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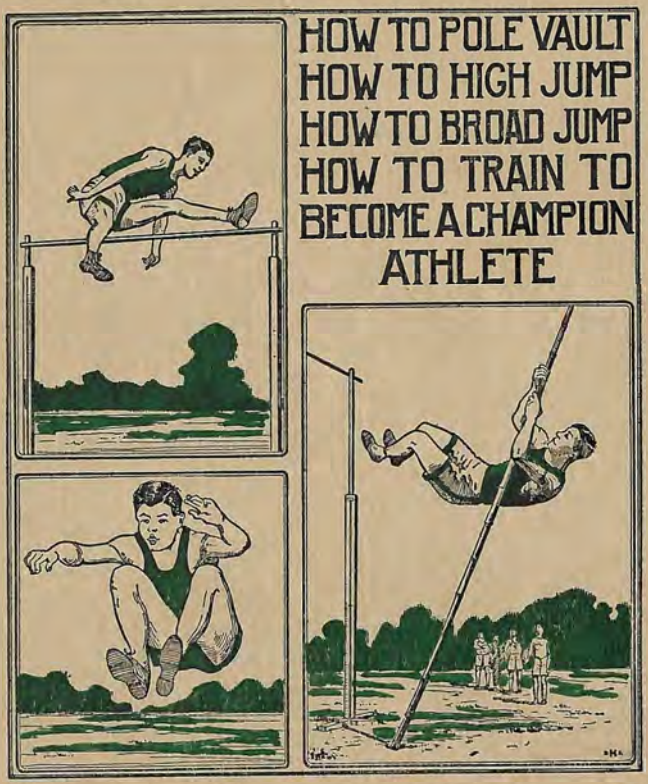
BOY ATHLETICS



HOW TO POLE VAULT
HOW TO HIGH JUMP
HOW TO BROAD JUMP
HOW TO TRAIN TO
BECOME A CHAMPION
ATHLETE

GILBERT
Boy Athletics

Including

How a Boy Should Train To Become a Champion Athlete
by Johnny Mack, Athletic Trainer, Yale University.

Pole Vaulting
by Alfred C. Gilbert, World's Champion Pole Vaulter at Olympic Games, London, 1908.

How To Broad Jump
by Edward J. Farrell, Harvard Field Coach.

How To High Jump
by Johnny Mack, Athletic Trainer, Yale University.

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FOREWORD

Hello Boys! Good health is the basis of the success of many of the men you see prominent in affairs of today. Their bodies are clean and healthy, their muscles developed and their minds have been trained to think quickly by the athletic games they have played.

Go in for athletics boys! But be sure you start right.

The men who have joined me in the preparation of this book are all experts in their particular lines. They are men whose life work has been the training of champion athletes. You are extremely fortunate to have the benefit of their advice and instruction.

Sincerely yours,

A. C. Gilbert

HOW A BOY SHOULD TRAIN TO BECOME A CHAMPION ATHLETE

By JOHNNY MACK
Athletic Trainer, Yale University

It has been my responsibility to instruct, train, and develop many athletes, and I want to say right in the beginning that the greatest disadvantage, by far the greatest obstacle I have had to contend with in trying to develop champion athletes, is to correct old styles, wrong methods and poor form acquired before coming to college—acquired by young boys who have been taught wrong in the beginning, or who have never had any athletic instruction at all, and have tried to learn by their own methods.

The best advice I can give any boy, if he is at all interested in any branch of athletics, is to learn the correct way in the beginning, and then he will not have to unlearn things afterward. You, no doubt, are familiar with the expression commonly used among good athletes—"good form."

Good Form. Ninety-nine out of a hundred times it is safe to say that it makes no difference how wonderful your physical development may be—or how naturally athletics may come to you—if, in your respective athletic event, you have not acquired good form or correct methods, the chances are pretty limited for your ever becoming a champion athlete. Therefore, the first essential is to get someone who knows how to teach you, or read and study from authoritative books to assure yourself of a right start in the right direction, so that you will not begin by acquiring bad form which takes months, yes years, to correct.

DON'T THINK YOU HAVE TO BE A NATURAL ATHLETE

There seems to be a pretty general opinion among most people that athletes are born and not made. Nothing could be further from the truth. I have had occasion to study the life history of some of the world's greatest athletes, and I want to tell you, boys, that it has not been the natural qualifications or the natural physical development that has made the best athletes nearly so much as the one essential which, to my opinion, is the most important thing in becoming a champion athlete. That one essential is—everlastingly keeping at it with perseverance, determination, and courage. I feel perfectly safe in saying that if any young man will start off with a firm determination that he will keep everlastingly at it, and will not let anything discourage him, he will, in time, make a success of whatever branch of athletics he goes in for. This sort of determination, stick-to-it-iveness supplemented with proper instruction in the beginning, will go further toward making a champion athlete out of a young man than all the natural qualifications he may have inherited.

