able to do the press			
3. Demonstrate the half-lever. Cadets try, must hold 5 seconds; if they are having difficulty, work from a height. Legs are to be higher than hips.			
4. Demonstrate head balance, 10 seconds. Cadets attempt			
NOTE: Tests of future days for the more advanced students may be presented. (Especially for large platoons in which the proportion of better performers is higher)			
D. Tumbling and Balance	15	35	34
1. Rolls: Forward, backward and combinations. Also introduce the dive and a series of cartwheels			
2. Jump into the air; execute $\frac{1}{2}$ turn; $\frac{3}{4}$ full			
3. Prone; push-ups; clap hands once; then twice			
4. Sit through arms from front leaning rest and outside arms from front leaning rest.			
5. Crab walk forward; down left side of mat; back up right side in continuous line			
6. Crab walk backward; stress keeping buttocks up			
7. Dead man's pass. Cadets opposite hold hands; pass one cadet down line			
8. Cadets lie on top of one another in opposite directions; grasp ankles with hands and roll			
9. Triple rolls			
10. Horse and rider			
11. Wheelbarrow			
12. Tandem walk (four hands, two feet)			
13. Inverted hang—One man does a hand balance on other man's feet; up-right man grasps second man's legs; walks down mat and back.			
14. Dead man carry—Man prone and rigid, other two men grasp his feet and head; carry him down mat and back; changing men at each end of mat			

Time Allotment

*Specific
Total
Percent*

- 15. Camel walk—Man under; man on top; crawl
- 16. Fireman's carry—Change at end of mat
- 17. Human hurdles—Half the cadets lie prone; feet together, at right distance apart. The other half raise knees high and run by stepping over their legs. On the return trip they step over backs. For further variation have cadets that are lying down spread the legs so their feet touch the partner next. This is for cross step. This may be worked face upward and on hands and knees
- 18. Have squads one and two stand facing each other; three and four doing the same. Squad one put right or left leg in hands of man opposite forming a tunnel. Each man goes through with back parallel to deck, etc. Relay against squads. When reach end, keep forming tunnel to ends of mat

NOTE: Two or more rows of tumbling mats. Squads one and two on one side of mats. Squad three and four on opposite side of mats. Work accross the mats whenever possible, e.g., rolls balance, etc.

E. Relays	10	45	22
1. "Sink the Ship"			
2. Boat Relay			
3. Leap frog and its variations			

LESSON III

A. General Instructions and All-Out Effort Activities	45	15	34
1. "V" position (two minutes)			
2. Six belly grinds			
3. Grasshopper walk and 10 dips			
4. Skip over leg			
5. Forearm balance (10 seconds)			
B. Climbing	7	22	16
1. Climb hands and feet (19 feet)			
2. Climb hands only (19 feet)			
3. Make fast and rest			
C. Balancing and Tumbling (Squad)	20	42	43
1. Front safety fall			
2. Fall and sit through roll over and repeat			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
3. Agility turn (Front fall, right leg flexed, pivot and turn to front leaning rest)			
4. Front fall, legs extended; full pivot to front leaning rest			
5. Balance on toes; eyes closed; hands above the head; left foot on floor; right foot extended; raise to left toe; eyes closed; try to hold balance for 15 seconds.			
6. Ham-string (2 men: A sitting; legs straight. B standing behind him pushes A's back until head touches knees. A keeps hands on knees to force knees straight)			
7. Stretch lower back; same position as 6, down man grasps ankles with knees bent; same procedure			
8. Tough hurdle. Hurdle position; front leg right angle to the body; bend the trunk backward. Second man straddles leg of first man; arm between the hurdler's arms for a safety position			
9. Dead man's lift. Two men; supine on deck; head to head; A rigid; hands at side; B grasps A's head raising him to arm's length position over B's head. (Series of arm push-ups)			
10. One man pull-ups; A prone; B straight; A in spread leg position. Top man's arms straight; lower man grasps wrists of top man; do series of 20 pull-ups			
11. Three man lift. A prone; B standing at A's feet; C standing at A's head; lift A to chest level; change hand grasps; push hard and lift A above heads. Safety man kneels below A.			
12. Mass-jumping. Three men kneeling grasp hands. Three men behind with hands grasped jump over kneeling men; take one step forward and kneel. Third group jump over first two kneeling groups, etc. (Later raise height of jump)			
13. Work in pairs. Two men back to back; sit down and stand up; still remaining back to back (5 times)			
D. Squat Jumps	3	45	7
1. All cadets attempt 40 squat jumps, last 3 minutes			

LESSON IV

A. General Instructions and All-Out Effort Activities..	5	12	11
1. Push-ups and slap chest—25			
2. Push-ups—40			
3. Leg lifts and sit-ups			
E. Balancing	10	15	22
1. Demonstrate and attempt:			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
a. Backward roll to head balance			
b. Backward roll to hand balance and snap down			
c. Hand balance—work in pairs			
C. Tumbling	6	21	13
1. Break falls. Types of falls:			
a. Falling forward—catch fall, arms extended. Upon landing on hands flex arms, turn head to one side and cushion body to the mat			
b. Backward roll to quick 1/2 turn to front break fall			
c. Falling backward—fall backward, chin on chest. Catch fall with the hands. Point fingers forward, not backward. Arch the back; bend knees slightly			
d. Forward, backward and sideward rolls			
D. Climbing (Horizontal Ropes)	5	26	11
1. Travel—Hand follow hand hanging			
2. Travel—Hand over hand			
3. Travel—Hand and leg hanging			
4. Chinning on ropes			
E. High Bar (Squads 1 and 2)	8	34	18
1. Teach correct grasps and significance of the grasp			
2. Teach hip swing up			
3. Short underswing dismount after hip swing up			
4. Proper method of swinging			
5. Teach dismount on back end of swing			
F. Parallel Bars (Squads 3 and 4) (Travels)	8	42	18
1. Mount bars, walk length of bars, arms straight			
2. Mount bars, walk length of bars backward, arms straight			
3. Inverted or monkey hang position, walk length of bar. (Try the above backwards)			
4. Hand under the bar; travel length, legs in bicycle position			
5. Mount bar; cross riding seats over both bars			
6. Hand under the bar; travel length, legs up, knees to chest			
7. Hand under the bar; travel length, right knee to chest, left leg straight out			
8. Hand under bar; travel length, both legs straight out in front			
9. Mount top of bars, hop across bars, arms straight			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
10. Mount top of bars; drop to bent arm hang (grasshopper) position and walk length of bar			
11. Mount top of bars; drop to bent arm hang (grasshopper) position and hop length of bar			
12. Finish with vaults at graduation heights			
G. Squat Jumps	3	45	7
1. All cadets attempt 50 squat jumps for last three minutes			

LESSON V

A. General Instructions and Climbing	6	14	
1. Oblique rope			
a. Climb; hanging follow grip			
b. Climb; hands and legs			
c. Rest on topside			
d. Chinning on ropes			
2. Vertical Rope			
a. Climb; hand and leg part way			
b. Rest fast with seat around one leg			
c. Climb; hands and legs; attempt to make 20 feet in 10 seconds			
d. Chinning on ropes			
B. Vaulting	6	12	14
1. Side Horse			
a. Squat vault—Rear vault—Straddle vault—Front vault— Flank vault—Wolf vault			
C. All-Out Effort Activities	10	22	22
1. Demonstrate and have all cadets attempt squat balance 30 seconds			
D. Trampoline (or Balancing)	20	42	43
1. Straight bounce (feet apart, stress form)			
2. Straight bounce with twists			
3. Seat drop			
4. Bounce to knees to stand			
5. Back drops			
6. Seat 1/2 twist to seat			
7. Bounce to forward turnover			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
E. Squat Jumps	3	45	7
(Last three minutes all cadets attempt 60 squat jumps)			
1. Balancing			
a. Squads 1, 2, 3, and 4 line up along tumbling mats			
b. Squat balance—Head balance with arms folded—Head balance with hands clasped behind head—Head balance with hands on forehead—Forearm balance—Hand balance (kick to hand balance working in pairs; pressing from hand balance with partner's aid)—Hand balances into forward roll (Important that hips are off balance before rolling. If not, come back to feet)			
2. Stress—Do not tuck and roll on the head unless off balance. Attempt some doubles balancing if time permits, such as: Knee and shoulder balance; hand and foot balance; shoulder to shoulder or low arm to arm. <i>Work in Threes</i> , one man spotting			

LESSON VI

A. General Instructions and All-Out Effort Activities	15		34
1. Warm-up every day with rope climb; attempt to climb in 10 seconds; stress spotting (Give proper spotting positions)			
2. Climb cargo net every day (Descend ropes by cargo net with rope between insteps and hand under hand—15 minutes)			
3. Climbing shelf and inclined rope			
4. Review all-out activities of FIRST WEEK			
5. Demonstrate and have cadets attempt front handspring and snap up			
6. Also the Kip on high bar			
B. Squad Routines	30	45	66
1. Squads 1 and 2 work on tumbling; start with warm-up period, series of front and back rolls; follow with series of cartwheels; explain position of hands, head, and feet; series of round-offs			
2. Squads 3 and 4 work on Buck and Rolls—15 minutes			
3. Stress keeping head up, push with both hands, and spring from both feet. Roll on near side followed by vaults. This may be made competitive by moving starting line farther from the buck			
4. Straddle vaults with dive and roll over rolled mat			
5. Straddle vaults with right hand dive and roll over rolled mat			
6. Straddle vaults with left hand dive and roll over rolled mat			
7. Squat vaults with dive and roll over mat			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
8. Straddle vaults, spur with right foot, roll one length of mat			
9. Straddle vaults, spur with left foot, roll one length of mat			
10. Straddle vaults, spur with both feet, roll one length of mat			
11. Back scissors vault one hand			
12. Back scissors vault two hands			

LESSON VII

A. General Instructions and All-Out Effort Activities	15		34
1. Straddle vault over side horse—maximum height			
2. Demonstrate back handspring			
B. Squad Routines	30	45	66
1. Squads 1 and 2 on cargo net—15 minutes ascending and descending			
2. Squads 3 and 4 on parallel bars—15 minutes			
3. Straight arm walk—Straight arm hop—Grasshopper walk—Grasshopper hop—Lion's crawl			

LESSON VIII

A. General Instructions and All-Out Effort Activities	15		33
1. Climbing			
a. Rope climb for inferior cadets	5	20	11
others 20 climb cargo net			
2. Parachute Agility			
a. Jump and roll from platforms of various heights 5', 8'—10 min.	3	30	27
b. Forward jump and forward roll—backward jump and backward roll. Forward jump with turns into rolls. Backward jump with turns into rolls			
B. Squad Routines	15	45	34
1. Squads 1 and 2 report for vaulting over horse			
2. Squads 3 and 4 report for tumbling (stress handspring)			

LESSON IX

A. General Instructions and All-Out Effort Activities	15		33
B. Cargo Net (Ascending and Descending)	10	25	21
C. Review parachute agility	5	30	12
D. Review vaulting and tumbling	5	30	12
E. Climbing Shelf	10	45	22

LESSON X

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
A. Trampoline—35 minutes and checking off stunts	35		80
B. Balance Beam	10	45	20
1. Cross in side seat—Cross walking forward—Cross walking backward. Walk 1/2 way forward; turn and back off—Crossing by running			

PLAN FOR HOLDOVER CADETS

Names	Muster											Final Grade
		Squad Routine (10 Activities) (1)	Sit ups (Inclined Board) (2)	Push ups (35—3.5, 30—3.0, 25—2.5, and 2.0) (3)	Storm Board for Height, or 10 Chins—3.0 (4)	Straddle Vault over Vaulting Fence (5)	Rope Climb without Feet—8 Seconds (6)	Agility Pegs—All the Way or 12 Dips (7)	Hand Balance—Low Parallels—20 Sec. (8)	Squat Jumps (60 3.5 50—3.0, 40—2.5, and 2.0) (9)	Trampoline—6 Stunts 2.5 (10)	
Terhorst, J.E.		2.0	3.0	3.5	2.5	2.5	2.5	3.0	2.0	2.5	2.5	3.0
Dawson, E.R.		3.0	3.5	2.0	2.0	2.5	2.5	2.0	2.0	3.5	2.0	2.5

EXPLANATION OF ACTIVITIES AND GRADING SYSTEM

- (1) Vertical Rope Climbing. Flank Vault over Buck. Parachute Agility Jump. Storm Board. Horizontal Ropes—All the Way. Agility Pegs 1/2 Way. Balance Beam (hop one foot). Climbing Shelf. First Parallel Bars (hop with hands). Second Parallel Bars (walk with hands). First 4—3.5; Second 4—3.0; Rest —2.5.
- (2) 20—3.5; 15—3.0; 10—2.5; and 2.0.
- (3) 35—3.5; 30—3.0; 25—2.5; and 2.0, for 20.
- (4) Maximum Height—3.5; One nail below maximum height—3.0; Rest—2.5.
- (5) Maximum Height—3.5; Rest 2.5.
- (6) 8 Seconds—3.5; Rest 2.5.
- (7) Start on starboard side and go all the way around.
- (8) 20 Seconds—3.5; 15 Seconds—3.0; 10 Seconds—2.5; and 2.0.
- (9) Any number below 40—2.0.
- (10) a. Seat to feet—b. Knees to feet—c. Seat to knees to feet—4. Belly drop—5. Back to feet—6. Back to belly to feet. Six stunts—2.5; Less than 6—2.0; Outstanding—3.0 or 3.5.

