

Famous Artists Cartoon Course
Westport, Connecticut

Anatomy

Lesson



Rube Goldberg

Milton Caniff

Al Capp

Harry Haenigsen

Willard Mullin

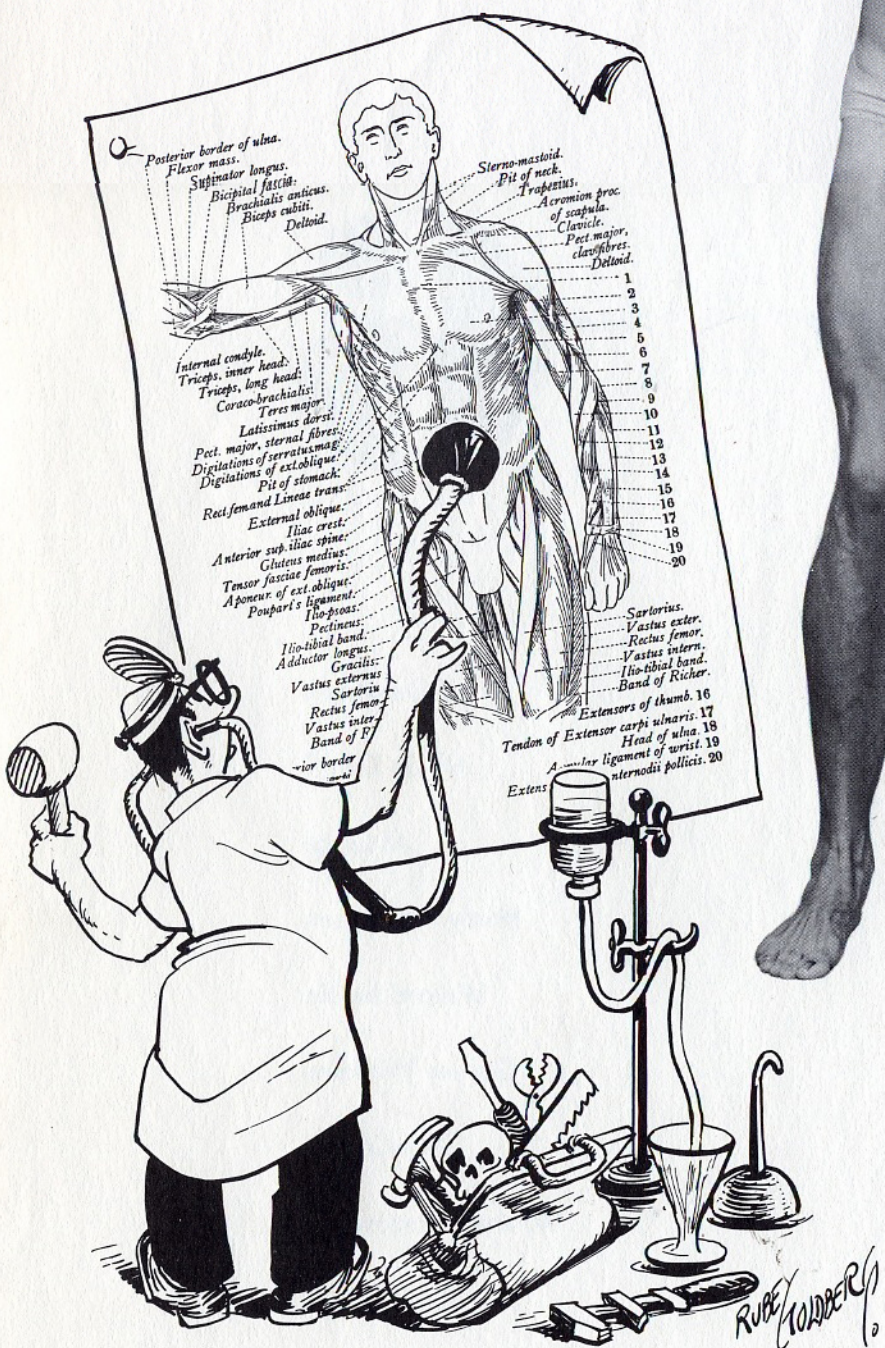
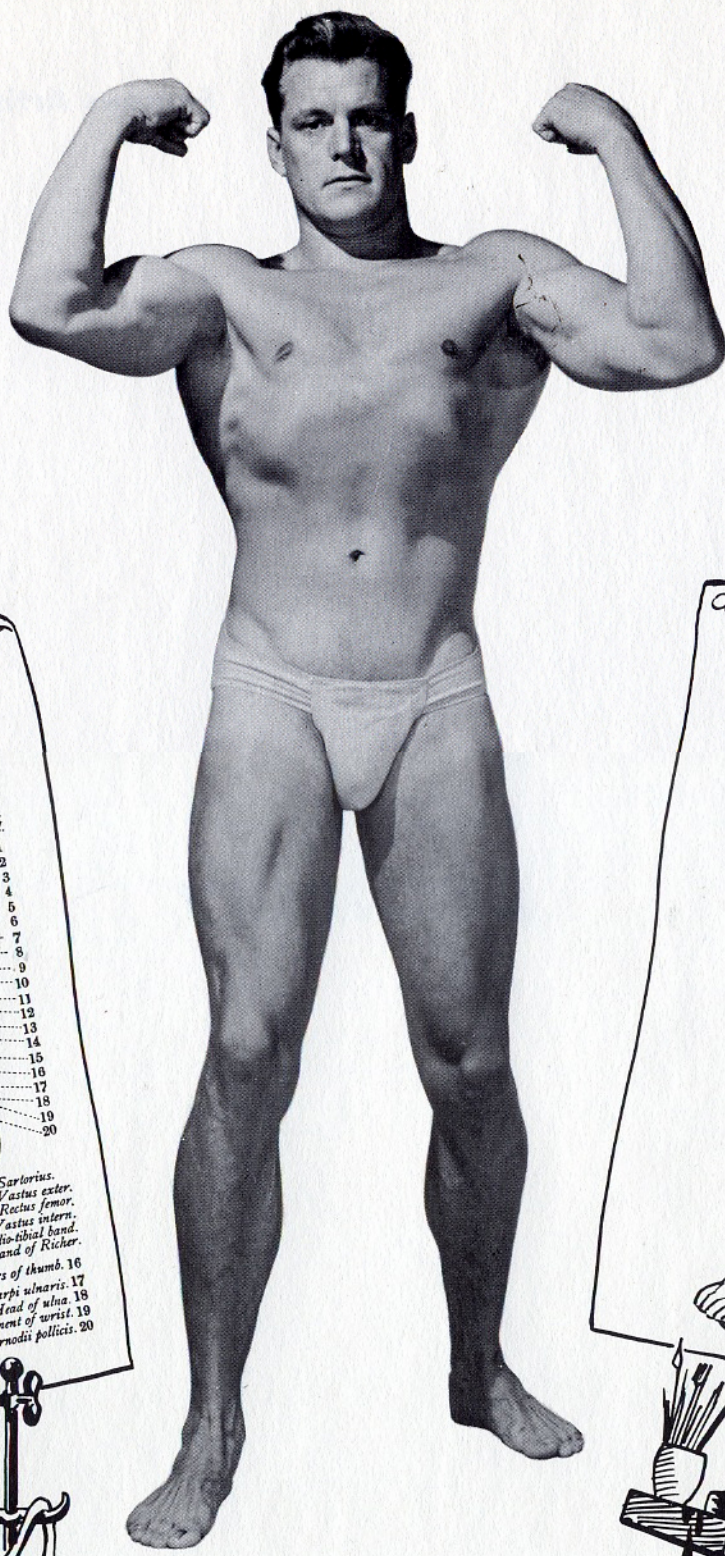
Gurney Williams