The thing to do, if you are going to go into anything, is to make up your mind early in life that you are going at the thing with the idea to win.

THE "NEVER DIE" SPIRIT

If you go at it in this spirit—even though you do not become a champion athlete in the end—you will be well repaid, for this is a character-building qualification that will be helpful when you go out into the world to do other big things.

DON'T GET THE "BIG HEAD"

If you have gone into athletics determined to make a success of it, and are beginning to show results that make you pretty well satisfied with your work, don't let it turn your head. As they say in athletics, don't get the "big head." The associations you form in athletics will mean more to you in after life than, as a boy, you possibly can imagine. This is one of the greatest opportunities that athletics offers young men, for in all branches of athletics you will find red-blooded men—the men who do things in after life, who have developed that character of going about things that stands for leadership. You will deprive yourself of

many of the best things in life if you fail to win the friendship of your associates, or make them despise you by boasting about yourself. Let the results you accomplish speak for themselves.

BE A GOOD LOSER

In order to do this, it means you must be a good loser. Put all you have into the game and go in with the spirit to win. Fight with that determination that stands for leadership and success. Do not belittle yourself and do not lose the admiration of friends who respect you for qualities of determination and stick-to-it-iveness. Be a good loser when you are beaten; always congratulate the winner, thereby developing personality that will mean more to you than all the success you will gain by achievement.

SCHOLASTIC STANDING

I have seen many young boys enter college with prospects of becoming champions; prospects of winning their way to leadership. But they neglected their school work and lost the opportunity. The requirements today in schools, colleges, and universities are such that no athlete can afford to neglect his studies. Therefore, you must make up your mind that you want to make a good record for yourself in your class as well as on the athletic field, and remember always that there are two parts to education—the part you get inside in the class room, and the part that you get outside, from your association with the fellows. They are both important and you cannot neglect one at the expense of the other.

Far too many young men do not take this phase of athletics seriously enough. They do not seem to realize that they will not be permitted to compete in athletics unless they are up to standard in their studies; and the foundation you make in the preparatory school will make it all the easier for you when you get into the big university. Therefore, do not enter college with a handicap that may keep you from becoming a success.

PHYSICAL REQUIREMENTS

There are really no set physical requirements for an athlete. What one expert may say about proper development, size, and so forth, may all be thrown to the wind by some little shaver coming along

and breaking all preceding records. However, there is no doubt that the big man is apt to be more qualified as a hammer thrower, or shot putter, or football player, than a small man.

The main thing I want to impress upon you is that it does not make any difference whether you think you are too small, or light, or weak, or that some of your good friends will laugh at you when you go in for athletics. Just forget all this and have the right kind of stuff in you. The physical requirements that appear to you to be lacking, will gradually develop, and with the right kind of determination you will find that these hindrances amount to nothing. You will soon overcome them and make yourself worth while.

PHYSICAL EXAMINATION

In most big institutions you are not permitted to go into athletics unless you have had an examination by a physician. It is just as important as any other factor that young men who enter into athletics should know what their physical condition is. For this reason a physical examination is imperative. It is too often neglected by young men. The importance of it cannot be overestimated, because there may be some little physical defect that can be easily overcome with proper instructions in the beginning.

You sometimes hear people talk about athletics hurting a young man. The only time that athletics hurt a young man is when he takes them up while he has some physical defect of which he was not aware. As a general rule this physical defect could have been easily remedied with the proper care or instruction. Therefore, take my advice and find out about these things in the beginning.

COMPETITIVE ATHLETICS

A man without nerve, determination, or courage can exercise in a gymnasium and enjoy the benefits of training, but the joy of competition will never belong to him.

I think it, however, a great misfortune that young boys in preparatory schools are thrown into competitive athletics when too young. By this I do not mean that a reasonable amount of competition is not good for the young man. It is ofttimes the case that boys will go into a great number of events to help out their school in championship meets. This is too much of a tax upon the strength

of the boy who hopes some day to be a great athlete. He should conserve his strength in youth so that when he comes to the peak of his training, during those days when he goes to college, he will have a big reserve of energy in order to do those big things that make world champions out of men.

My sole object in writing this paragraph is to impress upon you that you should not try to go into too many things or do too many things when you are in preparatory school. The thing to remember, then, is that the future is still in front of you, and the great big things in life and the things that are going to mean most to you, are the things that you will do in the college or university. I know that it is a hard thing for a boy to hold himself in check when he is anxious to help his school in every way; but not to do so will be a great misfortune, one that he will regret later when he is called upon to do the most that is in him for his university. He will find then that he has outdone himself too early in life.

AT WHAT AGE SHOULD A BOY BEGIN

There is no set age when a boy should take up athletics. I would say the best time is when he has made up his mind that he wants to go into training; but, as I said in the beginning, when he does make up his mind that he wants to go into them, he must learn how to go about it right. However, at whatever age he enters, the main thing is not to overtax himself too much in the beginning. He should work up gradually. Never let anybody put you to a task which is beyond your power to accomplish, or that taxes you too much in the early years of your life. Start early if you want to, but go about it systematically.