GYMNASTICS AND TUMBLING
PRIMARY FLIGHT PROGRAM

Core Activities

A. All-Out Effort Standards

1. Strength

<i>Achievements</i>	<i>Purpose</i> Muscle Group	<i>Standard</i>
Chins	Biceps	12
Neck Pull-Ups	Biceps	8
Dips	Triceps	12
Push-Ups	Shoulders and Back	40
Extension Press-Ups	Abdominal	7 secs.
V-Position	Abdominal	2½ min.
V-Roll	Abdominal	7
Leg Lifts Sit-Ups	Abdominal	40/40
Half Lever	Abdominal	6
Squat Jumps	Legs	75
Burpees	Legs and Back	50
Push-Up-Slap Chest	Triceps	35
2. Climbing		
Rope Climb (20')	Biceps	9 secs.
3. Flexibility		
Trunk Extension	Flexibility	15"
Trunk Flexion	Flexibility	10"
Shoulder Flexibility	Flexibility	12"
4. Agility		
Skip over Leg	Agility	Forward and Backward (2)
5. Hanging		
Skin the Cat	Hanging	3
Monkey Hang	Hanging	1
Belly Grind	Hanging	6-8
6. Supporting		
Dips	Supporting	12
Squat Balance	Supporting	Touch Knees (5)
Grasshopper	Supporting	Forward and Backward
Grasshopper Walk and 10 Dips	Supporting	10 Dips

7. Review Pre-Flight Core Stunts and Supplementary Activities*

* See Scope of Supplementary Activities p. 415.

Scope and Explanation of Supplementary Activities for Primary, Intermediate and Operational Bases

The supplementary material will be drawn from the following suggested activities and additional material that the instructor may be interested in, may have equipment for, and may be sufficiently familiar with, to teach. It is suggested that the incompletely trained primary base instructor select expert cadet performers as *assistants*, instructors or squad leaders. However, close supervision from the organization and safety angles by the officer is always required.

A. *The trampoline* should function as an extremely beneficial and very popular supplementary activity. Instructors should be sure that cadets are fairly proficient on the review core skills before they progress beyond that point. The trampoline should never be used without supervision by an officer who knows and who will enforce safety rules. Experienced and talented cadets will aid in instruction. It is suggested that instructors refer to the core material on trampoline in the Pre-Flight syllabus, to Chapter XI, and to the following additional suggestions:

1. The best order of progression on any trampoline trick is the following:
 - a. Lead-up stunts well learned including land drills and partial stunts
 - b. Low attempt of whole stunt
 - c. Control of low stunt as to space covered and sureness of safe landing
 - d. Additional height
 - e. Combinations and repetitions
 - f. Refinements of form
2. The spirit of adventure and recklessness is to be discouraged for obvious reasons.
3. Short turns make for a more enjoyable workout for the group and cuts down the chances of injury.
4. It is better to have relatively small groups to a trampoline, say six to ten, to prevent extended intervals of waiting—even though it may mean that the groups will have trampoline less often and that some may have none.
5. The poorer cadets who after pre-flight training on the trampoline still show marked inaptitude on the trampoline are not apt to profit greatly from much additional trampoline work.
6. The chance to use the trampoline may be used as a stimulus as a reward for standards achieved in more tedious and less attractive activities.

B. *Partner Balancing and Tumbling* is another vast field for supplementary activity permitting muscular development, cooperative effort, endless variety and progressions, and utilizing minimum equipment and space. *Safety precautions must be emphasized.* The instructor may refer to the core material in the Pre-Flight and Flight Preparatory syllabus; to the references listed therein; to Chapter VIII; and to the following additional suggestions:

1. Adequate mat area or other relatively soft but firm deck or ground covering is preferable.
2. Completely adequate protection should be provided when learning all high balance and risky somersault tricks. At least two trained, alert spotters should be on guard constantly.
3. Proficiency should be acquired in a few stunts before proceeding to increasingly difficult tricks.

4. The parts method of teaching is sound pedagogy. The trick should be broken down into simple parts. The elementary forms should be mastered before proceeding to complicated variations.
 5. Partner assignments should be relatively permanent. Cadets should be advised to select suitable partners, i.e., the stronger, heavier understander should work with a lighter, agile topmounter.
- C. *Pyramid Building* is another supplementary activity equally effective without equipment or with the use of parallel bars, horses, tables or ladders. Pyramids should be based on previously taught Partner Stunts or on individual skills. Spotter protection should be adequate. Care should be taken to have work well planned in order to insure active participation by all. The instructor may refer to pyramid work in the syllabus and to Chapter IX.
- D. *Springboard Vaulting and Springboard Tumbling* are further interesting and enjoyable supplementary activities built from core skills. They are more advanced and like the trampoline should never be used except under expert, trained supervision. Springboard vaulting over a well padded and sufficiently high obstacle (5½ to 7 ft. high) to a thick soft landing pad or pile of mats (6" to 18" thick) should precede springboard tumbling (without obstacle) as an activity. The springboard tumbling except in its most elementary form should be confined to the superior performers and to the experienced instructor. The instructor may refer to Chapters VIII and X.
- E. *Regulation Apparatus Stunts* on the horizontal bar (low and high). Parallel bars or rings or side horse and tumbling are also excellent supplementary material for the later stages of training. Work may be adapted to individual differences but never encouraged to progress in difficulty faster than is obviously safe for the individual. The instructor should refer to descriptive material on apparatus stunts, given in the references and to Chapters VIII, IX and X. The instructor should not attempt to teach advanced apparatus work unless he is fully qualified to do so.
- F. A general moving ahead on the events covered in the core program or any one of them such as Tumbling, Balancing, Climbing or Vaulting is another form of highly acceptable supplementary activity. Material of this type can be drawn from advanced cadets, instructors' experience, in Athletic Journal and Journal of Health and Physical Education, and Chapters VIII, IX and X.
- F. Finally, supplementary activity may be interpreted to include the above activities especially in Pre-Flight School. It is also important that:
1. Additional stress should be given to the core activity beyond that implied in the original presentation and review thereof, for the purpose of improving form and precision.
 2. Core material should be utilized in combinations, routines and races, time trials and various forms of testing.

Suggested Lesson Plans and Organization for Tumbling and Gymnastics at the Primary Bases

No single plan of class organization will serve at all Primary bases due to the variable factors of instructor personnel, availability of cadets and differences in the physical plant itself. For these reasons several plans are presented with the expectation that the instructor will utilize that plan best suited to his own situation.

A. The following principles must be observed:

1. Due to the lapse of time between the work at the Flight Preparatory and the Primary Training Base the first two lessons must be devoted entirely to review of the core material taught at the previous schools. Such a procedure will give the instructor a minimum standard from which to start. He will then know the weak and the skilled cadets respectively.
2. The activities for the remaining six lessons may then be drawn from material referred to in "Scope and Explanation of the Supplementary Act for Primary, Intermediate and Operational Bases" and presented by following one of the "Suggested Program and Sample Lesson Plans."
3. The beginning of each lesson should be devoted to warm-up and all-out effort activities designed to limber up, stretch, and strengthen the muscles, stimulate circulation and in general prepare the body for more strenuous activity. These should include chins, dips, push-ups, extension press-ups, etc. This may be done by special exercises or review of the fundamentals previously covered.
4. Ropes should be climbed daily.
5. Material must be arranged in progressive order.

PRIMARY BASE GRADE SCALE

Activities Passed	Grade	Activities Passed	Grade	Activities Passed	Grade	Activities Passed	Grade
0	2.1	5	2.6	10-11	3.1	20-21	3.6
1	2.2	6	2.7	12-13	3.2	22-24	3.7
2	2.3	7	2.8	14-15	3.3	Over 25	3.8
3	2.4	8	2.9	16-17	3.4	26	3.9
4	2.5	9	3.0	18-19	3.5	Championship Calibre	4.0

ACTIVITIES

1. Extension Press (7 Seconds)	16. Hand Balance (10 Secs., within 3 ft. circle)
2. Half Lever (7 Seconds)	17. Straddle Vault (Horse maximum height)
3. Chins (12)	18. Skip over Leg (Forward and backward twice)
4. Dips (12)	19. Hip Swingups or Belly Grinds (6)
5. V-Position (2½ Minutes)	20. Kip on High Bar (1)
6. Leg Lifts and Sit-ups (40 Each)	21. Snap-up
7. Squat Jumps (65)	22. Handspring (Front)
8. Squat Balance (Touch knees 5 times)	23. Handspring (Backward)
9. Push-ups (Slap chest 25 times)	24. Backward Roll to Head Balance
10. Push-ups (40)	25. Backward Roll, momentary Hand Balance and Snap down
11. Single Leg Seat (Ropes) and Stirrup Descent	26. New Records (Equivalent to two stunts)
*12. Rope Climb (20 Ft.—9 secs.)	27. Grasshopper Walk and 10 Dips
13. Cargo Net (Up and down)	28. Burpees 40
14. Head Balance (10 Seconds)	29. Sit-ups (Back arched) 40
15. Forearm Balance (10 Secs.)	

* Rope climbing is required of all cadets.

NOTE: Suggested list of activities and grade scale may be altered at the discretion of the instructor to suit the needs of his situation. See pp. 371, 403 for sample grade sheet.

6. Use competitive relays.*
7. An objective system of grading should be used.

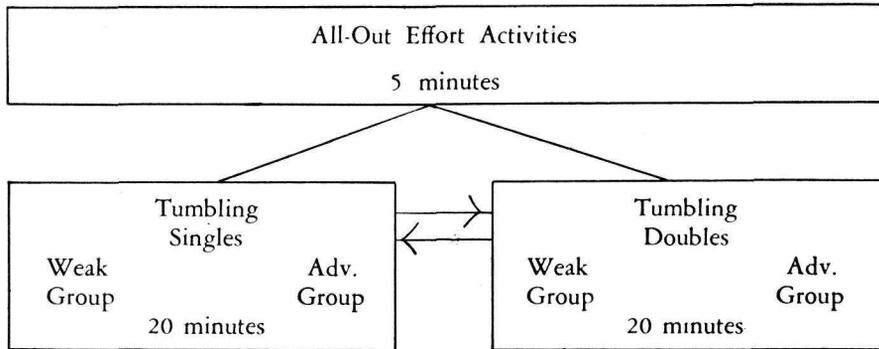
Suggested Organization and Sample Lesson Plan Where Class Organization Is a Single Group

Where only instructor is available, or where limitations of space or equipment exist, it may be necessary to maintain a single working group, and to concentrate on a single activity for the entire 45 minute period.

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. All-Out Effort Activities	5	5	11
II. Singles	20	25	44
1. Dive rolls (over 2 cadets on hands and knees)			
2. Extension rolls			
3. Neck spring			
4. Round off—extension roll			
5. Cartwheels			
III. Doubles	20	45	44
1. Double roll forward			
2. Double roll backward			
3. Partner shoulder balance			
4. Two high shoulder mount			
5. Thigh balance (partners facing)			

ORGANIZATION PLAN



Suggested Lesson Plan for Class Divided into Three Groups

If the director of gymnastics and tumbling finds it advisable to divide his class into three groups using one instructor and two cadet assistants, or two instructors and one cadet assistant, the following lesson plan is submitted to help him in the organization of his first class activities.