Dick Cavalli

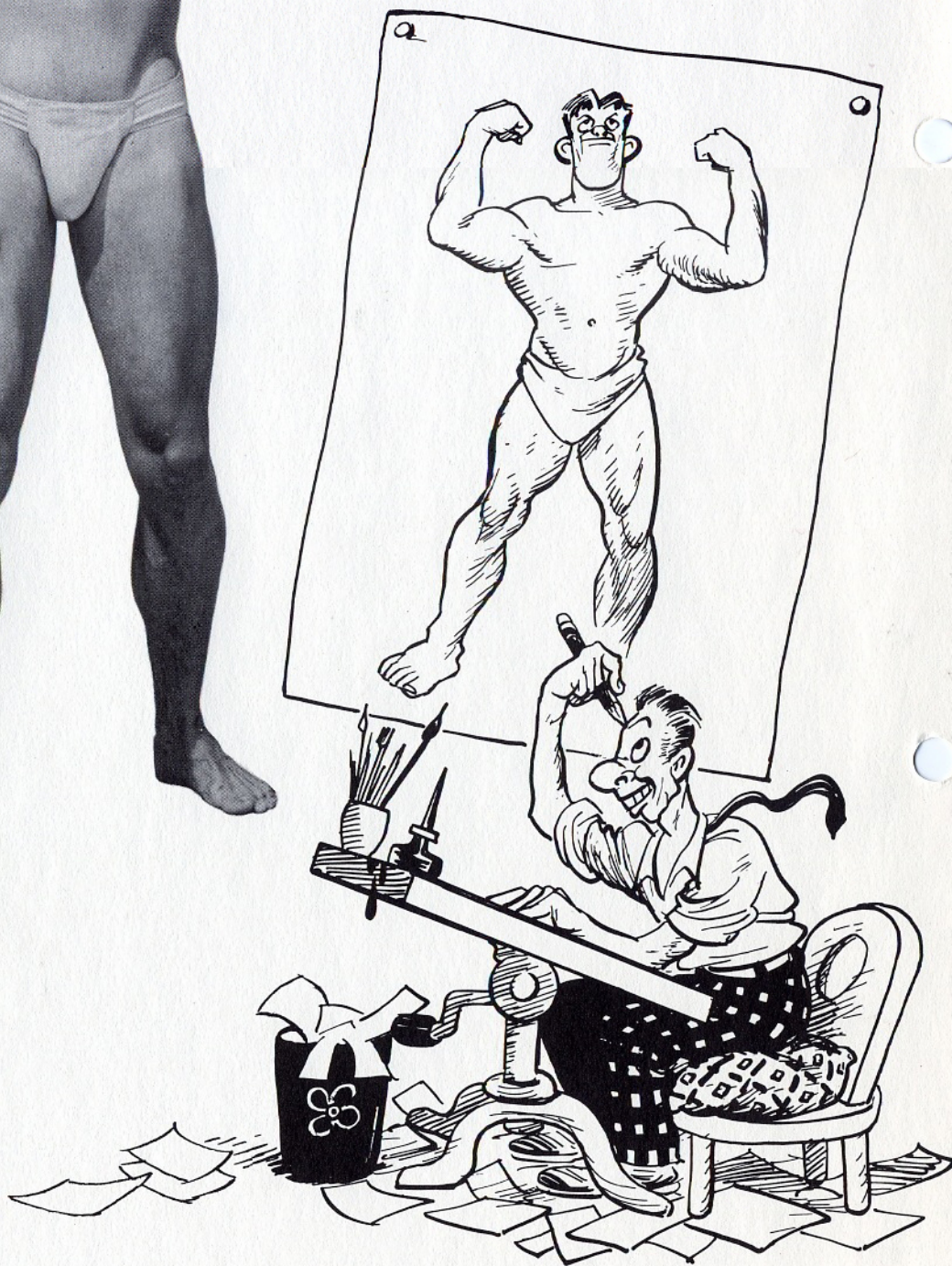
Whitney Darrow, Jr.

Virgil Partch

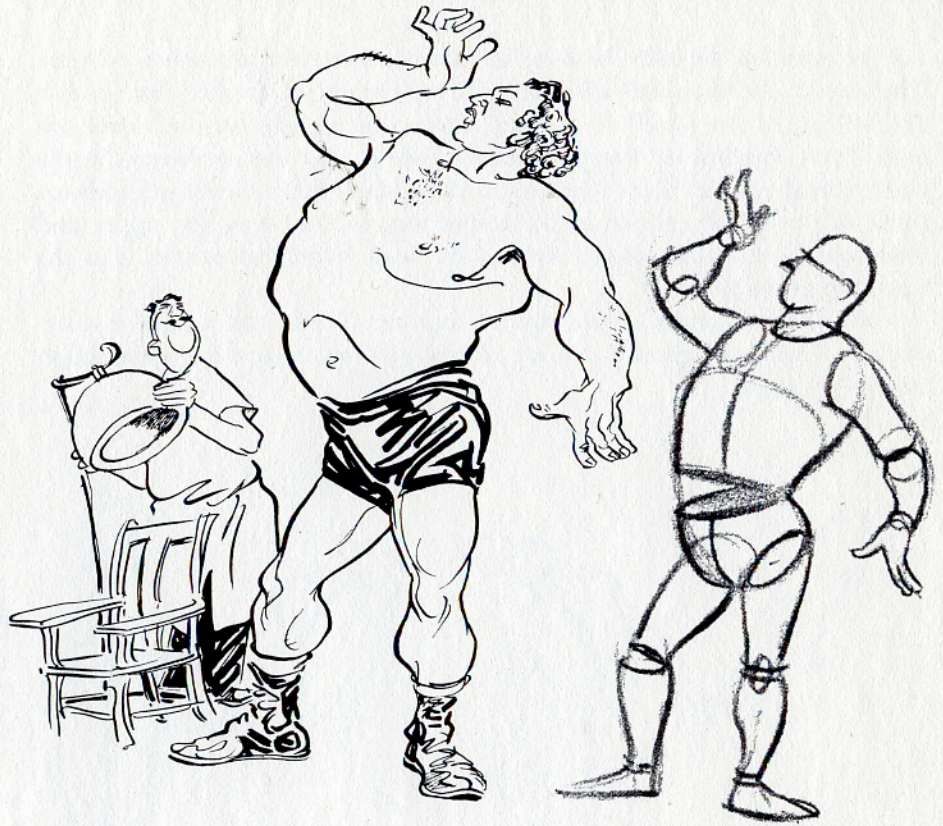
Barney Tobey



You are not a medical student and will never be called upon to operate, so let's skip all of the big names. Instead—



— let's concentrate on the four groups of muscles that you will need in creating comic characters



Anatomy for cartoonists

Faced with the study of anatomy, some students start wondering why they didn't take up plumbing or cost accounting. But learning a little true anatomy needn't be that tough. As cartoonists, we are concerned with the outward form of the human body. We leave the liver and lights to the medical students and concentrate on what makes a person's outside look the way it does.

Cartooning in general falls into three classifications. First, we have the true-to-life or adventure-type drawing such as is practiced by Milton Caniff. Let's face it — with this type of drawing the artist must have a good knowledge of anatomy and use it. Because the characters are realistic, their actions are limited to what a real human body can do.

The second style of drawing is best exemplified by the work of Harry Haenigsen in his "Penny." In this style, the artist simplifies the human form, but still maintains most of the true figure proportions, and appearance and dress are realistic. He can exaggerate the action of the figures and, if he wants to do it, he can add real comic-style characters without having them look out of place. Al Capp uses this style in his work and he never hesitates to add characters of a wildly comic type to his drawings. A great advantage of this style is the freedom it gives for using the sexy girl figure without the realistic male companion. A goof with a doll often makes the doll look better.