PROPER TRAINING

A very silly idea prevails in the minds of most people about the proper method of training. It is an old-fashioned idea that an athlete should make great sacrifices regarding his diet. Special dieting does not hold the important position it once held in athletics. Modern trainers have assumed the common sense idea that the essential thing is to eat good food, properly masticate it, live a natural, healthy life, and you will be following the proper course that an athlete should follow. This does not mean that you have to deprive yourself of a reasonable amount of good things, like pies

and cake, that most boys are fond of. Smoking is one thing that every boy must make up his mind not to do. Live a good, vigorous, healthy outdoor life, with regular hours of sleep, and see that your room is well ventilated with fresh air. The very best sort of thing that a young man can do is to develop the habit when rising to go through some simple calisthenics that will invigorate him, and follow them with a good rub.

All that I have said may be summed up in a very few words, but they mean success or failure in athletics.

1. Determination to keep everlastingly at it and never become discouraged.
2. Avoid forming bad habits in the beginning, by getting competent instructions.
3. Don't think your natural physical make-up is a handicap to your becoming a successful athlete.
4. Common sense, plain, healthy living.
5. Remember you must keep up in your studies.
6. Be sure to get a physical examination before you go into athletics.
7. Don't forget your exercises in the morning, with a cold shower and a good rub. It only requires a few minutes, but it will mean much to you in later life.

POLE VAULTING

BY ALFRED C. GILBERT

WORLD'S CHAMPION POLE VAULTER AT OLYMPIC GAMES, LONDON, 1908

RECORDS

World's Record—New York City, 1907 .....12 ft. 3 inches
World's Record—Philadelphia, 1908 .....12 ft. 7¾ inches
Championship of the World, London, 1908 .....12 ft. 2 inches
World's Record (Unofficial), Westville, 1909 ...13 ft. 2 inches

Pole vaulting is always an interesting and fascinating event in the program of track athletics, because it is very spectacular, and combines running, jumping, and gymnastics.

The first advice I would give a boy who is going to take up Pole Vaulting would be to make up his mind that he has got to keep everlastingly at the thing, for a great deal of patience and perseverance will be required of him before he really succeeds.

The next important thing, having made up your mind, is to learn to pole vault in the proper and scientific way, for all the practice in the world will be of no avail unless you decide that you are going to learn the only correct method of pole vaulting. If you practice in a haphazard, old-fashioned way, like most boys do who are learning, you will never become a champion.

I look back to the time when I was a boy and I remember that I became very discouraged because it seemed to me that I advanced very slowly and the chances of ever becoming a champion were very obscure, to say the least. However, I had one qualification that builds for success, whether in athletics or business, and that is keeping perpetually at the thing, regardless of the many discouragements, failures, and defeats that come to the beginner.

I do not think that there is any better advice that I could give to any boy than that if he makes up his mind to do a thing, he should do it right. You will never stand for leadership unless you make it a habit to learn all the fine points of the game. It is learning all the fine points of the game that puts you ahead of the other fellow. Learn the habit of being successful, for nothing succeeds like success.

THE POLE

When I began Pole Vaulting I learned with a wooden pole; but just after I came to Yale I read of a Japanese who had made quite a record for himself using a bamboo pole. So an old teammate of mine, who is also a World's Champion Pole Vaulter, and myself, succeeded in getting hold of some bamboo poles, and we introduced the bamboo pole into American Pole Vaulting. It has been the standard ever since. My advice would be to secure from any sporting goods dealer a bamboo pole, about ten feet long. State that you want it for a boy who wishes to begin Pole Vaulting and he will, no doubt, give you a pole of the correct weight.

There is no definite or standard length to the pole. I vaulted 13 feet with a pole 12 feet, 6 inches long, although the average pole vaulter today uses a pole from 14 to 16 feet in length. However, this is not absolutely necessary, as has been proven from my own experience.

If you will study the photographs that I show you here, you will find that the body is lifted over a height far above the position of the hands on the pole. This is acquired by proper gymnastic training.

FIG. 1

POSITION OF THE HANDS ON THE POLE

Observe the position of the hands —with both thumbs pointing upward. See Cut No. 1.

POSITION OF THE POLE IN RUNNING

Note Cut No. 2. The pole is held parallel with the running path, so that the point of the pole is directly in line with the hole in the ground underneath the crossbar. You run in a straight line toward this hole with the point of the pole directly toward it; the pole parallel with the running path. This is what most pole vaulters, even some fairly successful ones, do not do; but it is very important that you

learn this method of holding the pole parallel with the path more than anything else. After a little while this becomes perfectly natural, and you would not think of doing it in any other way.

THE HOLE

The hole is dug below the crossbar, just in front—see Cut No. 3—about six inches deep at the back—the deepest part—and then gradually sloping off until it comes on a level with the running path about a foot and one-half or two feet in front of the deepest part of the hole. The object of this is so the end of the pole will slide into the hole naturally and smoothly and will keep it from slipping when the force of your body when you are running comes to position as you are ready to go off the ground.