* See Chapter XIV.

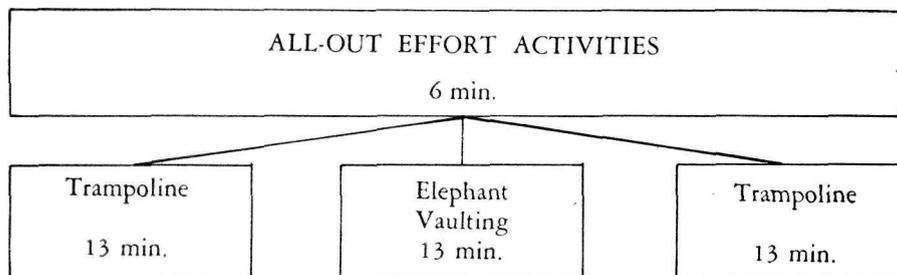
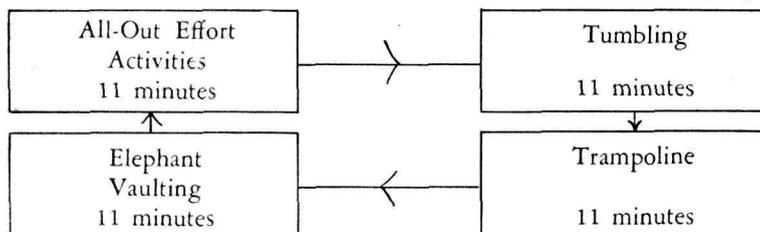
	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. All-Out Effort Activities	6	6	2+
II. Tumbling	13	19	32+
A. Review Core Material			
1. Forward roll to head balance			
2. Forward roll from run			
3. Backward extension roll			
4. Dive and forward roll from run			
5. Head spring			
6. Hand spring			
7. Hand balance			
8. Walk on hands			
9. Forearm balance			
III. Elephant Vaulting	13	32	32+
1. Flank vault right and left			
2. Low front vault right and left			
3. Squat vault to mount and jump to mat			
4. Squat vault through to stand on mat			
5. Straddle vault to mount and jump to mat			
6. Straddle vault through to stand on mat			
7. Shoulder snap, hands on near bar			
8. Head spring, hands on far bar			
9. Hand spring, hands on far bar			
IV. Trampoline	13	45	32+
A. Review Core Material			
1. Bouncing into $\frac{1}{2}$ twist			
2. Consecutive $\frac{1}{2}$ twisting bounces			
3. Bouncing full twists, right and left			
4. Bouncing from full twist right into full twist left			
5. Bouncing to seat to knees to feet			
6. Back drop to feet			

With this type of class organization each group will rotate every 13 minutes so that during the 45 minute period three activities will be given each group. Assistants who possess the proper amount of training and responsibility to assist the instructor in teaching may be picked from the cadets of the preceding classes.

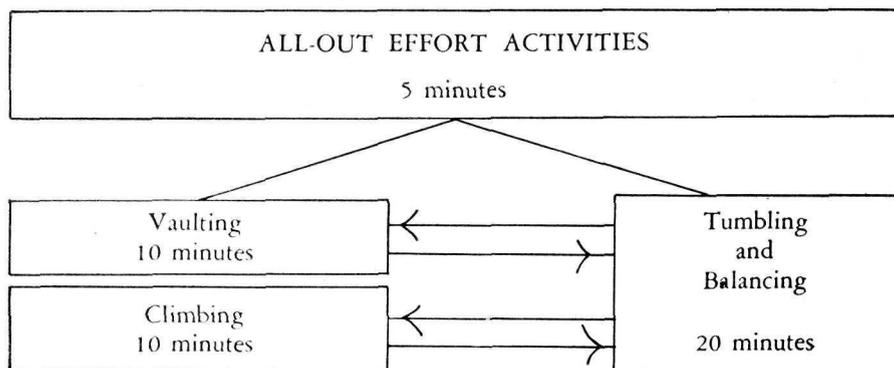
The activities may be varied from day to day so that over any appreciable length of time all apparatus and tumbling activities will have been covered adequately.

After an adequate review of core activities has been given such supplementary material as is deemed advisable may be selected from the Manual at the discretion of the instructor.

ORGANIZATION PLAN

*Alternate Plan Using All-Out Effort Activities As One of the Rotating Groups*

ORGANIZATION PLAN

*Suggested Organization and Sample Lesson Plan Where Class Organization Is Two Groups*

The gymnastics and tumbling activity can be directed very effectively in small groups. In this set-up the class is divided into two groups, each under the direction of one instructor.

On the basis of a 45 minute period, 5 minutes shall be allowed for all-out effort activities. Each group shall have 10 minutes of vaulting, 10 minutes of climbing and 20 minutes of tumbling and balancing each period. The instructional duties shall be so divided that one instructor directs the 20 minute unit while the other instructor directs the two 10 minute units.

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. Tumbling and Gymnastics			
A. All-Out Effort Activities10	10	22
B. Vaulting and Climbing10	20	22
1. Vaulting—buck			
a. Straddle vault			
b. Front vault			
c. Flank vault			
d. Knee dismount vault			
e. Wolf vault			
f. Squat vault			
g. Height vault			
Repeat each vault twice or more. Come to a stand after first vault, and roll out of second.			
2. Climbing—Horizontal rope10	30	22
a. Travel—Hand follow grip, hanging			
b. Travel—Hand over hand			
c. Travel—Hand and leg hanging			
d. Chinning on ropes			
Review on double ropes if available.			
C. Tumbling and Balance			
1. Balancing Beam	5	35	12
a. Cross in side seat			
b. Cross walking forward			
2. Tumbling	10	45	22
a. Forward roll			
b. Broad jump with turns			
c. Backward rolls			
d. Frog hand balance and roll			
e. Frog head balance and roll			
f. Introduction to hand balance. (Partner lift to hand balance)			

SAMPLE LESSON PLAN

In this suggested lesson plan the class is divided into two groups, each group participating in a different activity. The selection of movements will be made from core and supplementary lists in the manual for primary bases at the direction of instructor in charge to facilitate differences in time, length of period, ability of cadets, numbers of groups and facilities available.

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
I. All-Out Effort Activity	10	10	22
II. Balance Beam	20	30	44
1. Travel on side straddle support			
2. Walk across			
a. Forward			
b. Backward			
3. Run across			
a. Forward			
b. Backward			
4. Side step across			
5. Cat walk across forward			
6. Passing in walk			
III. Rope Climbing	15	45	34
1. Leg around secure			
2. Leg around ascend			
3. Leg around descend			
4. Cross leg climb			
5. Cross leg secure			
6. Cross leg descend			
NOTE: Suggested activity combinations:			
Vaulting and Apparatus			
Tumbling and Trampoline			
Rope Climbing and Balance Beam			

PROGRAM FOR INTERMEDIATE AND OPERATIONAL BASES

When the cadet is ready for his intermediate flight work he has received twelve months of progressive training in gymnastics and tumbling. He has obtained instruction in all the core material as well as experience in supplementary activities. His upper body strength has been developed to a degree where he should be able to control his body satisfactorily for most activities that will confront him. The standard of everybody has been thoroughly checked at Primary Flight Bases. The better performers will have been thoroughly grounded in fundamentals of safety and should be ready to try more advanced tricks. The important thing now is to provide adequate time allotment for them and a competent officer who can guide and supervise the work properly. Adhere to the following principles in planning your lessons.

1. Your plan of organization may be made from studying the lesson plans of the previous stages of training. No plans are therefore offered in the syllabus.
2. Include a check on the core material as part of your lesson plans.
3. The supplementary material may be selected from "Scope Supplementary Material" (p. 415).
4. Warm-up:
About 3 minutes from each lesson should be devoted to warm-up or condi-

tioning exercises. This may be done by special exercises or review of the fundamentals previously covered. One method is to have cadets execute movements at top speed upon command:

- a. Stationary run!
- b. On your belly! Stand up!
- c. Touch head to deck! Stand up!
- d. Fall forward—Squat!—Turn right! Turn left! Stand up!
- e. Forward roll!—Backward roll!

Repeat series until group is thoroughly warmed-up.

5. An effort should be made to include more than one gymnastic activity in each lesson. The trampoline and doubles tumbling and balancing would be good choices for activities.
6. Material must be arranged progressively from simple to complex.
7. Competition is to be included in each lesson. It may cover:
 - a. Relays
 - (1) Rope climbing
 - (2) Balance beam
 - (3) Mimetic locomotion
 - (4) Vaulting
 - b. All-out effort activity contests
 - c. Platoon achievement on the basis of the number of stunts checked off by platoons
 - d. Stunt contest
 - e. Gymnastic meets
 - f. Obstacle races using gymnastic equipment or cadets
8. Grading

The gymnastics and tumbling program at the Intermediate and Operational bases consists entirely of supplementary (optional) activity. Since there is no core material required to be taught the objective grading as used throughout the training up to this point cannot be used. Therefore, it is necessary for each of the following bases to grade the cadets as accurately as possible based upon the activities selected for your particular program. However, the practice of reviewing core activities with groups and individuals in need of such review will continue and for these individuals the same grading system used at the Primary may be used.

PROGRAM FOR OFFICERS ON SHORE STATIONS

Introduction

It is assumed that all Naval officers will at some time or other be assigned to sea duty. Officers then should be adequately informed as to the techniques of self preservation and safety pertaining to gymnastics and tumbling. In order to make full use of these safety techniques, officers need to be in proper physical condition. Assuming that the officers of any ship or station differ greatly in age, conditions, and previous training, a survey should be made as to their needs and interests. From this survey a tentative flexible program of instruction should be outlined which should be adjustable and adequate to individual differences, time and facilities.

If a minimum amount of time is available, techniques (core activities) should

be taught which are adjudged of utmost importance in self safety and preservation, such as climbing and falling. If more time is available activities should be presented which will create interest and enjoyment. Each officer should be encouraged to progress as far as possible to stimulate his interest and further learning.

Objectives

The main objective is to teach officers the use of safety measures inherent in gymnastics and tumbling drills which will be of a practical nature in event of emergency.

More specifically the objectives may be stated as follows:

1. To maintain the highest degree of physical and mental efficiency
2. To provide diversional activities
3. To develop the native sense of balance
4. To provide strength and agility necessary in an emergency

In order to achieve these objectives it is advisable to plan the lessons so as to permit:

1. Enjoyment and satisfaction in successful performance.
2. Review and further instruction for those whose level of achievement has been retarded or neglected
3. Further instruction (supplementary material) for advanced performers
4. Instruction for officers who have not had the advantage of Naval Aviation training, i.e., Staff Administrative, Flight Instructors, etc.

Time Element

The time allotted for this activity will vary considerably at different stations, hence the instructor must adapt his program to the current needs and situations.

Tentatively, for the purpose of facilitating the organization of class lessons, 60 minutes will be allotted per lesson.

Motivation

The success of the gymnastic and tumbling program will depend, to a large extent upon proper motivation. Plan the lessons so that each individual will be able to perform with a reasonable degree of satisfaction and accomplishment.

One of the strongest motivation factors with a group, which may include older men who have led sedentary lives, is the factor of practical application. In other words, should they find themselves in an emergency situation which will demand certain skills and adequate physical endurance and ability, they will be able to apply those activities they are being taught to help extricate themselves. An explanation of the various emergency situations such as: descending rope on abandoning ship; climbing up a cargo net; climbing from a crashed plane; falling properly in parachute landings. Such parallel explanations of skills involved will help in pointing out the usefulness of techniques being taught.

Provide adequate opportunity for diversional and selective activities.

SUGGESTED LESSON PLAN FOR OFFICERS

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
Muster	3	3	5
Explanation and Discussion	4	3	6
Explain importance of maintaining proper physical condition and learning techniques taught in Gymnastics and Tumbling. Demonstrating skills			
Warm-Up and All-Out Effort	8	15	13
Limber up, stretch muscles and stimulate circulation			
Climbing Activities	10	25	17
Vaulting, handing and supporting activity	10	35	17
Tumbling activity	10	45	17
Free time activity	15	60	24

SUGGESTED MATERIAL ACTIVITIES*

I. Climbing Activities

A. Stunts

1. Vertical ropes (See Chapter IX)
 - a. Rope Exercise to develop strength
 - (1) Lower the back to deck and up
 - (2) Climb $\frac{1}{2}$ way up and down
 - (3) Chin on ropes
 - (4) $\frac{1}{2}$ lever chinning
 - b. Leg around secure
 - c. Leg around climb
 - d. Leg around descend
 - e. Cross leg shinny up
 - f. Cross leg secure
 - g. Cross leg descent
 - h. Stirrup climb
 - i. Stirrup descent
 - j. Stirrup secure
 - k. Climbing without legs
 - l. Standing tie-in
 - m. Sitting tie-in
2. Horizontal Ropes
 - a. Hand follow hand grip
 - b. Hand over hand
 - c. Hand and legs
 - d. Sloth walk
3. Oblique Ropes
 - a. Hands only climb
 - b. Hands and legs

* Refer pp. 396, 442 and also to Chapters VIII, IX, X, XI.