The third style of cartooning is the old school of true comic art. Exaggeration of form and action is unlimited. This is the original comic style and is still very popular. The Katzenjammer Kids, Snuffy Smith and Barney Google, Blondie and the many "animated" style strips all fall into this classification.

Both Willard Mullin, with his sports cartoons, and Rube Goldberg, with his political cartoons, are masters of all three styles and use all three in their work. Willard Mullin may draw a true portrait of a baseball player and then surround the drawing with little figures that would fall into the comic class. Politi-

cal cartooning calls for a true-to-life style of drawing, but Mr. Goldberg often finds that he can put across a very serious idea by the use of a truly comic character. You will notice, however, that each of his comic figures must have a human quality, no matter how exaggerated he makes it.

Regardless of the style of drawing that you do, there is one important thing to remember: all forms, including the human form, have three dimensions — width, height and depth. Everything, from a sheet of tissue paper to an elephant, is a solid. The figure, whether comic or realistic, must have depth. You are working on a flat surface and automatically get height and width, but the third dimension of depth must be an illusion that you create with your pen or brush. By studying the sphere and cylinder and drawing them in all positions, you will find it simple to transfer this knowledge to your figures.

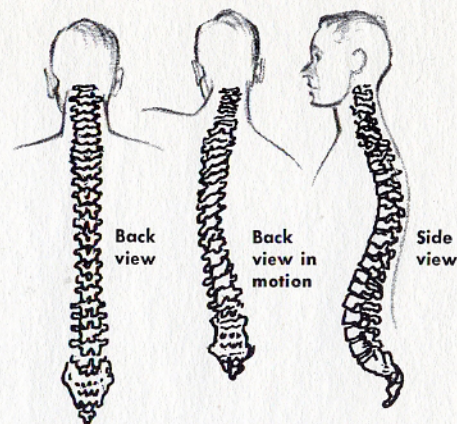
Stack up your spheres and cylinders in the right order and they will make a human being. The basic forms of spheres and cylinders are covered in varying amounts by muscles. For cartooning we have simplified the muscles for you, too. Instead of countless muscles we have broken them down into four groups — the chest, back, arm, and leg muscles. We are concerned with the outside appearance of the human, so we need only study those muscles that have the greatest effect upon the outside of the form. Both male and female have muscles, but remember that the female hides hers under a smooth exterior and they don't show as much as the male's.

Because we speak lightly here of anatomy for the cartoonist, it doesn't mean that it has little value. The better your understanding of the human figure, the better equipped you will be for satire. The main thing is not to become so mired in the study of the bones and muscles that you forget why you started to study them in the first place. Cartooning is a light form of art — not a science. But it doesn't hurt anybody to look under the hood of his car once in a while to see what makes it run.

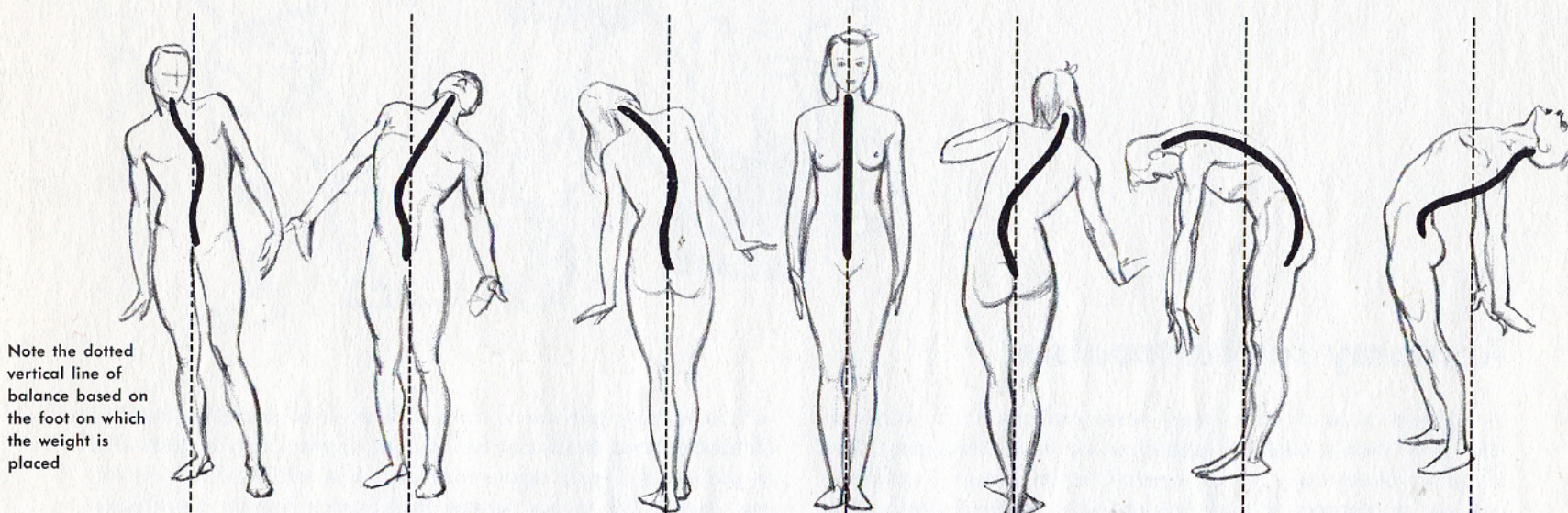
Movement of the spine and body

For the action of the body, look for and study the curve of the spinal column. The slant of the shoulders and hips and the turning of the body are due to the twisting of the vertebrae or small bones which make up the spinal column. Each vertebra of the spine moves a little, and the movement in the entire spinal column is the result of all these many little movements. Always think of the spinal column as the connecting rod between the upper and lower portions of the torso as well as the head, which, of course, is at the upper tip of the spine.