FIG. 2

FIG. 3

THE SLIDE

The position of the upper hand, which is the right hand, if you are right-handed, never changes on the pole, but in the act of sliding the end of the pole into the hole, just as you are doing it, the lower or left hand of a right-handed pole vaulter, is slid up the pole just beneath the grasp of the right hand. (See Cut No. 3). Important Note: Be sure to slip the hand clear up just beneath the right hand, and do it just as you are sliding the pole into the hole. Practice will teach you the importance of doing this smoothly so that there is no jerk when your

FIG. 4

body leaves the ground. This movement, of all the movements in pole vaulting, is the most difficult one to learn. To a beginner it seems awkward and impossible; and the only way to master it is to run down the runway, slip the pole into the hole and then "jump through," as we call it in practice, not trying to clear the bar until it becomes perfectly natural to slip the hand up and master this difficult movement. With a little practice it soon becomes natural, and you do it without thinking.

DISTANCE TO RUN

Different pole vaulters run different distances. The thing is to start far enough back so you can start slowly, and increase your speed gradually, so that just before placing your pole in the hole you are running at your maximum speed. It is always well to make a mark about fifty feet back of the take-off. (See Cut No. 2.) Note the scratch on the ground where my right foot is just striking in back of the mark. I have determined in practice where this mark shall be, so my take-off will always be in the same spot. This saves changing the length of your stride in order to take off at the right spot.

Now trot up to the mark and then run at your top speed, which brings you to the take-off with the right foot just at the right spot. This also requires practice; and it is necessary to run through a few times until you find the right mark to start from. After you once find the right mark, you should measure it so you will always have it when you go out again to jump. You will sometimes find it necessary to move the mark forward or backward, depending upon different conditions. If there is a strong wind your stride will not be as long, or sometimes you feel more brisk and your stride is more lively. You must make allowances for these differences. This will all be determined with practice, and you will soon know whether you are getting too close to the hole or too far away.

SHOVING THE HANDS UP IN THE AIR

Now note Cut No. 3, and especially notice how the arms are high up in the air—that is, straight from the shoulders. It is very important that you should have the pole up as high as you possibly can reach and keep the arms straight. WARNING: Do not bend them. Keep the pole high up and in this position even after you have left the ground, for if you study Cut No. 3 carefully you will find that my arms are straight and the pole is straight over my head, even after I have left the ground a fraction of a second.

Now it is not necessary to jump as you leave the ground. You simply run off the ground. This may be a surprise to you, as most pole vaulters think of jumping. Jumping will make your movements unnatural and jerky. A smooth pole vaulter simply runs off the ground and the pole itself carries him up and over with the momentum of his weight behind it.

THE PULL

After you have left the ground, start pulling on the pole with both arms. Note Cut No. 5. It is very important that you do not pull too quickly. You will find, if you followed the photographs carefully, that I always face the bar squarely. I do not start to turn or pull until I am well up in the air, and this is where the gymnastic part comes in. It is for this reason that I advise you to do a good deal of gymnastic work in the gymnasium, so you can execute the rest of the movements easily.

Now with the momentum of the run you are able to pull yourself up with ease. Note Cut No. 5, where I have just started to pull. I have not yet started to turn the body around.

FIG. 5

THE TURN

Now examine Cut No. 6, where the body is just beginning to turn. As I said before, you do not turn the

FIG. 6

body until you are well up in the air. The whole movement, until you have cleared the bar, is all executed in a few seconds; at the same time, these movements are difficult and separate. They are well illustrated by the different photographs. The turn consists in putting your body in the position of what is known as the "hand stand" in gymnastics. This is accomplished by pulling up with hands and turning the body around, and is well illustrated in Cuts Nos. 6 and 7; Cut No. 8 shows the body completely turned around in the position of a hand stand. You will find it impossible to accomplish this unless you have made a smooth, clean get-away from the ground without any jerk. With the proper momentum—that is, a fast run—a smooth slide, arms well extended, and not pulling too quickly, you will find that you can throw your body into this position. This needs proper gymnastic training, so you will have sufficient strength in your arms to accomplish this movement.

FIG. 7

Note carefully Cut. No. 8. My arms are not quite straight. That is because I have not reached the complete "hand stand" position as yet. My arms are slightly bent, for it is just at this moment that you give the final push which throws first your feet and then your body many inches over the cross bar high above the position of the hands on the pole. If you master this you have the real secret of success in pole vaulting great heights, that is, the ability to lift your body well above the position of the hands on the pole.

When I broke the World's Championship in Philadelphia in 1908 in a tryout to see who would represent America in the Olympic games at London, I cleared the bar at 12 feet, $7\frac{3}{4}$ inches, and my pole was only 12 feet, 6 inches in length, so that the pole actually dropped under the crossbar before I had cleared it. You can see how high above my hands my body was in going over the bar; and this depends, or is the result, of that little shove or push up just before letting go of the pole.