II. Tumbling Activity

A. Stunts

1. Jumping down mats—hands on hips—feet together
2. Jumping down mats—one foot—hands on hips
3. Frog jump
4. Jumping down mats—feet together—right or left side, forward
5. Stride reaching forward
6. Crab walk—forward, backward, sideward
7. Duck waddle
8. Forward roll—from squat position
9. Forward roll—from standing position
10. Forward roll—from stand to lying on back
11. Running forward roll
12. Forward roll with hands clasping shins
13. Forward roll with hands under thighs
14. Forward roll with hands grasping toe
15. Forward roll with arms folded
16. Forward roll with hands using one foot
17. Frog head balance and forward roll
18. Backward roll from full knee bend
19. Backward roll from stand
20. Backward roll with feet together and legs straight
21. Backward roll from legs crossed to stand turn into forward roll
22. Shoulder roll
23. Triple lateral or parallel rolls
24. Double roll forward and backward
25. Dive and roll
26. Backward roll extension
27. Jump from platform and forward roll
28. Jump from platform and backward roll
29. Head spring
30. Hand spring
31. Snap up
32. Cart wheel
33. Round off
34. Round off into backward roll

III. Vaulting Activity

A. Side horse

1. Front vault right and left
2. Flank vault
3. Fencer's vault—single pommel grasp, right and left
4. Rear vault
5. Squat mount
6. Squat vault
7. Straddle mount
8. Straddle vault
9. Thief vault

- B. Elephant vaulting
 - 1. Low front vault
 - 2. Flank vault
 - 3. Squat mount
 - 4. Squat vault
 - 5. Straddle mount
 - 6. Straddle vault
 - 7. Neck roll snap to stand
 - 8. Head spring
 - 9. Hand spring
- IV. Supporting Activity
 - A. Parallel Bars
 - 1. Hand travelling
 - 2. Travelling cross riding seats
 - 3. Inverted hang end of bars
 - 4. Skin the cat, end of bars
 - 5. Upper arm hang swinging
 - 6. Swinging cross rest position
 - 7. Swinging cross rest position, front dismount
 - 8. Swinging cross rest position, rear dismount
 - 9. Shoulder balance from cross riding seat
 - 10. Shoulder roll forward from shoulder balance
 - V. Hanging Activity
 - A. Rings
 - 1. Legs circling—right and left, motion at waist
 - 2. Skin the cat
 - 3. Travelling rings
 - 4. Swinging—half twists at each end of swing
 - 5. Still rings—nest hang
 - 6. Swinging rings—nest hang
 - 7. Still rings—inverted hang
 - 8. Swinging rings—inverted hang
 - 9. Still rings—chinning and pull up to support
 - 10. Still rings—single leg cuts and catch
 - 11. Swinging rings—single leg cuts and catch
 - VI. Free Time Activity
 - A. Trampoline
 - B. Rowing machines
 - C. Chest weights
 - D. Stall Bars
 - E. Weight lifting
 - F. Medicine balls
 - G. Spring board
 - H. Partner stunts

PROGRAM FOR ENLISTED MEN ON SHORE STATIONS

Introduction

There is no assurance that enlisted personnel will have had previous instruction in gymnastic and tumbling skills. In fact, these men will be comparable to a battalion of cadets in the first stage of training (except for a few cases in which the ages differ). They will present a range in ability from very poor to excellent. There may be immediate need for these skills. The enlisted men must be instructed in these skills. This is a difficult task and must be undertaken and accomplished by the officer in charge of gymnastics. Although the main effort should be directed toward the below average group, the responsibility toward the trained opponent should not be overlooked. Since the enlisted man's tour of duty aboard shore stations varies considerably, it will be necessary for the instructor of gymnastics to use his own discretion in following these lessons.

Objectives

1. To equip the seaman with strength and skill to extricate himself from emergency situations requiring *climbing*, tumbling and balance
2. To teach landing and falling without injury
3. To develop the native sense of balance

Lesson Plan for Enlisted Men on Shore Stations

Program to be made up from a list of activities considered basic in all phases of Aviation Training, together with additional (optional) material. These lists are referenced to full descriptions of stunts in the appendix of the syllabus.

A detailed lesson plan based on twelve 60 minute lessons and including all basic activities and some additional activities is provided as a recommended program. Variations are expected and no limit is placed on achievement.

However, the following principles must be observed:

1. Muster procedure should not infringe upon gymnastics and tumbling
2. Warm-up (See page 368)
3. The basic material should be adequately covered
4. Material must be arranged in a progressive order
5. Time allotment of lessons

The time allotments for each lesson are based on a 60 minute period. If the time allotment is shorter, the indicated time can be adjusted. The activities indicated by the asterisk (*) are those activities considered as basic. If time does not permit the use of the entire syllabus these activities so marked should be taught first, following the order in which they appear in the lessons.

If time be allowed for more than twelve lessons, the instructor should continue with additional lessons on the same basis as the twelve suggested in this plan. More emphasis, however, may be placed upon a more advanced program through the use of suggested material in the additional group. The trend, too, should deviate increasingly from the formal type of class procedure to one which is diversional in character.

List of Activities**I. Tumbling. (Mats)****A. Basic**

1. Forward Roll
 - a. From squat
 - b. From stand
2. Backward Roll
 - a. From squat
 - b. From stand
3. Diving Roll
 - a. Standing
 - b. Running
4. Shoulder Rolls
5. Jump rolls from platforms
6. Falls—Front, back
7. Backward extension roll
8. Head spring
9. Snap up
10. Hand spring

B. Additional

1. Fish flops
2. Lateral dive rolls
(jumbles)
3. Double rolls
(monkey rolls)
4. Round off
5. Back handspring
(flip flop)
6. Front somersault
(over rolled mat)
7. Back somersault

II. Balance (Mats)**A. Basic**

1. Frog Head balance
2. Frog Hand balance
3. Plain head balance
4. Forearm balance
5. Hand balance
- a. With assistance
- b. Against rolled mat
- c. Against bulkhead
6. Walk on hands

B. Additional

1. Partner should stand
2. Chest balance on partner's
back
3. Swan balance
4. Foot to hand balance
5. Thigh mounts (two high)
6. Triple balancing

III. Climbing (Vertical Ropes)**A. Basic**

1. Leg around
 - a. Climb
 - b. Secure
 - c. Descend
2. Cross leg Shinny
 - a. Climb
 - b. Secure
 - c. Descend
3. Stirrup
 - a. Climb
 - b. Secure
 - c. Descend
4. Standing tie in
5. Sitting tie in
6. Hand over hand
7. Two ropes
 - a. Reverse Hang
 - b. Inverted Hang
 - c. Nest Hang

B. Additional

1. Inverted hang and secure
2. Rocking chair
3. Instep squeeze descend

IV. Horizontal Ropes

A. Basic

1. Hand follow hand
2. Hand over hand

3. Front lying

B. Additional

1. Hand and leg (Sloth walk)

C. Climbing (Cargo net)

1. Ascending
2. Descending

V. Vaulting (Side Horse, Vaulting Box, Buck or improvised vaulting stand).

A. Basic

1. Squat stand
2. Squat vault
3. Flank vault
4. Straddle stand
5. Front vault
6. Wolf vault
7. Straddle vault

8. Knee stand
9. Rear vault
10. Thief vault
11. Series of squats
12. Dive and catch
13. Neck spring

B. Additional

1. Straddle vault
 - a. Single tap on neck
 - b. Double tap (croup to neck)

2. Squat vault (Single and double tap)
3. Scissors vault (Single and double tap)
4. Hand spring
5. Stoop vault

C. Elephant vaulting

VI. Trampoline

A. Basic

1. Controlled bounces
2. Sit drop
3. Knee drop
4. Front drop

5. Back drop
6. $\frac{3}{4}$ Front turnover piked
7. $\frac{3}{4}$ Front turnover tucked
8. Full front turnover (Somersault)

B. Additional

1. Backward turnover

VII. Low Parallel Bars (Regulation or improvised)

A. Basic

1. Shoulder balance
2. Chest balance

3. Hand balance

B. Additional

1. Hand balance (one bar)

2. Pirouette

VIII. High Parallel Bars

A. Basic

- | | |
|---------------------------|---------------------|
| 1. Cross rest position | 6. Rear vault |
| 2. Straddle seat position | 7. Swing |
| 3. Travels | 8. Dip swing |
| 4. Straddle roll | 9. Shoulder balance |
| 5. Scissors | |

B. Additional

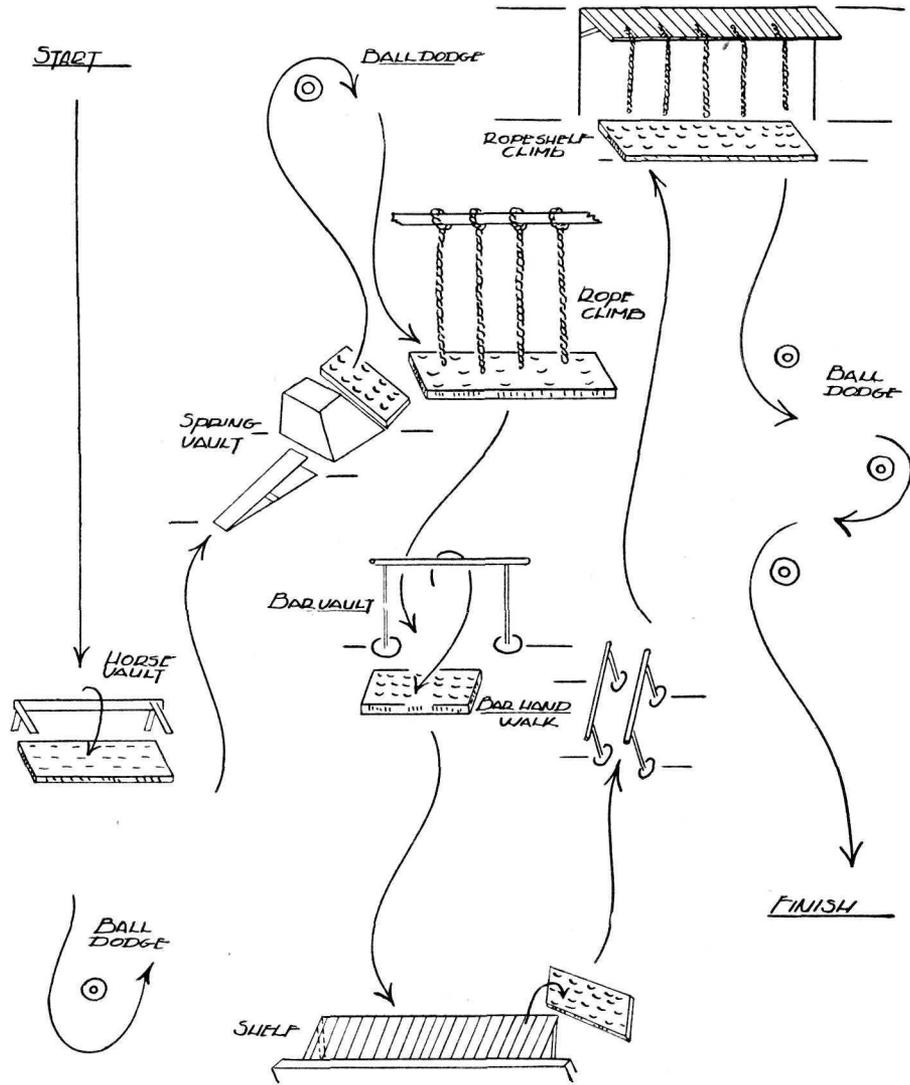
- | | |
|--------------------------------|-----------------|
| 1. Swing in upper arm position | 4. Hand balance |
| 2. Back and front uprise | a. Kick up |
| 3. Upper arm rip | b. Swing up |

LESSON I

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
A. <i>Muster</i>	2	2	3
B. <i>Explanation on Tumbling and Gymnastics</i>	10	12	16
A brief resume of importance of tumbling and gymnastics, as set forth in the objectives of this syllabus.			
C. <i>Warm up and All out Effort Activity</i>	5	17	9
The beginning of each lesson should be devoted to warm-up and all out effort activity designed to limber up, stretch and strengthen the muscles, stimulate circulation and generally prepare the body for more strenuous activity. These should include chins, push ups, 1/2 levers, dips, extension press up*			
D. <i>Tumbling and Balance</i>	15	32	25
1. Hopping length of mat (Hands on hips, feet together)			
2. Duck Walk (Walking in squat position)			
3. Bear walk (Walking on hands and feet, legs stiff)			
4. Crab walk (Body inverted, hands, feet on deck)			
*5. Simple forward roll			
*6. Frog Head balance			
*7. Frog hand balance			
8. Combination of frog head and hand balance into forward roll			
E. <i>Climbing (Vertical Ropes)</i>	15	47	25
*1. Leg around climb			
*2. Leg around descent			
*3. Two rope reverse hang			
Explanation on use of ropes			
F. <i>Diversional Activity</i>	13	60	22
1. Relay—See accompanying list			

* Refer to Chapter XIII, p. 323.