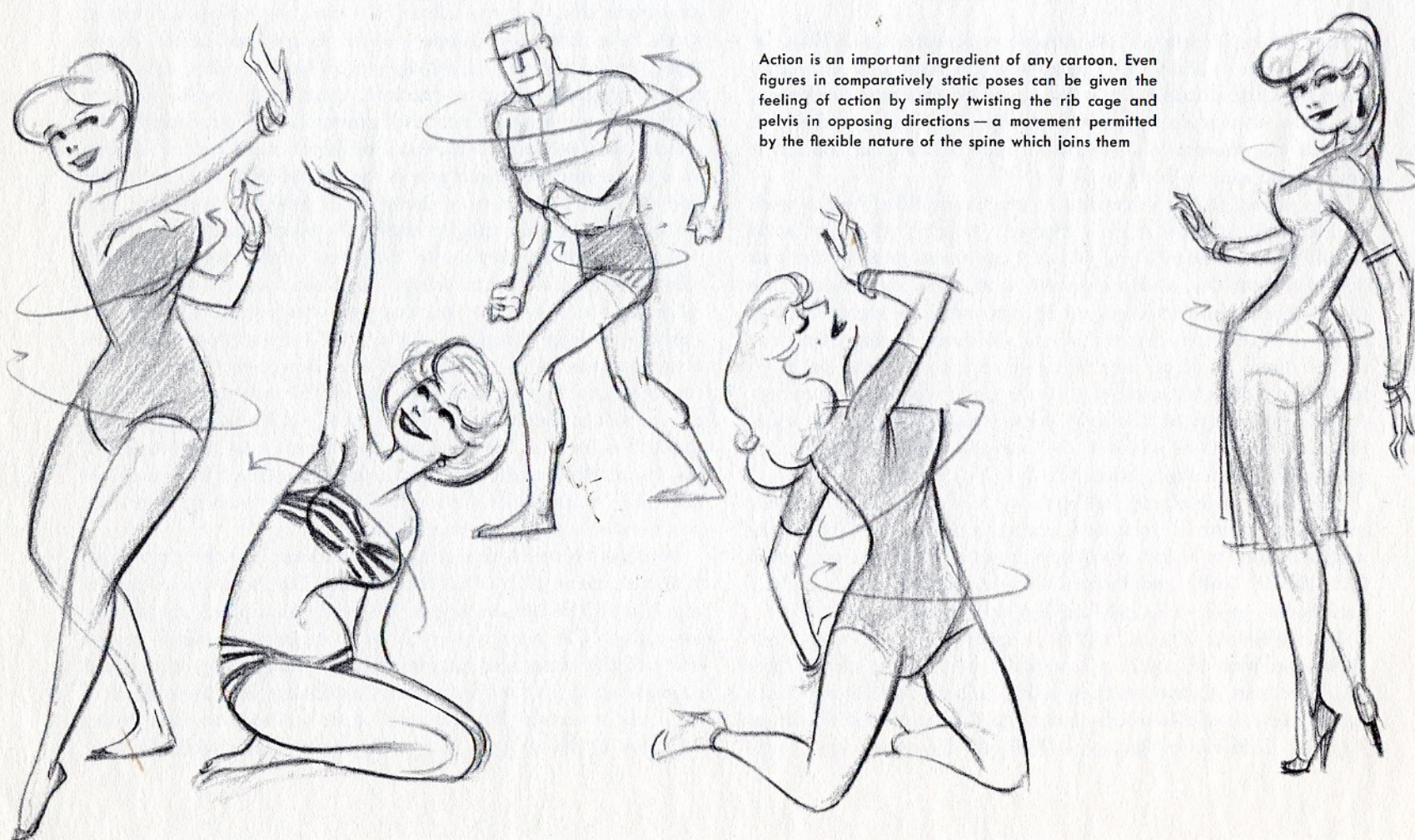
Study the movement of the spinal column. If you understand it thoroughly, it will add greatly to your ability in drawing the figure in action from every angle.



The spinal column is made up of many vertebrae, each of which moves a little, making up the entire movement of the spine



Note the dotted vertical line of balance based on the foot on which the weight is placed



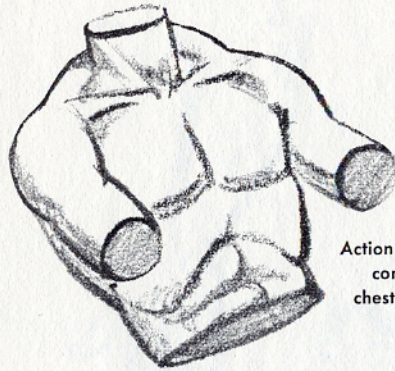
Action is an important ingredient of any cartoon. Even figures in comparatively static poses can be given the feeling of action by simply twisting the rib cage and pelvis in opposing directions — a movement permitted by the flexible nature of the spine which joins them

Back and chest muscles in action

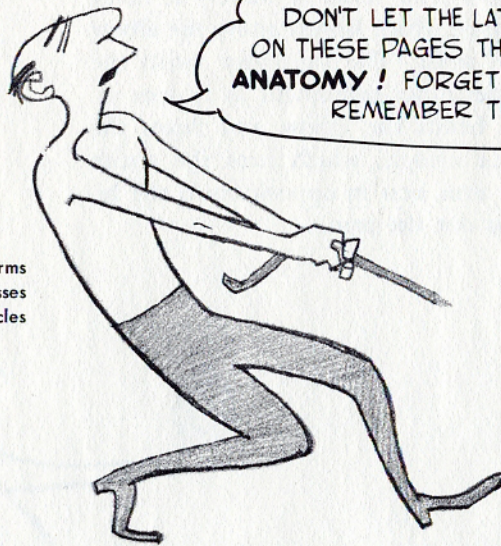
There are a great many muscles in the human frame — some large and apparent to the eye, others small and hidden. The cartoonist, fortunately, doesn't have to know all of them — he needs to be familiar only with what occurs to the large groups that show on the surface when the figure performs different actions. The twisting, thrusting or pulling of any part of the figure causes muscles to assume different shapes and positions.

In strong pulling or twisting actions the muscles stretch taut and become longer and flatter. In pushing actions they become compressed and tend to bulge. Apply these two principles to make the actions of your cartoon figures more convincing.

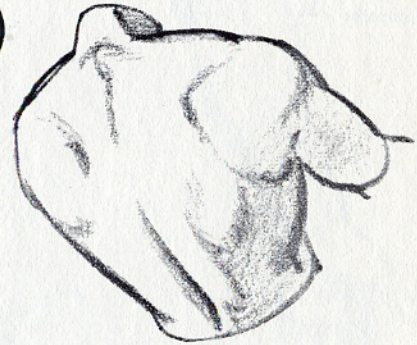
On this and the following two pages we show you realistic drawings of the muscles, and how these muscles might be suggested in cartoon figures.



Action of arms compresses chest muscles



Shoulder blades pull away from spine

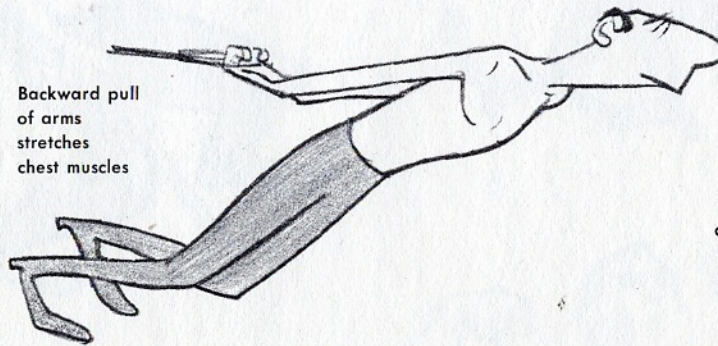


In the strong pulling action above, each shoulder blade (scapula) is pulled away from the spine. The covering

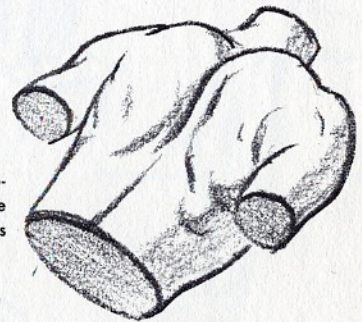
muscles (trapezius) are stretched almost flat. In contrast, the chest muscles are compressed and appear bulky