FIG. 8

This is the last word in scientific pole vaulting, and will not be acquired until after many long weeks—yes, months—of constant practice, with patience and perseverance. But with this knowledge of the secret of proper pole vaulting to begin with, you will probably master it much quicker than I did, because this method of pole vaulting was developed after I came to Yale.

FIG. 9

The last move, illustrated in Cut No. 9, is, probably, the easiest of any because all that is required after the push up is to leave the pole behind you and throw the hands up into the air. This gives you an extra lift that will enable your body to clear the bar gracefully and successfully.

Now this is all there is to Pole Vaulting. It sounds and reads very smoothly, but when I tell you that

I started as a small boy and kept at it perseveringly for some eight or nine years, you can imagine that it is not so easy to learn as it sounds or looks. That is why I keep talking about the importance of making up your mind that if you are going to get anywhere, or do anything successfully, you especially must realize that it takes patience and perseverance to master any form or method of athletics that will put you in the top row of leaders and champions.

Therefore, you must be a red-blooded boy, and unless you make up your mind to do this thing thoroughly, there is no use starting. I hope that this little description will start some boy on his way toward becoming a champion pole vaulter; and it would, truly, be a source of pride to me if I could sometime read that one of my boy friends had broken the world's record.

A. C. Gilbert
President.

HOW TO BROAD JUMP

BY EDWARD J. FARRELL, HARVARD FIELD COACH

Photos of Edward O. Gourdin

World's Record Holder, Running Broad Jump

25 feet 3 inches

The good broad jumper must be first of all a fairly good sprinter. Alva Kraentzlein, the old University of Pennsylvania marvel who created the present Intercollegiate record of 24 feet 4½ inches, still holds the world's record for the 220 yard low hurdles. This is a race in which speed is combined with skill. Carl Johnson of the University of Michigan, who made a Conference record of 24 ft. 2 in. was very fast in the flat races, having covered the 100 yards in 9 4/5 seconds, besides being one of the best hurdlers and high jumpers in the country. Al Gutterson, University of Vermont, who at the 1912 Olympiad leaped 24 ft. 11½ inches, only a quarter of an inch behind Peter O'Conner's record, was well known for his ability over the low hurdles. Sol. Butler of Dubuque, who still holds the record of 24 ft. 8 in. for the National championships, shares the world's record for 60 yards. He covered this distance in 6 2/5 seconds when a school-boy.

This shows Edward O. Gourdin, the Holder of the World's Record in the Running Broad Jump and Edward L. Farrell, the man who taught him how to jump. Mr. Farrell won great fame as an all-around athlete, and was the Broad Jumper and Running Hop-Step-Jumper on the American Olympic Team in 1912.

Harry Worthington the Dartmouth star, who ruled in this event for over five years, holds the 300 yard record for the indoor track in Boston. Edward Gourdin, of Harvard College, the present intercollegiate, New England, and National champion, as well as world's record holder, has run 100 yards in 9 4/5 seconds and shown proficiency in the other sprints and the jumps.

The other requisites for the good broad jumper is the ability to make an actual leap high into the air; and not the elongated step on which so many would-be jumpers rely. This quality is one not generally acquired by training—no matter how assiduous. But constant practice is essential for bringing out whatever skill one may have. The best broad jumpers go as high in the air as the ordinary high-jumper. Johnson has leaped 6 ft. 2 in. in

FIGURE 1. THE RUN.

The run is easy up to the first mark which can be seen on the runway. This mark must be hit exactly right, for from this point the speed is increased and an error here cannot be corrected later. In the illustration the muscles of the legs are still relaxed, although the doubled right fist shows that every muscle will be tightened as soon as the foot has touched the check mark. Note that the eyes are fixed on the distant take-off, and the mind, as shown by the facial expression, is centered on but one thing—an earnest whole-hearted jump.

FIGURE 2. THE TAKE OFF.

This is the critical moment of the process. At this point the speed acquired by the sharp run is converted into lift. Note the determination of the athlete. The body is well ahead of the foot from which the athlete takes off; the right leg is stiffened as the right arm is swung up, thus helping to raise the left knee as high as possible. This is a perfect take off. Every available inch of the board has been used. If the right foot extended a fraction of an inch more, the jump would be a foul, for no part of the foot must show over the take off board.

the running high jump and he goes almost this height in his long jumps. Gourdin has several times jumped 5 ft. 9 in. in the high; and in the broad jump he leaps well over 5 ft. at the highest point of the jump.

But the mere being a good sprinter and a good leaper will not make one a broad jumper. These two qualities must be so coordinated as to obtain the best results. And herein lies the hardest part of jumping. The jumper comes down the runway at gradually increasing speed until he reaches the take-off, where all his effort is concentrated on reaching the highest possible elevation. The difficulty lies in making this change. At no time must the jumper think of the pit and the consequent landing. The sole purpose in the early stages of the jump is to get height. Probably the commonest fault of beginners is the tendency to reach for the ground as soon as, or before, they have attained proper elevation.