INDOOR COURSE



Layout for indoor obstacle course using gymnasium equipment.

LESSON II

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
1. Review of simple forward roll			
*2. Series of forward rolls			
*3. Shoulder rolls—right and left			
4. Series of shoulder rolls alternately right and left.			
5. Head stand with assistance			
D. <i>Climbing (Vertical Ropes)</i>	15	37	25
1. Review first lesson			
*2. Cross leg shinny			
*3. Cross leg secure			
*4. Cross descent			
5. Inverted hang on two ropes			
E. <i>Vaulting (Side horse at vaulting box)</i>	12	49	20
1. Squat stand			
2. Squat vault			
3. Flank vault—Right and left			
F. <i>Diversional Activity</i>	11	60	18

LESSON III

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	10
C. <i>Tumbling and Balance</i>	15	22	25
1. Review series of forward rolls			
2. Review shoulder rolls			
*3. Backward rolls (From squat and from standing)			
*4. Series of backward rolls			
*5. Head balance			
a. Partial assistance			
b. No assistance			
D. <i>Climbing (Vertical ropes)</i>	10	32	16
1. Review second lesson			
*2. Stirrup climb			
*3. Stirrup secure			
*4. Stirrup descent			
*5. Full length climb by "leg around" method			
6. Nest hang on two ropes			
7. Review of all double rope hangs			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
E. <i>Vaulting</i>	10	42	16
1. Review second lesson			
*2. Straddle stand			
*3. Straddle vault			
*4. Front vault right and left			
F. <i>Diversional Activity</i>	18	60	30
1. Competitive Relay			

LESSON IV

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	10
C. <i>Tumbling and Balance</i>	15	22	25
1. Review backward rolls			
2. Combination of rolls			
*3. Standing forward dive rolls			
4. Series of standing dive rolls			
5. Head balance (without assistance)			
*6. Backward and front falls			
D. <i>Climbing</i> (Vertical ropes)	10	32	16
1. Review all methods of climbing			
*2. Climb to top with cross leg shinny and return			
*3. Climb to top with cross leg shinny and down adjoining ropes with stirrup method			
4. Review all two rope hand			
E. <i>Vaulting</i> (Side horse or vaulting box)	10	42	16
1. Review front and straddle vaults			
2. Wolf vault			
*3. Rear vault			
F. <i>Diversional Activity</i>	18	60	30
1. Obstacle relay race (using available equipment with stunts previously taught)			

LESSON V

A. <i>Muster</i>	2	2	3
B. <i>Warm up All out Effort Activity</i>	5	7	10
C. <i>Tumbling and Balance</i>	15	22	25
1. Review standing dive rolls			
2. Review series of standing dive rolls			
*3. Running dive rolls			
*4. Dive over obstacle			
5. Front fall, squat through to seat			
6. Frog head balance, press into head balance, then into forward roll			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
D. <i>Climbing</i>	8	30	13
1. <i>Cargo net</i>			
*a. Ascending and descending			
2. <i>Vertical Ropes</i>			
a. Climb to top and return, repeating immediately			
E. <i>Vaulting</i> (Side horse or vaulting box)	10	40	16
1. Review all vaults previously learned			
*2. Thief vault			
F. <i>Diversional Activity</i>	20	60	33
1. Supervised practice on all skills			

LESSON VI

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	10
C. <i>Tumbling and Balance</i>	20	27	33
1. Review running dive roll over obstacle			
*2. Running dive roll over increased number of obstacles			
*3. Jumping from platform with forward and back rolls			
D. <i>Climbing</i> (Vertical ropes)	8	35	13
1. Ascending and descending cargo net for time			
2. Ascending and descending vertical ropes for time			
E. <i>Vaulting</i> (Side horse and vaulting box)	10	45	16
*1. Diving and catch			
2. Series of squats			
F. <i>Diversional Activity</i>	15	60	25
1. Horse and rider competition			

LESSON VII

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	9
C. <i>Diversional Activities</i>	53	60	88
1. Supervised Activity period			
a. Individual participation in practicing all skills previously taught			

LESSON VIII

A. <i>Muster</i>	2	2	3
B. <i>Warm up All out Effort Activity</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
1. Backward roll to head balance			
2. Backward extension roll			
*3. Snap up			

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
D. <i>Climbing</i> (Vertical ropes)	10	32	16
*1. Hand over hand without legs			
*2. Standing tie in			
*3. Sitting tie in			
E. <i>Apparatus</i>	28	60	47
1. Low parallels			
*a. Shoulder balance			
b. Chest balance			
2. High parallels			
*a. Cross rest position			
b. Walk length of bars in cross rest position			
c. Straddle seat travel			
3. Trampoline			
*a. Controlled bounce			
*b. Sit drop			
*c. Knee drop			

LESSON IX

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
1. Review backward roll to head balance			
2. Backward roll to head balance to chest roll			
3. Review snap-up			
*4. Neck or head spring from rolled mat			
D. <i>Climbing</i> (Horizontal) (Ropes, Bars, or Ladders)	8	30	13
*1. Hand follow hand			
*2. Hand over hand			
*3. Rest position (Top)			
E. <i>Apparatus</i>	30	50	50
1. Low parallel			
a. Review shoulder and chest balance			
*b. Shoulder balance forward roll to straddle			
2. High parallel			
a. Review straddle seat travel			
b. Cross rest position swing			
c. Dip swing and travel			
3. Trampoline			
a. Review bounces in 8th lesson			
b. Bounces with $\frac{1}{4}$, $\frac{1}{2}$, and full turns			
*c. Combination of knees to feet to seat to feet, adding $\frac{1}{2}$ turns			

Time Allotment

	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
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LESSON X

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
1. Backward extension roll			
*2. Handspring on rolled mat			
*3. Forearm balance			
D. <i>Apparatus</i>	38	60	63
1. Low parallel			
*a. Hand balance			
2. High parallel			
*a. Forward straddle roll			
*b. Dismount			
1. Rear vault			
c. Combinations of preceding stunts			
3. Trampoline			
a. Review preceding stunts			
b. Low front drop			
c. Low back drop			

LESSON XI

A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
*1. Running front handspring			
*2. Hand balance with assistance			
*3. Hand balance without assistance			
*4. Walking on hands			
D. <i>Apparatus</i>	20	42	33
1. High parallel			
a. Review combinations of preceding stunts			
*b. Shoulder balance			
*c. Roll from shoulder balance			
d. Scissors on backward swing			
2. Trampoline			
a. Warm up with combinations of preceding stunts			
*b. $\frac{3}{4}$ turn over piked			
*c. $\frac{3}{4}$ turn over tucked			
E. <i>Diversion</i>	18	60	30
1. Supervised activity on all equipment			

LESSON XII

	<i>Time Allotment</i>		
	<i>Specific</i>	<i>Total</i>	<i>Percent</i>
A. <i>Muster</i>	2	2	3
B. <i>Warm up and All out Effort Activity</i>	5	7	9
C. <i>Tumbling and Balance</i>	15	22	25
*1. Cartwheels			
2. Series of headsprings			
3. Series of snap-ups			
4. Combination of handspring, headspring and snap-up.			
D. <i>Apparatus</i>	38	60	63
1. Supervised activity on apparatus using suggested stunts			
Competitive Relays should be used in lessons. Refer to page			

SUGGESTIONS FOR OTHER PROGRAMS

CARRIERS

Introduction

Gymnastics can add greatly to maintenance of conditions during service aboard carriers. Recent naval encounters have shown the importance of a knowledge of climbing, vaulting and balancing.

The athletic officer on a carrier will be called upon to improvise because of limited facilities. Carriers are equipped with ropes and cargo nets in some instances, and these have proved to be satisfactory both in creating enthusiasm and in providing the opportunity for maintaining good physical condition.

The following pages offer suggestions that may help with a carrier program.

Stunts*

- A. Single Balancing* (See Chapter X)
 1. Frog Head Balance
 2. Frog Hand Balance (Squat Balance)
 3. Jack Head Balance
 4. Head Balance
 5. Forearm (Tiger) Balance
 6. Hand Balance
- B. Balance Beam* (See Chapter X, and p. 446)
 1. Seat Travels
 2. Walk Forward and Backward
 3. Run Forward and Backward
 4. Sideward Walk
- C. Partner Stunts* (See Chapter X)
 1. Back Roll over Back

* For full descriptions see Syllabus.

2. Double Turnover Holding Hands
 3. Double Turnover Holding Waists
 4. Shoulder Balance
 5. Belly Balance
 6. Standing Balance
 7. Chest Balance
 8. Arm to Arm Balance
 9. Hand to Hand Balance
 10. Ankle Pick Up
- D. Pyramids
- Pyramid building either with or without apparatus, combines easily with the program in tumbling. Useful for ship entertainment, it creates a spirit of teamwork and cooperation as well. Pyramids vary from the simple two man partner stunt to any number that may wish to participate. Selected pyramids are listed in the syllabus. Also refer to Chapter X.
1. Two Man Pyramid
 2. Three Man Pyramid
 3. Six Man Pyramid
 4. Seven Man Pyramid
 5. Nine Man Pyramid
 6. Thirteen Man Pyramid
- E. Rope Climbing (Vertical Ropes) (See page 168)
1. Leg Around Secure
 2. Leg Around Climb
 3. Leg Around Descent
 4. Cross Leg Climb
 5. Cross Leg Secure
 6. Stirrup Climb
 7. Stirrup Descent
 8. Stirrup Secure
- F. Rope Climbing (Horizontal) (See Chapter IX)
1. Hand Follow Hand
 2. Hand over Hand
 3. Sloth Walk
- G. Cargo Net (See Chapter IX)
1. Climbing
 2. Descending

DETAILS OF PROGRAM FOR OFFICERS ON FOREIGN BASES

Suggestions

It is rather impractical to try to prescribe an organized gymnastic program for foreign stations. Weather, equipment, locality, and personnel have to be taken into consideration. In the syllabus provided, several phases of gymnastic activity are given. Different methods have been suggested previously describing ways of improvising some equipment for outdoor activities. A survey should be made of available facilities, personnel needs, material and interest.

* See p. 13-22.

Objectives

1. To maintain the highest possible degree of physical and mental efficiency
2. To provide diversional activity
3. To improve the native sense of balance

PHYSICAL TRAINING PROGRAM FOR OFFICERS' CHILDREN

Gymnastics and tumbling lends itself favorably to the promotion of a program for officers' children particularly at the Pre-Flight School. Below is a schedule which is used effectively at one of the Pre-Flight Schools. If facilities were available, swimming would be an excellent activity to interchange with tennis.