Backward pull of arms stretches chest muscles

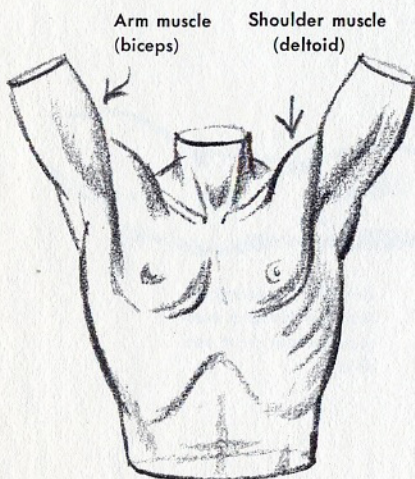


Note pronounced bulge of back muscles



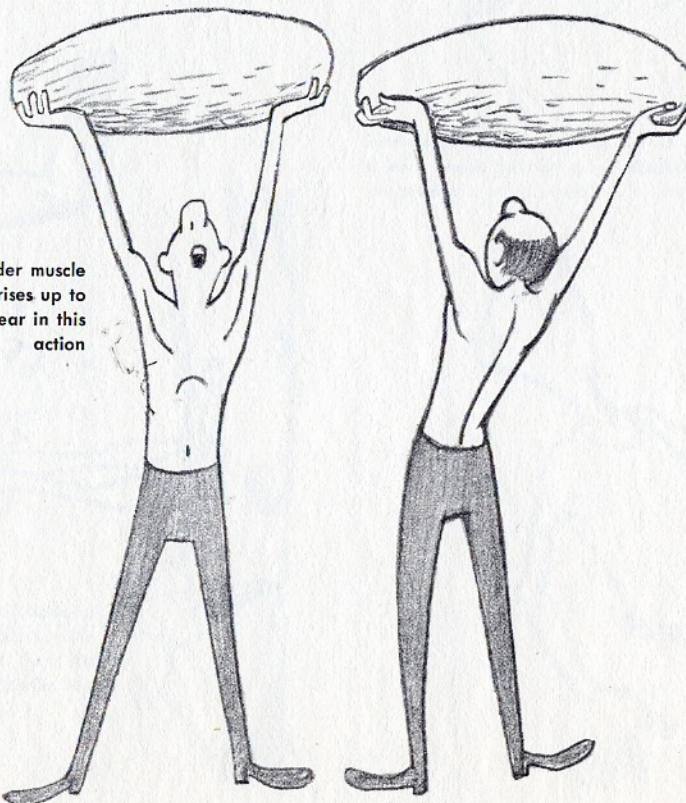
In the backward pulling action the reverse is true. The chest muscles are stretched and become flat. The shoulder

blades are forced inward to the spine and the covering muscles are compressed



Arm muscle (biceps) Shoulder muscle (deltoid)

Shoulder muscle rises up to ear in this action



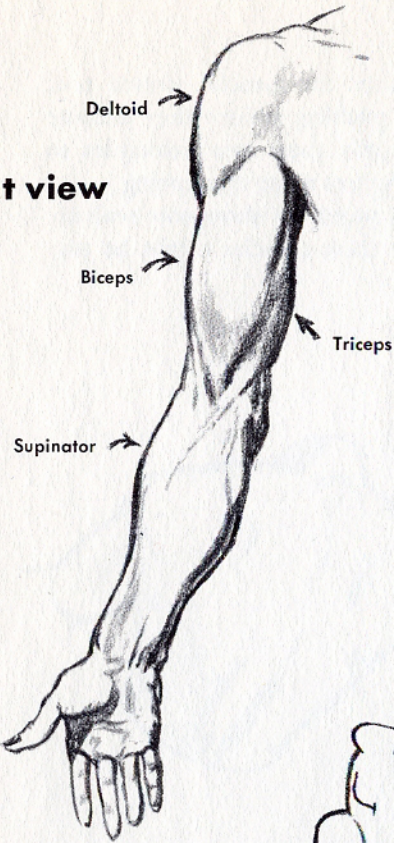
Note compression of shoulder and neck muscles in lifting heavy weight



The pronounced bulges of arm and shoulder muscles result from the thrust against a heavy weight, which compresses them. Upward thrust of arms causes shoulder muscles to rise, exerting a pull which stretches and raises the chest muscles

If the arms are supporting a heavy weight, the back muscles will be compressed and bulky. However, if the arms are merely upraised, these muscles will be stretched and flat

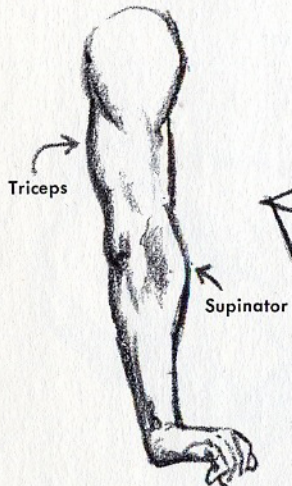
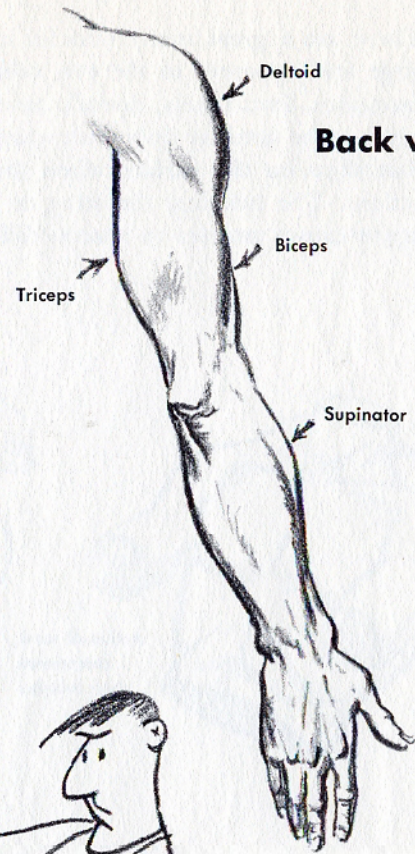
Front view



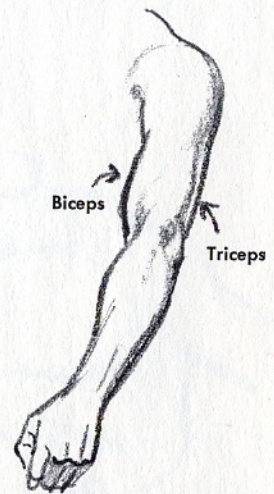
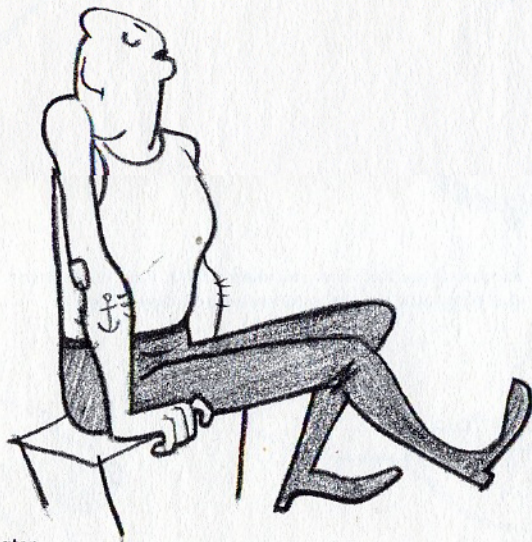
The arm muscles in action

The Bill of Rights guarantees every citizen the right to bear arms — but arms aren't any good unless you can cartoon the muscles that move them. The principal and most easily seen muscles of the arm are the shoulder muscle (deltoid), the biceps and triceps and the supinator longus. The latter is merely a fancy name for a long muscle which begins above the elbow and extends to the wrist. The supinator twists the forearm, and becomes quite prominent as it does so. The biceps muscle bends the elbow and flexes the forearm. The triceps muscle, which runs the entire length of the upper arm, acts in opposition to the biceps and straightens out the arm.