Figure 3.

In this picture the jumper has reached his full height, and the knees, aided by the arms, have been drawn up. The legs will now begin that convulsive motion that resembles running in the air.

The most important part of the jump is the landing. Most jumpers are content with the distance covered in the first motion and land in a standing position. But a study of the men who have leaped over 24 ft. will show that remarkable results can be obtained in the last few moments of the operation. Gourdin always has contended that the difference between his jumping and that of others lies in the angle of the legs on landing. The

Figure 4.

The legs have been thrust out full length thus adding many inches to the distance. The great difficulty here is to avoid sitting down and thus spoiling the effort. The jump is measured from the front edge of the take off to the first break in the soil of the pit. Note that in a soft pit, the athlete makes quite a large break, and actually lands many inches beyond what the tape will give him.

legs meet the soft dirt at an angle of less than thirty degrees.

Figure 5.

This illustration shows the strenuous effort to avoid falling back and losing any distance. The tendency is to settle down, but the head and shoulders are straining to reach forward. This shows that broad jumping is an event that taxes one throughout.

The event, while apparently one of the easiest on an athletic program, is really one of the most exacting—both on the nerves and physique of the jumper. The powerful thrust at the take-off, the kick in mid air, and the hard shock at the landing, all call for great muscular development of the front part of the thigh. But while the average jumper is a big, muscular athlete, the smaller man has won no small measure of success. The larger man has the momentum; the smaller man has the spring. Gutterson, Kraentzlein, Butler and Gourdin are all men of about six feet, weighing over 160 lbs. But against this array we have a Worthington, and a Johnson, who were tall and slight.

The broad jump is made from a "Take-off" board, eight inches wide set flush with the ground. The jumper lands in a "Pit" of soft earth, alone or mixed with equal portions of sawdust, extending from a point about twelve feet from the Take-off to a point about twenty six feet. Of course no athlete will clear this distance; but the additional room is needed for the pitch forward after landing. And as the jump is measured from the front edge of the take-off to the nearest break in the pit, the athlete really jumps farther than the tape indicates. Five feet in front of the Take-off there is drawn a white balk line. Whenever the athlete finds that his step is not coming just right, he must stop before he crosses the balk line or the effort will

Figure 6.

The jumper has succeeded in lifting his weight over his knees and is now assured a safe landing. The strain is over; the muscles are relaxing; and the athlete once more becomes conscious that there is an enormous crowd witnessing his efforts.

A

Sol Butler, Famous Dubuque Athlete, breaking the American Record for Broad Jump at Harvard Stadium at Cambridge with distance of 24 ft. 8 in. Note legs drawn up to the body and height of jumper.

count against him. The jump must be made from the board. It is declared a foul when any portion of the jumping foot shows over the front edge of the take-off.

By a few simple tests the beginner can find just where he should start his run to enable him to reach the take-off with the jumping foot each time. The best method is to start at the take-off and reverse the run. Stand with both feet on the take-off. If you use the right foot as the jumping foot, step off with the right foot and take three or four easy strides. Place a mark where the right foot strikes the ground. Repeat and continue the run for about 60 feet, increasing the pace as you strike the mark first made. Again make a check mark where the right foot falls at the end of the 60 feet. Now with a steel tape you can transfer these marks to the runway so that you have a starting mark 60 feet from the Take-off and a check mark about 50 feet from the Take-off. In taking these measurements you must be careful to run at the same rate of speed that is to be used in an actual jump. These preliminaries over the athlete is ready for the jump.

THE RUN

Stand on the mark. Do not start the run until you have fully made up your mind that this effort will be your best. Now having run smoothly up to the 50 foot mark, increase the speed until you reach top speed at just two steps before the take-off. Then without hesitation or wavering concentrate on the lift. The run must be smooth; you should not

B

Bob Gendre of Georgetown University, winning Broad Jump in Pentathlon at Franklin Field April 29th, 1921. Note Gendre has the height in the air but he has extended his feet too far out in front of him too early in the jump.

lengthen or shorten the strides except that the very last step with the jumping foot is somewhat shorter. This gives two advantages. In the first place it permits you to crouch as low as possible. The leap is a leap, and not, as I have said above, a long step. In the second place, this maneuver keeps the weight of the body well ahead of the jumping foot, thus saving that energy that would otherwise be expended in raising the body over the knee-joint. The arms are to be carried exactly as in running. Then the left arm and right knee follow as the other arm and knee are held up as long as possible.

C

Ned Gourdin of Harvard University. An excellent picture of Ned Gourdin reaching his legs out at the end of the jump for every inch.