CHILDREN'S PROGRAM SCHEDULE

Boys and Girls 9 to 14 Years of Age

CLASS	MONDAY	WEDNESDAY	FRIDAY
10:00 10:30	Calisthenics Games	Marching Tactics	Tumbling
10:30 11:00	Tennis Instruction	Pyramids Tumbling	Play Gymnastics and Marching Tactics
11:00 11:30	Trampoline	Trampoline	Folk Dancing or Tennis Instruction
<i>Boys and Girls 5 to 8 Years of Age</i>			
10:00 10:30	Calisthenics Relays	Games	Story Hour Stunt Songs
10:30 11:00	Tumbling	Balancing or Trampoline	Tumbling
11:00 11:30	Balancing Stunts Acrobatics	Stunt Songs Singing Games	Relays or Games

APPENDIX II

CORE AND SUPPLEMENTARY ACTIVITIES FOR FLIGHT PREPARATORY AND WAR TRAINING SERVICE SCHOOLS

ALL-OUT EFFORT ACHIEVEMENT STANDARDS*

<i>Strength</i>						
Achievements	Muscle Groups	Flight Prep.	W.T.S. Schools	Pre-Flight	Primary	Classification
Chins	Biceps	5	7	10	12	Core
Neck Pull-ups	Biceps	3	5	8		Core
Dips	Triceps	4	6	12	12	Core
Push-ups	Triceps	20	25	40	40	Core
Extension Press-ups	Shoulders and back	2 sec.	3 sec.	5 sec.	7 sec.	Core
V-Position	Abdominal	1 min.	1 min. 30 sec.	2 min.	2½ min.	Core
V-Roll	Abdominal	1	3	5	7	Core
Leg Lifts—Sit-ups	Abdominal	20/20	25/25	35/35	40/40	Core
Half Lever Sit-ups,	Abdominal	3	4	5	6	Core
Back arched	Abdominal	15	20	35	40	
Squat Jumps	Legs	30	40	60	70	Core
Burpees	Legs and back	20	25	40	Supplementary 50	Core
Push-up (slap chest)	Triceps	10	15	25	35	Core
Various types of chins	Biceps					Supplementary
<i>Climbing Standards</i>						
Rope Climb 20'	Biceps	15 sec.	12 sec.	10 sec.	9 sec.	Core
Cargo Nets (up and down)						
<i>Flexibility Standards</i>						
Trunk Extension	Flexibility	15"	15"	15"	15"	Core
Trunk Flexion	Flexibility	10"	10"	10"	10"	Core
Shoulder Flexibility		10"	10"	12"	12"	Core
<i>Agility</i>						
Skip over Leg	Agility	Forward	Agility Forward Backward	Forward Backward	Forward Backward (2)	Core
<i>Hanging Requirements</i>						
Skin the Cat		1	4	5	6 Supplementary	Core
Monkey Hang			1	1	1 supplementary	Core
Belly Grind		1	3	4-6	6-8	Core
<i>Supporting Requirements</i>						
Dips		4	5	12	12	Core
Squat Balance		Correct Form	Touch Knees	Touch Knees (2)	5	Core
Grasshopper Walk		Forward	Forward	Forward Backward	Forward Backward 10 dips	Core

* See description of All-Out Activities in Chapter XIII and pp. 308, 323, 391, 399, 460 and syllabus.

SKILLS AND EVENTS IN FLIGHT PREPARATORY AND WAR TRAINING SERVICE SCHOOL PROGRAMS

Rope Climbing*

Vertical Rope

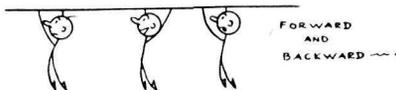
- | | |
|-----------------------------|--------------------------|
| Leg Around Secure | Stirrup Descent |
| Leg Around Climb | Stirrup Secure |
| Leg Around Descent | Standing Tie-in |
| Cross Leg Climb (Shinny up) | Sitting Tie-in |
| Cross Leg Secure | Instep Squeeze |
| Cross Leg Descent | Inverted Hand and Secure |
| Stirrup Climb | Rocking Chair |

Horizontal Rope

Hand follow hand grip



Hand over hand



Hand and leg (sloth walk)



Side seat



Front lying



Oblique Rope

Hand follow hand



Hand over hand



Sloth walk

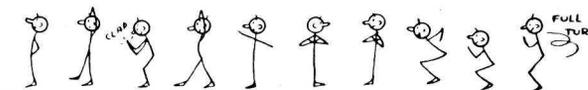


Jumps**

Forward jumps



Backward jumps



Tumbling

Mimetic Locomotion

Frog jump



* Refer to Chapter IX and pp. 168, 305, 310, 334, 397 and Syllabus.

** Refer to Chapter X and p. 214 and Syllabus.

Squirrel jump



Seal crawl



Bear walk



Duck walk



Crab walk



Elephant walk



Tumbling Stunts

Forward roll



Forward roll from stand



Running forward roll



Shoulder roll



Backward roll from squat position



Backward roll from stand



Forward roll from stand to lying on back



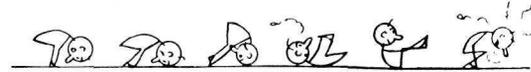
Forward roll clasping shins



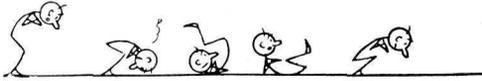
Forward roll clasp hands under thighs



Forward roll grasping toes



Forward roll with arms folded



Forward roll using one foot



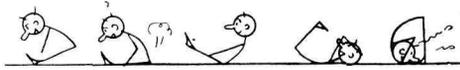
Frog head balance and forward roll



Backward roll from stride stand



Backward roll with feet together and legs straight (Kip position)



Sideward roll



Fish flops



Momentary hand balance, snap down to stand



Breakfalls*

Crouch fall forward



Crouch fall backward



Drag fall forward



Knee chest fall forward



Head tuck fall



* Refer to Chapter V and Syllabus.

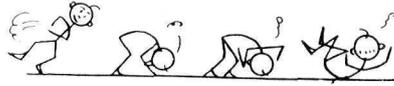
Shoulder tuck forward



Backward fall



Sideward fall

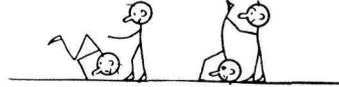


Trip fall

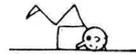


Balancing Activities*

Partner armstand



Frog head balance



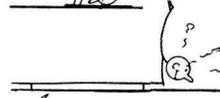
Frog hand balance (squat balance)



Head balance



Hand balance



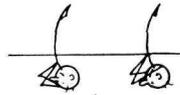
Head balance, arms folded



Press from frog head balance to head balance



Elbow balance (Hands under head and behind head)



Forearm (tiger) balance



Forward roll to head balance



Handwalk



* See Chapter X.

Vaulting Activities*

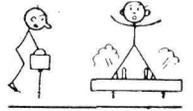
Jump to squat stand



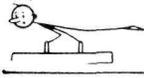
Squat vault



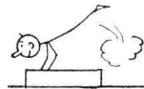
Straddle stand



Low front vault



High front vault



Wolf vault



Straddle vault



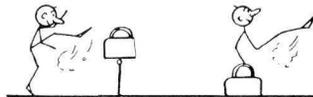
Knee stand dismount



Fencers' vault



Thief vault



Swan dive and catch

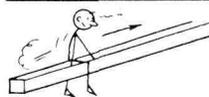


Vaulting routine



Balance Beam**

Travel in side straddle seat



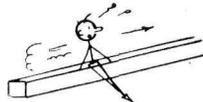
Travel in cross straddle seat



* See Chapter VIII.

** See Chapter X and Syllabus.

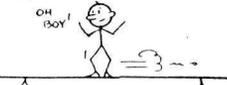
Travel in side seat



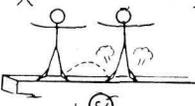
Walking forward



Travel, stepping sideways



Jumping sideways



Hopping forward on one foot



Running forward



Cat walk



Duck walk forward



Duck walk sideways



Pirouettes



Passing—One sit—One step over

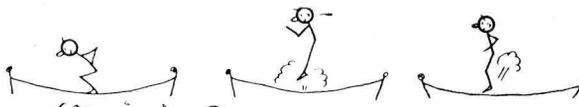


Passing in standing position



Trampoline Activities*

Controlled bounce



Sit drop



Knee drop



* See Chapter XII and Syllabus.

Three-quarters forward turnover
piked



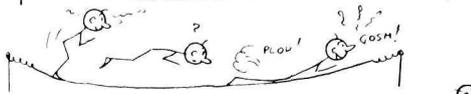
Three-quarters forward turnover
tucked



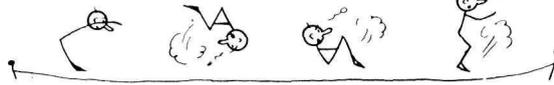
Back drop



Front drop (Elementary form)



Forward tucked turnover to stand
(Forward somersault)



Backward open turnover to stand
(Backward somersault)



SUPPLEMENTARY MATERIAL FOR PARTNER STUNTS (DOUBLES BALANCING AND DOUBLES TUMBLING) AND PYRAMIDS*

Backward roll over back



Back to back toss



Double turnover holding waists



Double roll forward and backward
(Monkey roll)



Triple lateral rolls or parallel rolls



Snap over



Belly Swan balance



* See Chapter X.

Shoulder, hand, knee balance



Chest stand



Low shoulder to shoulder balance



Low hand to hand balance



Chest balance on partner's back



Foot to hand balance



Thigh mount facing in—Hand to neck and foot to thigh



Thigh mount facing in—Jump to thighs



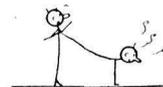
Thigh mount facing out—Jump to thighs



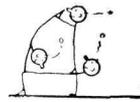
Thigh mount facing out—Neck to crotch



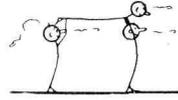
Two men pyramid



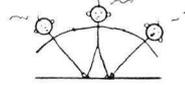
Three men pyramid—Kneeling



Three men pyramid—Standing



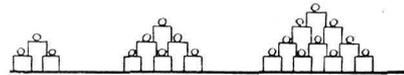
Three men fan pyramid



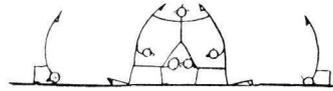
Three men pyramid—Hand balance



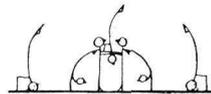
Squash pyramid



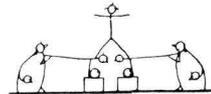
Seven man pyramid (low)



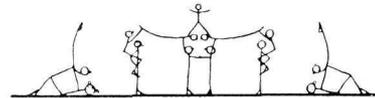
Seven men pyramid (high)



Nine men pyramid



Thirteen men pyramid



**WORK IN THREES
WHEN PRACTICING
DOUBLES!**

APPENDIX III

ELEMENTARY PROGRESSIVE GYMNASTIC STUNTS* SUPPLEMENTARY MATERIAL FOR PRIMARY, INTERMEDIATE AND OPERATIONAL BASES

This additional material is offered to instructors who may wish to introduce additional activities. The following material is organized specifically for this purpose.

*Springboard***

Apparatus:

Springboard; several mats; cane pole; basketball or 9# medicine ball.

Arrangement of Apparatus:

Caution! Be sure to place a mat over legs of the springboard.

2 or 3 narrow mats for runway; 1 mat under springboard; double mats to alight on; single mat to complete forward roll.

Spotting:

Stand on mats closely in front of springboard. Be especially alert to spot turning in the air stunts. The springboard is a dangerous piece of apparatus. *Use every precaution!*

Teaching Hints:

Don't run at springboard; 4 or 5 steps are sufficient!

Hit board with 1 foot and then on end of springboard with both feet! (1-2 count, spring).

Keep head up!

Ride the board on its upward spring with a stiff knee!

Progressive Stunts:

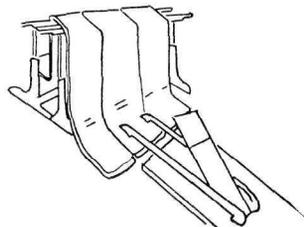
1. Spring from board several times to get feel of board; not too high; body under control.
2. Spring from board; *not too high*, use arms for balance; dismount with $\frac{1}{4}$ turn right; feet slightly spread on landing.
3. Same as #2, with $\frac{1}{2}$ turn.
4. Same as #2, with $\frac{3}{4}$ turn.
5. Same as #2, with full turn.
6. Same as #1, clap hands once.
7. Same as #1, clap hands twice.
8. Same as #1, clap hands once and spread legs.
9. Same as #1, touch toes, knees bent.
10. Same as #1, touch heels, knees bent.
11. Same as #1, click heels together.
12. Same as #1, touch toes, legs straight.
13. Same as #1, catch ball in mid-air, tossed by leader.
14. Same as #1, spring over cane pole.