Back view



In a straight pushing, thrusting action the triceps and supinator become prominent. The biceps, in contrast, tends to flatten out



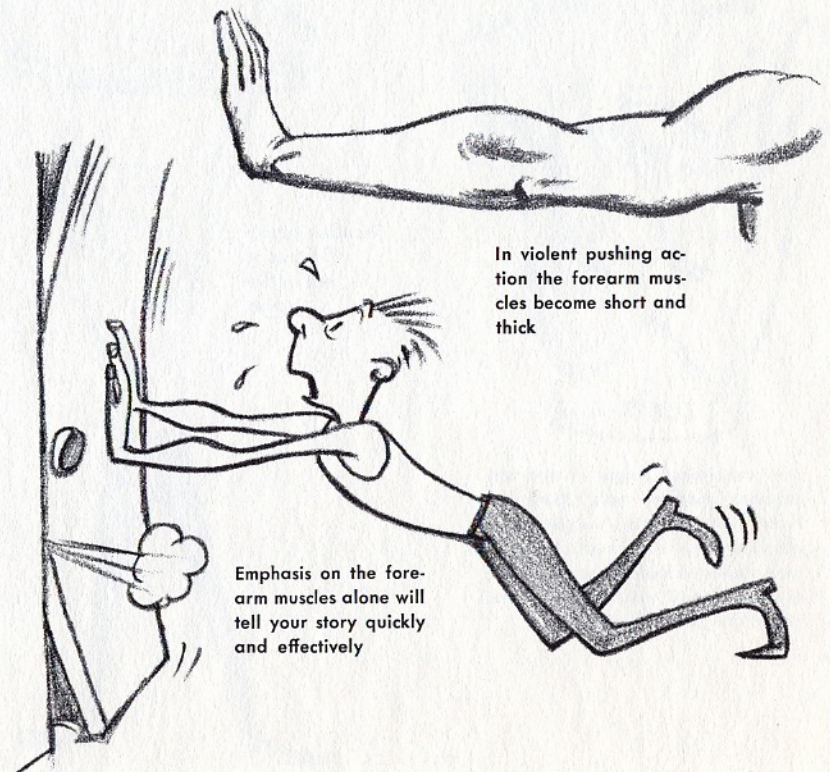
In strong pulling action, contraction of the biceps muscle makes it bulge. The triceps muscle becomes less prominent



The action of the biceps may be represented fairly realistically in a cartoon figure — or it may be used for laughs to draw a skinny guy



In bending the arm the biceps becomes short and thick



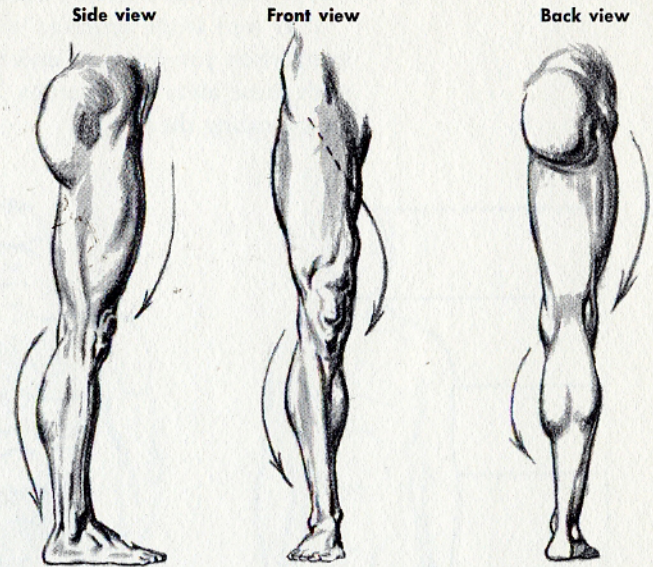
In violent pushing action the forearm muscles become short and thick

Emphasis on the forearm muscles alone will tell your story quickly and effectively

The leg muscles in action

There are many lumps and bumps created by the muscles in a well-developed leg. Often the student becomes overawed and confused by their number and appearance and ends up by being so concerned with drawing them all that he loses sight of the over-all shape and action of the leg itself.

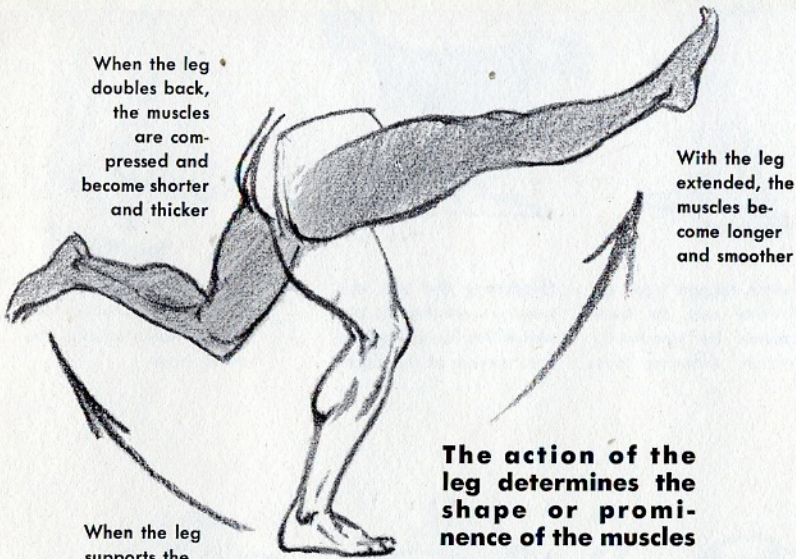
Two important muscles govern the shape and action of the leg. These are the sartorius and the gastrocnemius or calf muscle, which are explained at the right. These two muscles, in combination, create alternating curves which give pleasing form to the leg, and it is this over-all form which should be established first. Muscle detail, no matter how well drawn, should always be kept subordinate to over-all form.



Note the rhythmic relationship between the front of the thigh and the bulging calf muscle

The curve of the sartorius muscle (from the front of the thigh and the hip to the inner knee) is continued in reverse by the curve of the lower leg

Establish these smooth-flowing relationships between thigh and lower leg before drawing individual muscles in detail



When the leg doubles back, the muscles are compressed and become shorter and thicker

With the leg extended, the muscles become longer and smoother

The action of the leg determines the shape or prominence of the muscles

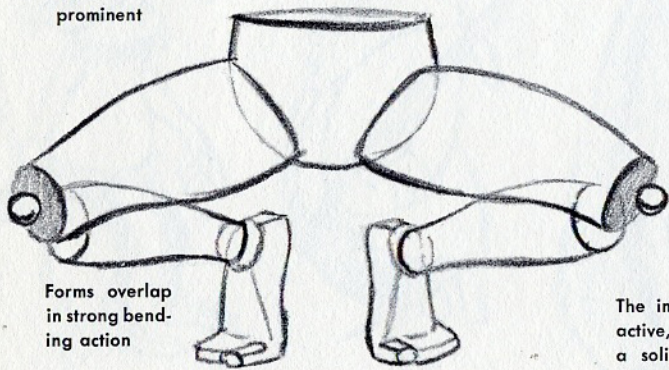


Calf conforms to long, sweeping line of leg action

Even when muscles are shown with little detail, the action will be more expressive if you emphasize the muscles most directly affected

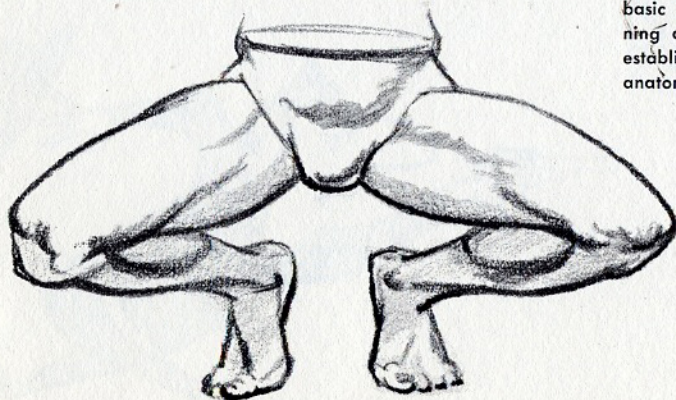
Calf bulges

When the leg supports the weight, calf muscles are more prominent



Forms overlap in strong bending action

The important thing in drawing an active, muscular figure is to establish a solid foundation first. "Drawing through" the simple forms of the basic figure is invaluable in planning action. With form and action established, you can add as much anatomical detail as you wish