The best way to get height is to draw both knees up to the chest, and ever straining upwards, to hold them there until the moment of landing when they are thrust vigorously forward. While in mid air some jumpers try a series of twitches or kicks that give the impression of walking in the air. These motions while they do not give any additional impetus to the forward motion do nevertheless help immensely in keeping the feet from dragging. The motion is attained by taking a second jump in the air. That is, the left leg, after having been drawn up to its full height, is thrust quickly downwards and backwards as the right leg is drawn up an in turn thrust down. This flexing of the muscles brings good results.

After you have expended all the original speed and height in reaching a position over the pit, there remains only one thing. Swing forward the feet from the hips. This will cause the body to approach the soft dirt of the pit in an almost sitting position. Indeed you probably will sit down a few times until you have mastered the knack of driving forward

D

Ned Gourdin winning the Intercollegiate at Cambridge, Mass., May 29th, 1921. Note great height in the air. Just after the take-off, in the act of bringing his legs up.

E

Ned Gourdin smashing the World's record on Broad Jump. Gourdin made the miraculous jump of 25 feet 3 inches. Note great height in the air, knees well up.

with the arms, and letting the knees give way suddenly, as soon as the heels have touched the pit. If the landing has been made properly there will be no sprawling over the pit nor will there be a second jump or bound out of the pit; but you will literally stick in the dirt, and find great difficulty in preventing a fall back. A casual examination will prove to your satisfaction that this swing of the legs on landing will easily add two feet to any jump.

In this event as in all others one cannot overemphasize the need of being thoroughly warmed up before attempting any jumping. And the knack of hitting the take-off and getting a good lift once acquired, the athlete should not take many actual jumps. As said before the event is hard on the leg and back muscles. The best training is diligent practice with the sprinters or hurdlers. This is an event that may readily be combined with several other forms of running and jumping. For purposes of practice a short run and jump to get height is ideal. Five such trials a day topped off with three real leaps for distance and form three times a week would be a good schedule.

In broad jumping as in all branches of sport the necessity of clean living is imperative. In the heat of battle one is often called upon to do better than he knows how; and in such a situation there is nothing more bitter or discouraging than the thought that he has squandered his and the team's chances of success.

F

L. St. Cyr Ingram of Oxford University, England. Legs are well drawn up. Body is too much crouched. Ingram could have jumped much farther had he greater speed and been surer of his take-off.

HOW TO HIGH JUMP

ATHLETIC TRAINER, YALE UNIVERSITY.
By Johnny Mack

Probably the first opinion that everybody gets regarding high jumping is that it requires an extraordinary amount of natural spring and ability, and to a certain extent this is more or less true, because the man with natural spring and other qualifications will probably make a greater high jumper. But at the same time an athlete with ordinary spring and good form can become a good high jumper if he has the persistency and determination necessary.

By persistency and determination I mean sticking to the thing constantly for a number of years until he has mastered it thoroughly.

Form is everything in high jumping. There are a few natural high jumpers who do not master any particular form and depend absolutely upon their natural agility for leaping over the bar, but none of these men have ever become champion high jumpers. World's champion high jumpers are men who have had great patience and determination to learn the correct way to high jump and have taken advantage of all the years of experience that professional training can give in working out an ideal form. The form that we are going to recommend for you to learn is the form that has been used by most of the best known and most successful high jumping athletes.

Johnny Mack, Athletic Trainer, Yale University.
Richard Langdon, World's Champion High Jumper, 1921, setting record at Olympic Games of 6 ft. 3 in.

Fig. 1

CALISTHENIC WORK

In the very beginning it is quite important to practice a little each day on certain kinds of calisthenic work that will greatly assist you in developing your form and make of yourself a good high jumper. This kind of special calisthenic work consists in kicking, first one foot and then the other. The natural tendency for a person who kicks is to extend the toes, but in practicing these calisthenic exercises, hold the hand well above the head and try to kick it with the right foot, then with the left, but keep your toes flexed. Later on you will understand this when we describe the method. You should do this every night and morning until your legs become flexible. Very good exercise is walking and bag punching, as that develops the chest, arms and back muscles.

TRAINING

Persistent training is essential to high jumping or any form of athletics requiring skill and agility.

In learning to high jump a beginner should practice at low heights. In addition to calisthenic work which is going to materially assist you in limbering up and increasing your spring in the start you should practice jumping at low heights every other day until the form is mastered.

Fig. 2

Fig. 3

After you have mastered the form you are then ready for competition, and at this stage you must not jump more than two or three times a week or you will find that you are losing your spring, or to use the athletic expression your "pep", and you will be sluggish, and unable to put your best into it. A good high jumper must be right on his nerve, so that he can use every available bit of energy possible to accomplish the best results on the day of competition. The day before and the day of competition, the man should rest well and keep off his feet all he can.