* These suggestions should be helpful to instructors at the Primary Intermediate and Operational Bases and for intramural gymnastic coaches at the Pre-Flight Schools.

** See p. 236.

Springboard and Elephant**Apparatus:*

Springboard and Elephant; 1 set of parallel bars; 1 springboard; several good size mats.

Arrangement of Apparatus:

Raise parallel bars so 2 holes are showing.

Cover bars with 1 extra large heavy mat or 2 good sized medium mats. Be sure mats will not "sink through" the bars.

Place mats as in diagram.

Place springboard close to "elephant."

Be sure to cover the *end* of springboard close to elephant.

Spotting:

Place a spotter on spots marked X on both sides of the elephant.

Place spotter in position out of the way of the performer, yet close enough to break or prevent a fall.

Caution and coach performer while doing the stunts.

Teaching Hints:

All stunts can be dangerous. Allow no "horse-play," "showing off," or remarks from the other performers.

Keep mats close together.

Keep springboard close to elephant.

Progressive Stunts:

1. Spring from board; squat stand; forward jump dismount.
2. Same as #1, perform $\frac{1}{4}$ turn right on forward jump dismount.
3. Same as #1, perform $\frac{1}{2}$ turn right on forward jump dismount with a backward roll.
4. Spring from board; straddle stand; forward jump dismount with a forward roll.
5. Spring from board; flank vault to the right.
6. Same as #5; flank vault to the left.
7. Spring from board; low front vault to the right with a shoulder roll after the dismount.
8. Spring from board; low front vault to the left with a shoulder roll after the dismount.

* See pp. 76, 158.

9. Spring from board; squat stand on near bar; take squatting position; place hands in reverse position on near bar; duck head, and forward roll dismount. (Spotter stands close and cautions performer not to "kip" but roll off easily with knees tucked in close.)

10. Spring from board (no run), stand on end of springboard, place hands on near bar, forward roll over bar; spotter use same precaution as for #9. Be sure spotters are placed on both sides of the elephant. Caution performer to duck his head, lift hips high.

11. Spring from board with short quick steps and perform #10.

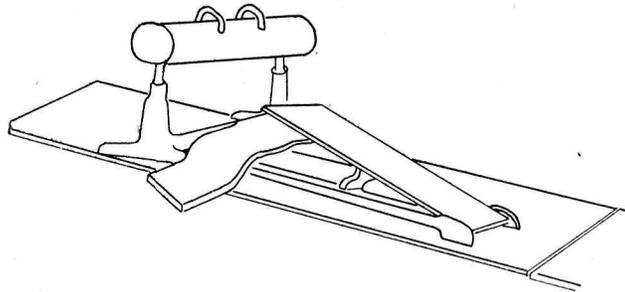
12. Lower the parallel bars, have 3 catchers. Performer does a swan dive over elephant. (Coach: caution performer to dive for height, arms stretched out side-ward, legs together, head up.)

Springboard and Horse

Apparatus:

Horse, springboard, several mats.

Arrangement of Apparatus:



Two or three mats for running.

Horse at $\frac{3}{4}$ full height.

Springboard placed close to horse; mat under springboard and over ends of base close to the horse.

Two thicknesses of mats for dismount.

Spotting:

Stand close to horse out of way of performer. Usually a good idea to slightly grasp performer's wrist.

Sweat shirt may be grasped to break or prevent a fall.

See that springboard is kept close to the horse.

See that mats are kept close together.

Double thickness mats for dismounting should be extended well beyond point of dismount to remove possibility of ankle-turn.

Magnesium on hands is advisable.

Performer's feet will slip on slick leather if he wears only socks.

Teaching Hints.

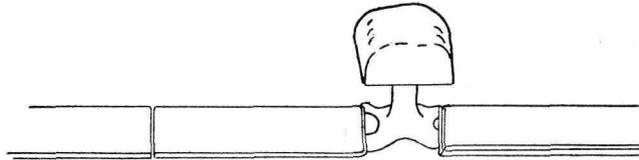
- Don't run at springboard!
- Hit board with 1-2 count after 3 or 4 quick steps for a "run." Ride the spring of the board!
- Keep head up!
- Don't hold the pommels too long!

Progressive Stunts:

1. Spring; grasp pommels; squat stand between pommels; dismount forward.
2. Spring; grasp pommels; straddle stand; dismount; forward and backward shoulder roll.
3. Spring; grasp pommels; squat vault.
4. Same as #3; straddle vault with a quick forward roll.
5. Spring; grasp pommels; flank vault right.
6. Spring; grasp pommels; flank vault left.
7. Spring; grasp pommels; slow low front vault right (same to left)
8. Spring; grasp pommels; 45 degree angle flank vault right (same to left).
9. Spring; grasp pommels; high front vault to right (same to left).
10. Spring; grasp with both hands the right pommel, straddle vault.
11. Perform #10 but place both hands on left pommel, straddle vault.
12. Perform #10 but place right hand only on right pommel (same on left pommel).
13. Spring; place both hands on horse between pommels, straddle vault.
14. Spring; grasp left pommel with reverse grasp of right hand; backward dismount over right pommel; $\frac{1}{4}$ turn, $\frac{1}{2}$ turn, $\frac{3}{4}$ turn.
15. Spring; grasp both pommels; short vault right (left leg bent, right leg extended sideward right).
16. Spring; take off with 1 foot; "short" both legs between the pommels; take off with 1 foot and then grasp the pommels. Hold momentarily. (Thief vault.)

Buck**Apparatus:*

Buck, several mats.

Arrangement of Apparatus:

Double mats for dismounts and forward rolls, 3 or 4 single mats for runway

Spotting:

Stand close to buck, in position, not to hinder action of the performer but close enough to grasp. Performer wearing only socks will slip on top of buck. *Use Caution!*

* See pp. 140, 306, 446, 454.

Teaching Hints:

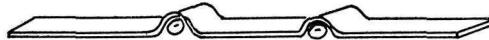
- Spring from toes of both feet!
- Push hard with hands on dismount from the buck!
- Keep head up!
- Think!
- Keep the line moving on quick action stunts!
- Work from simple to fairly difficult stunts!

Progressive Stunts:

1. Spring squat stunt; dismount to squat balance on floor.
2. Squat vault.
3. Straddle vault, both hands placed on buck.
4. Straddle vault, right hand on buck; left hand held behind back.
5. Straddle vault, left hand on buck; right hand held behind back.
6. Straddle jump, hands are not placed on buck.
7. Squat vault, spur with right heel.
8. Squat vault, spur with left heel.
9. Squat vault, spur with both heels.
10. Standing forward roll over buck. (Neck spring, no kip.) Just a slow forward roll, hands to chest.
11. Jumping forward roll over buck. (Neck spring, no kip, just a slow forward roll, knees to chest.)
12. Scissor vault over buck.

Tumbling**Apparatus:*

24 feet of mats; 2 rolled mats and 2 tackling dummies covered with a mat.

Arrangement of Apparatus:*Spotting:*

Not necessary in simple stunts. Verbal caution, and coaching suggestions will aid the performer.

Teaching Hints:

- Demonstrate stunt; then slowly to emphasize correct performance.
- Verbal help after each trick will encourage the performer.
- On some stunts, have the whole group work at the same time, work on command; all performers line up on side of mats. On other stunts, each individual should use the length of the mat.
- Always use "quick action," "everyone busy" stunts that all can perform but difficult enough to offer a challenge.

* See pp. 77, 216, 307, 316, 319, 373, 396, 400, 442, 444.

Progressive Stunts:

All performers line up on side of mats.

1. Jump with different degrees of turns; $\frac{1}{2}$, $\frac{3}{4}$, full, etc.
2. Push-ups; clap hands; once, twice.
3. From prone position; sit through between arms.
4. Head balance; elbow balance.
5. Forearm balance; palms down; forehead on floor.
6. Forearm balance (tiger stand) palms down; forehead not touching floor.
7. Squat balance.
8. Squat balance to forearm and head balance.
9. Agility. From standing position; squat, prone. Turn left or right; squat. stand. Repeat 4 times in 12 seconds.
10. Skipping forward and backward over leg.
11. Forward rolls.
12. Backward rolls.
13. Sitting position; legs straight; grasp toes; rock back to shoulders; come back to sitting position.
14. Sitting position; grasp ankles outside of legs; backward roll.
15. Squat; grasp toes; backward roll.
16. Squat; grasp toes; forward roll.

Performers Using Length of Mat:

1. Series of forward rolls. One forward roll, then on way back to starting line; walk a 10 foot line 2 feet wide; 2 forward rolls; 3 forward rolls; 4, 5, etc.
2. Series of backward rolls.
3. Forward rolls; ankles crossed; stand; backward roll.
4. Shoulder rolls; thrust arm between the legs; come fast to feet and with feet spread. (Use a stop watch).
5. Do a forward, backward, and shoulder roll against time. (Use a $\frac{1}{5}$ stop watch).
6. Jump and roll (2 performers). Both face each other, 4 feet apart. A forward rolls, B straddle jumps A; A comes to feet, about face; B forward rolls toward A; A straddle jumps B, etc.
7. Jump and roll (3 performers). B and A stand facing C. All are about 4 feet apart. B forward rolls toward C. C straddle jumps B. B does forward roll toward A, turns and all repeat.
8. Double forward rolls (2 performers). A lies down; B straddle stands A's head. A grasps B's ankles. B grasps A's ankles and forward rolls.
9. Double backward rolls, same as #8 except perform rolling shoulder rolls. The 3 performers stand facing in the same direction, about 4 feet apart. The center performer starts the stunts by rolling to his left.
10. Snap up with assistant sitting at head with feet (insteps under shoulders) for lift.
11. Hand balance.
12. Shoulder rolls over rolled mat. Place hands on mat close to rolled mat. Do not put hands on top of rolled mat.
13. Forward rolls over length of rolled mats.

14. Divide the group into half; one group lines up for shoulder roll on the rolled mats; the other lines up for forward rolls on the rolled mats. Alternate one from each line, changing stunts; keep the line moving fast.

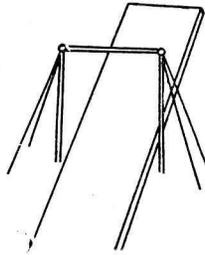
High Bar*

Apparatus:

High bar, and mats.

Arrangement of Apparatus:

Bar locked at its highest position. Mat or two mat thickness placed directly under bar. Swinging exercises will call for extended mats.



Spotting:

Stand in best position to break fall!

Caution performers to use magnesium or pound hands on mat to get dust on them!

Be sure performer has proper grasp, thumbs around the bar!

Stop the swing on stationary stunts!

Spot every trick!

Think!

Teaching Hints:

Demonstrate; stress safety precaution on spotting for each event!

Select leaders as spotters or command each performer to spot the succeeding participant.

Progressive Stunts:

1. Skin the cat; drop off.
2. Skin the cat; pull back through.
3. One leg whip-up to one leg seat rest forward dismount (single knee circle forward).
4. Chin 1 time; ordinary grasp.
5. Chin 1 time; reverse grasp.
6. Chin 1 time; reverse grasp touch chest.
7. Chin 1 time; reverse grasp, with right hand; left hand grasping right wrist.
8. Chin 1 time; ordinary grasp, wide arm.

* See pp. 59, 66, 69, 97, 271, 299, 315, 319, 329, 393.

9. Chin 1 time; ordinary grasp, wide arm touch back of neck.
10. Chin 1 time with middle two fingers of each hand.
11. Chin 1 time, pull up to a chin, let go with left hand and come down as slowly as possible.
12. Chin 1 time; reverse grasp with right hand; left hand grasp right bicep.
13. Chin 1 time with 12 lb medicine ball held between ankles.
14. Hock hang.
15. Hock hang; dismount on forward swing.
16. Muscle-up.
17. Monkey hangs.
18. Belly grinds (hip circles around bar).
19. Most chins in 10 seconds (use stop watch). Use reverse grasp.
20. Forward swing dismount over cane pole.

Balancing Stunts*

Apparatus:

Rolled mats; medicine balls; tackling dummies; small mats; chairs.

Arrangement of Apparatus:

Arrange the mats so that each group of 5 will have plenty of room.