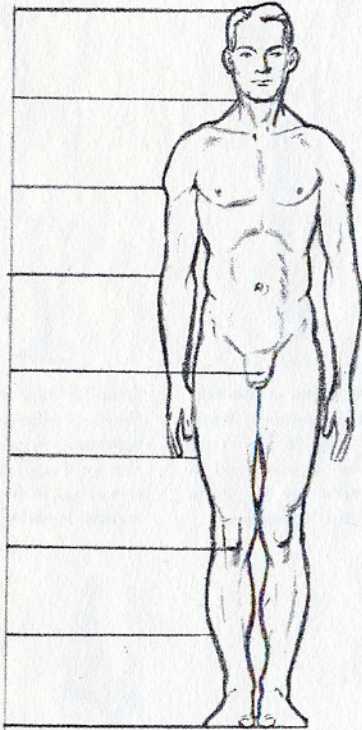


Even a simply handled cartoon figure will be better if you have a good knowledge of what is happening to the forms beneath the clothing

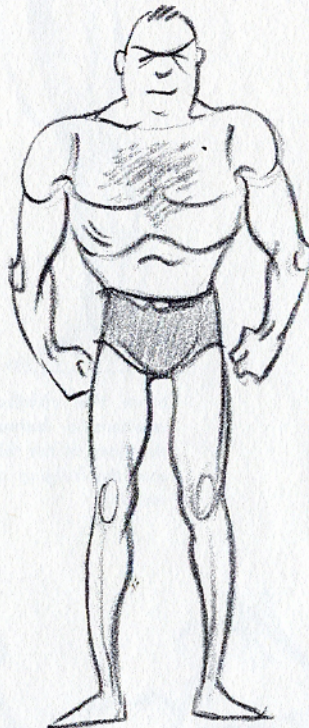
The male figure

Ideally the male is a creature eight heads high — that is, his height is eight times the height of his head. His shoulders are broad in relation to the width of the hips, and his fingertips, when his arms are extended straight downward, reach to the middle of the thigh. He is so constructed that the crotch is located precisely halfway between the top of his head and the soles of his feet. His kneecaps, in turn, are halfway between his crotch and his fallen arches (he's got to have something out of order since nobody's perfect).

It is well to be familiar with these proportions of the ideal figure. However, even when you draw a handsome, strapping Greek God type, you'll take liberties with these ideal proportions. When picturing average guys, the sky's the limit in exaggerating them.



Here, drawn to the proportions described above, we have the ideal—handsome but seldom used



If we want to emphasize his masculinity we make his shoulders massive, his hips extremely narrow



The less rugged type of individual can be best expressed by narrowing shoulders, widening hips

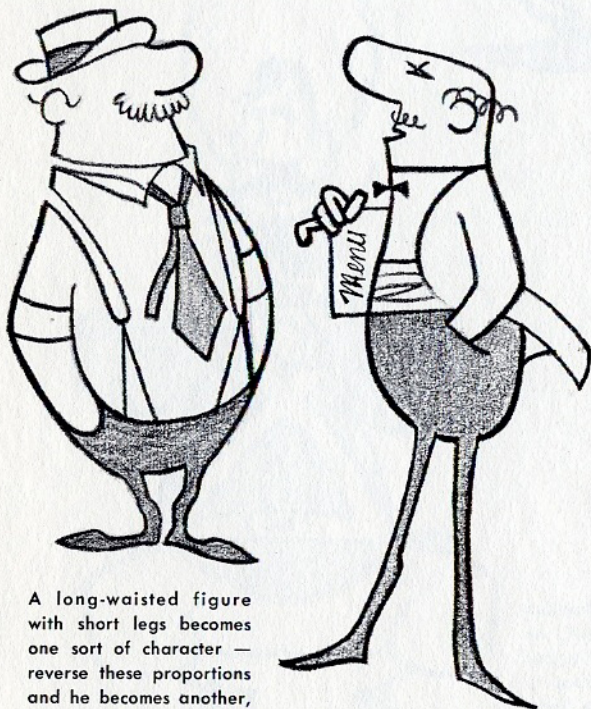


Shortening the legs and torso in relation to the size of the head produces one version of the figure



Lengthening legs and torso in relation to the size of the head creates another type

Vary in as many ways as possible the normal proportions of the human figure in order to come up with interesting and funny cartoon types — but base your exaggerations on a sound knowledge of the ideal figure proportions.



A long-waisted figure with short legs becomes one sort of character — reverse these proportions and he becomes another, commonly referred to as "Highpockets"

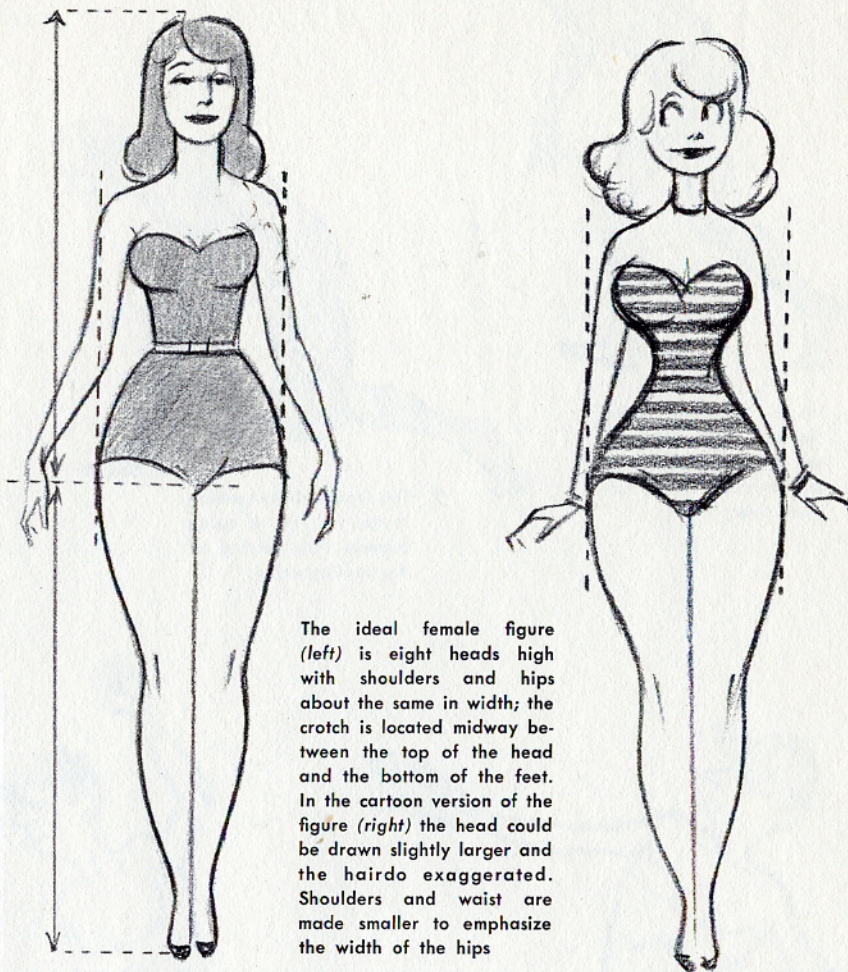


To suggest that a mug is first cousin to an ape, give him the anthropoid's characteristics — extremely long arms and short legs