Below is an ideal schedule for high jumpers who have succeeded in learning the form:

RUNNING HIGH JUMP

The height of the bar at starting at each successive elevation shall be determined by the field judges. Three tries shall be allowed at each height. Each competitor shall make one attempt in the order of his name on the programme; then those who have failed (if any) shall have a second trial in regular order, and those failing on this trial shall take their final trial. A competitor may omit his trials at any height, but if he fail at the next height he shall not be allowed to go back and try the height he omitted. Each competitor shall be credited with the best of all his jumps or vaults.

Fig. 4

Fig. 5

HIGH JUMP

A line shall be drawn three feet in front of the bar and parallel therewith, such line to be known as the balk line. Stepping over this line in any attempt shall be counted as a balk. Three balks shall count as a try. Displacing the bar shall count as a try.

Fig. 6

EQUIPMENT FOR HIGH JUMPING

Track suit, consisting of jersey and running trousers, a pair of regular jumping shoes with spikes in the heels and small rubber pad inside to protect the heels from injury and stone bruises.

Fig. 7

PIT

It is very important to have a good pit to land in; the best pits are made from a mixture of loam and sawdust, about equal parts and should be raked after every jump. The size of the pit should be nine feet square.

Be sure to keep warm when in competition, always sitting on a bench, keeping your legs warm by wearing flannel trousers and robe; before your turn to jump, warm up well

by jogging and kicking; always begin easy; when ready to jump concentrate your mind as well as your strength on the effort. Have confidence in your ability as that it very essential.

THE IDEAL HIGH JUMPING FORM

High jumping may be divided into different phases each of which is equally important. The first is the Run, and this is a very important part of the high jump.

Fig. 8

THE RUN

A long, bounding stride is best for it seems to help you gather up strength for the final effort.

Fig. 9

The important parts of the run are:

To run practically straight down the path to the bar, until the last two strides, then turn at a slight angle — turning on the last stride is bad. (See Figs. 1 and 2; note the way he is coming in). Come in on the flat of the foot, according to the speed a man can carry. Too slow a run is just as bad as too fast.

Fig. 10

A mark should be made about 55 feet back which will bring the jumper to a position for the take off. In addition to this starting mark, another mark about the center of the run will enable him to check up his stride, to insure himself that he is going to assume the right position at the right spot. This also

Fig. 11

insures him of coming in at the right number of strides. A great many runners make the mistake of not making a mark and as a result they never take off at the same place, or they make a good many balks. If the run is right and the mark is right you will have no further difficulty. The first thing is to get the mark located at the right spot because without this you will do a lot of unnecessary running that will tire you out.

When you get a wrong run that brings you too close to the bar you will hit the bar going up and if you are too far back you will reach your height too soon.

In taking the last stride the jumper must hit the ground very hard with the heel. This is called the "take off." (See Fig. 3.)

The right position is where you can get as close to the bar as possible without kicking it off. (See Fig. 4). It is impossible to estimate a definite mark for the "take off," that is the exact number of inches to the bar, as it depends upon the man. A short man can get closer to the bar than a long legged man.

Fig. 12

Fig. 13

The last stride is just a little longer than the others, keeping the weight of the body over the foot. If too long a stride is taken it will be impossible to do this. Therefore the importance of taking a stride just a trifle longer on the last should be kept in mind.

For convenience in describing the form we have called the back leg the "kicking leg" and the front leg, that is the one that you "take off" with, the "jumping leg."

Now, as you take this last stride, with the body well over the "jumping leg" kick as hard as you can, with the "kicking leg". (See Figs. 5 and 6).

Note how high the kicking leg is before he leaves the ground. When kicking the leg up do not extend the toes. Keep them in. Note the arms in the air moving up with legs when kicking off the ground. (See Fig. 7). Still on the ground. The kicking leg is at its highest point now and it has done its work. The jumper now springs off the ground and using his jumping leg he repeats the kicking with the jumping leg as high as he possibly can until he reaches his height.

Fig. 14

Fig. 15

Carefully note each one of the photographs, (Figs. 8, 9, 10 and 11) where the height of the kick has been reached. The jumper has put all his force into it. Very few high jumpers realize the importance of the kick with the jumping leg. (Figs. 8, 9, 10 and 11) represent the different positions while he is putting everything into this kick. Fig. 11 represents the high point of the jumping leg; it is the danger zone.

Now the next thing is the to get across the bar, and this is accomplished by the use of the jumping leg and the arms. Carefully note the left leg because the problem in front of the jumper now is to get himself across the bar. After he has reached his height it is absolutely essential that the jumping or left leg is powerfully driven horizontally across the bar. At the same time carefully note how the jumper uses his arms. The right arm is

swung over throwing the jumper into the position of facing the bar. The left arm will help a lot and is very important in assisting the body to face the bar and carry it across the bar past the danger zone.

Note carefully illustrations 12, 13 and 14 which beautifully illustrate the use of the arms and the driving of the legs in making this turn and carrying the jumper across the bar.

THE LANDING

Note that he still keeps his right leg in the air. Be sure and land on the jumping leg and also note how the arms are thrown backward to be sure of not pulling the bar with the hands. (See Fig. 15).

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