Spotting:

On all balance tricks spotters must be close enough to break a possible fall. Remember an 8 or 10 inch fall on the back of the neck may be serious. Shoulder mounts should be carefully spotted because the bottom man may hold on too long if the top man becomes overbalanced. Use ceiling safety belts.

Teaching Hints:

Give stunts that are not too difficult. Spot closely when handsprings from rolled mats are executed. Danger of falling on back of the neck.

Pair Stunts:

- A, Top Man; B, Bottom Man
1. Shoulder mounts; front, rear.
 2. Stand free on shoulders of B; B walk forward.
 3. B lies down, knees flexed, feet slightly spread and on the deck, arms stretched upward. A places hands on B's knees, leans forward and shoulders are grasped by B. A kicks up into a shoulder-knee balance.
 4. Same as #3 except A continues the balance by shifting one hand at a time to each arm of B, thus doing an arm balance.
 5. B lies down on back. A straddles B and grasps B's outstretched arms. Kick into an arm and arm balance.
 6. B lies down, arms are outstretched over head, palms turned upward. A stands in the hands. B lifts A into a hand and foot balance. Two spotters are necessary. A places his hands on top of head of each spotter. Each spotter stands on each side of B close to his head. After getting balance, A lets go his hold on spotters.
 7. B stands with legs spread. A lies down, head toward B; both grasp arms with double wrist lock. A hugs knees closely to the chest. B is then lifting and swings

* See pp. 77, 184, 190.

from the deck in this position and then is forced forward to a short underswing dismount.

Barbells, Low Bar, Inclined Ladders and Balance Beam

Apparatus:

Barbell set, low bar with mats, long horse with mat. Inclined ladders and iron rails (balance beam).

Arrangement of Apparatus:

Assemble all in one corner.

Adjust 50 lbs on sets. Place on a large mat.

Low bar with mat between bars and on each side.

Inclined ladders with mats under ladders; plenty of magnesium handy.

Balance beams, placed end to end.

Spotting:

Barbells

Caution barbell men to use legs in picking up weight; don't show off by trying to lift too much weight.

See that clamps on end will not slip off.

Low Bar

Stand in position to assist in hand or shoulder balances.

Inclined Ladders

Walk along side of each performer. Place hands behind back.

Balance Beam

No spotting necessary. Caution about socks slipping on rails.

Teaching Hints:

Barbells

Use weights that all can handle safely.

Give a certain number of times for each exercise. Suggest not more than 50#.

Have the first man set a record and the next try to break it.

Have each man keep track of his record, and the next time try to break it.

Use resistance in all exercises. Work going up and going down. Muscles are developed both ways. Explain the two sets of muscles to be developed, the flexors, and the extensors.

Never lift too much weight by bending over with legs straight.

Low Bar

Emphasize correct form, especially on press-ups; body must be straight; dip deep between bars.

Inclined Ladders

(Same as for *Low Bar*)

*Balance Beam**(Same as for Low Bar)**Progressive Stunts:**Barbells*

1. Warm up with quick bending and stretching exercises, especially for the back.
2. Arm curls; stand erect, use a reverse grasp on bar, shoulder width. Curl bar upward slowly, elbows not touching body. Slowly let down to full length of arms, barbells resting on front of thighs, at least 10 times.
3. Extension press-ups. Stand erect. Hold bar with full extension of arms downward and resting on thighs. Bring bar to chest, extend over head; eyes on bar, return, 15 times.
4. Shoulder rolls. Stand erect. Hold bar with full arm extension. Rotate the shoulders forward and backward.
5. Pumper, bend forward, right leg flexed at knee. Lift leg half flexed backward. Grasp bar, pull up to chest and let down. Do not let weight touch floor. (See chart for regular routine).

Low Bar

1. Shoulder balances and press-ups to hand balance (use an aid to help lift).
2. Hand balances.
3. Dips, toes on the bar.
4. Back dips; heels anchored; legs straight; hands placed well back. Exercise: sit but do not touch floor; arch back on uprise.
5. Turn-table. Sit at $\frac{1}{2}$ lever; turn completely around.

Inclined Ladders

1. Walk one rung at a time.
2. Walk two rungs at a time.
3. Jump from rung to rung with both hands. (*Very dangerous!* Be sure to spot and have mat under ladders.)
4. Walk with hands on top of ladders.
5. Walk with hands both on same side of top of ladder.

Balance Beams

1. Walk with eyes open
2. Walk with eyes closed
3. Hop on one foot
4. One leg dips

Self-Testing Activities

1. Chins
2. Dips on floor
3. Push-ups on fingers from the floor
4. Left side support, lifting right leg
5. Right side support, lifting left leg
6. Flutter kicks on belly

7. Flutter kick on back (feet don't touch). Kick from hips
8. Vertical jump
9. Leg lifts and hands behind head
10. 25 leg lifts and 25 sit ups. (Increase dosage)
11. "V" position for 2 minutes
12. $\frac{1}{2}$ lever for 10 seconds
13. Skin the cat (number of times)
14. Rope climb for time
15. Dips hitting hands on chest before landing on hands
16. Agility test (24 counts in 12 seconds)
 - Count 1—squat position
 - Count 2—front support
 - Count 3—squat between hands to break support
 - Count 4—turn left or right
 - Count 5—squat position
 - Count 6—erect position
17. Deep knee bends

Trampoline*

Apparatus:

Trampoline (if available)

Arrangement of Apparatus:

Place trampoline in open spot on gym floor.

Spotting:

The trampoline can be a very dangerous piece of apparatus if it is not supervised properly. Adequate measures must be taken to protect the performer. At least one spotter should be placed at each side of the trampoline, but it is better to have two men at each end. In addition, a safety belt to be used in learning difficult tricks should be installed above the trampoline.

Teaching Hints:

Smooth bouncing should be mastered.

Proper use of the arms for maximum spring and balance should be learned. The arms should come up with the canvas and go down with the canvas. The arms should not swing in circles behind the body, but the circles should be made in front of the body.

The feet should be kept about 10" apart upon landing on the canvas. Bring feet together in the air.

The performer should learn to "kill" the spring by bending the knees upon landing. Thus he can control the situation if he makes a mistake and he will not be hurled from the trampoline when off-balance.

The tricks on the trampoline should be learned from the simple to the difficult. There is a tendency to under-estimate the difficulty of the stunts because they look so easy when they are performed smoothly.

* See pp. 239, 314, 447, 461.

Work with light shoes. If basketball shoes are uniform, it is better to work in socks.

Keep in the center of the trampoline. Paint a huge circle in the center of the canvas to aid the performer.

Keep eyes on the edge of the canvas. Visualize the complete trampoline.

Land on balls of feet and rock to the heels.

Progressive Stunts:

1. Bounce on feet; full turn to feet.
2. Land on knees, then to feet (body erect).
3. Land on knees; full turn to knees.
4. Land on knees; full turn to feet.
5. Land on feet; full turn to knees.
6. Land on seat (legs straight); hands on canvas.
7. Land on seat; then half turn to feet.
8. Land on seat; then half turn to seat.
9. Land on seat; then half turn to back.
10. Land on seat; then full turn to feet.
11. Land on seat; then full turn to seat.
12. Land on back (chin in chest); then to feet.
13. Land on back; then to knees.
14. Land on back; then to seat; then to feet.
15. Land on belly; then to feet.
16. Land on belly; then to seat.
17. Land on belly; then to knees.
18. Land on belly; then to back.
19. Land on belly; then twist and turn to belly.
20. Land on back; one-half twist to feet.
21. Land on back; one-half twist to back.
22. Forward roll on trampoline.

**Refer to the Gymnastics and
Tumbling Syllabus for further
details and for program changes.**

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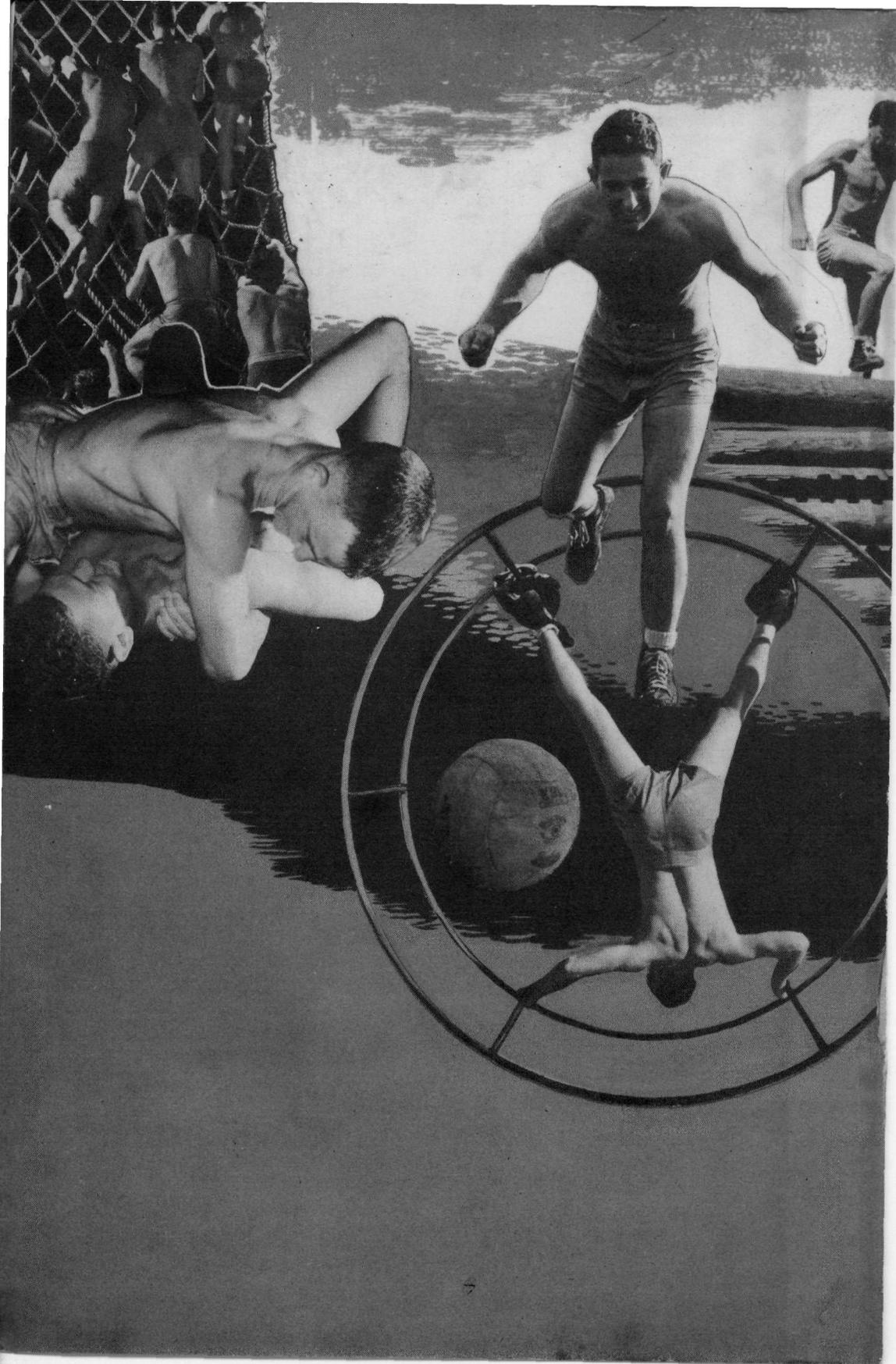
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TONS

(Continued from front flap)

wrote the manuals now appear with the committees of revisions opposite the title page, and we deeply regret that space does not permit acknowledgment of the contribution of literally hundreds of others whose assistance was substantial. The original edition of these manuals was completed in 1943 under the direction of Commander Frank H. Wickhorst, USNR, Head of the Naval Aviation V-5 Physical Training Program at that time.

These books have found a wide usage in the civilian field of instruction in sports and have been adapted as text books and coaching manuals throughout the country. The Navy, recognizing the valuable service the manuals perform, authorized the V-Five Association, a peace time non-profit organization, whose nucleus is the above group of officers, to revise the books. The revisions are aimed to make the volumes fully up-to-date, with added material to treat with new techniques and emphasis, and to adapt the experience and lessons learned for instruction in proper gradations at the college and high school level.

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T. J. HAMILTON
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Director of Athletics
University of Pittsburgh

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