The female figure

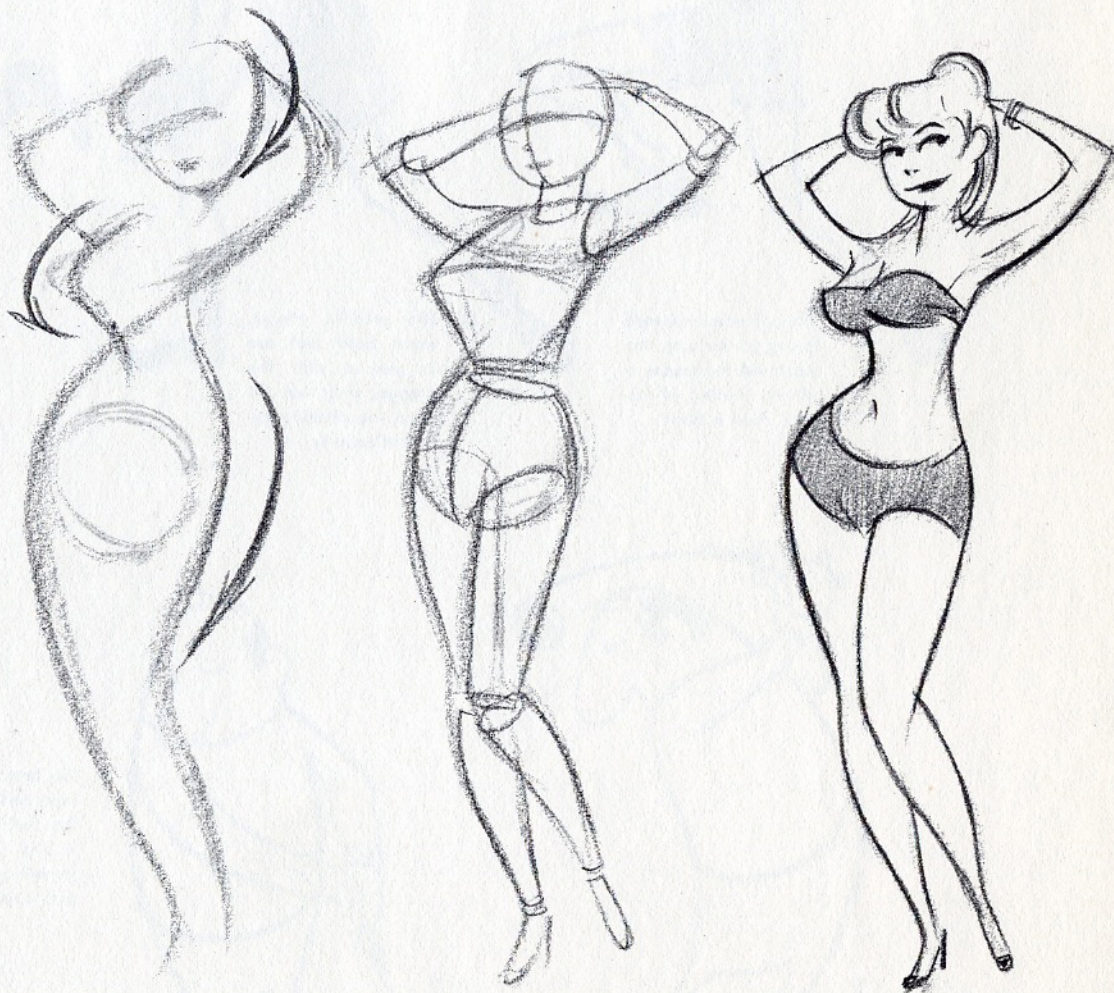
The proportions of the female figure differ from those of the male. A good understanding of these differences will help you exaggerate female characteristics for cartoon purposes and create cute, glamorous, sexy gals. Almost any liberties may be taken in distorting the male figure, but more restraint must be practiced when you cartoon females if they are to be attractive to the reader.



The ideal female figure (left) is eight heads high with shoulders and hips about the same in width; the crotch is located midway between the top of the head and the bottom of the feet. In the cartoon version of the figure (right) the head could be drawn slightly larger and the hairdo exaggerated. Shoulders and waist are made smaller to emphasize the width of the hips.



The crotch may be drawn higher than halfway to create a short-waisted, long-legged filly — or lower to show a long-waisted, low-slung chick.



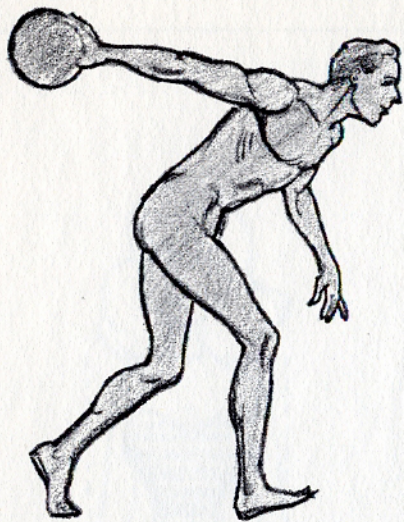
1 In drawing the female figure, follow the procedure we showed you in Lesson 2, but emphasize her curvaceous character. Make one curve flow into the other smoothly.

2 Now you give solid form to the action sketch. Try to maintain the smooth-flowing relationship between the forms that you established in the preliminary drawing.

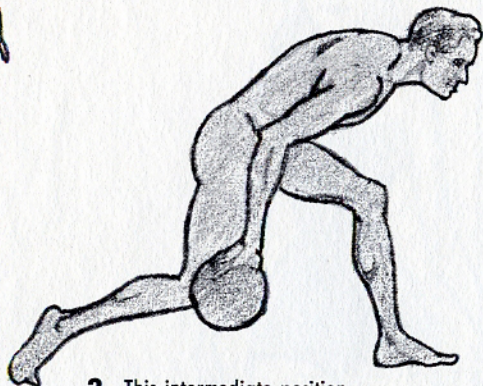
3 As you complete the figure and add hair, clothing, etc., don't let the lines of these details conflict with or destroy the smooth flow of action throughout the figure.

Tips on drawing action

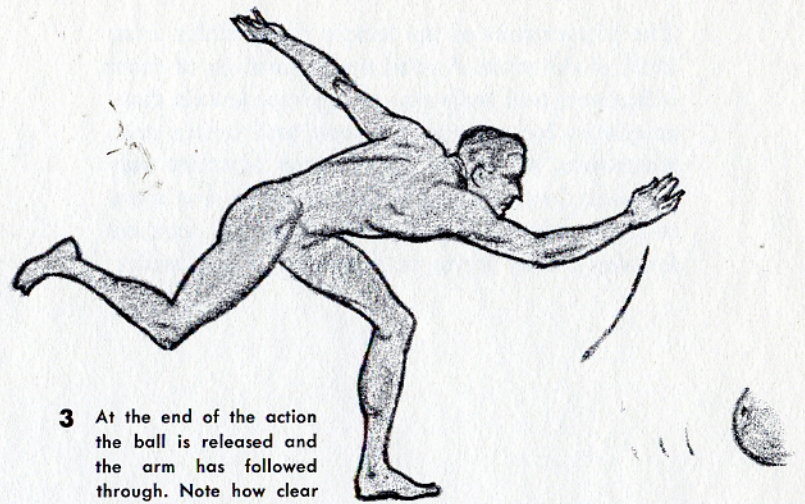
Whether you show all the muscles, merely suggest them, or ignore them completely, it is important to select a clear, descriptive view of the figure — a view that will explain the action at a glance. You will be most successful if you draw the figure in a position showing either the beginning or end of the action — such as at the start or finish of a stride or a swing. Positions in the middle of an action are usually not clear or quickly recognizable, or else they give the figure a posed look.



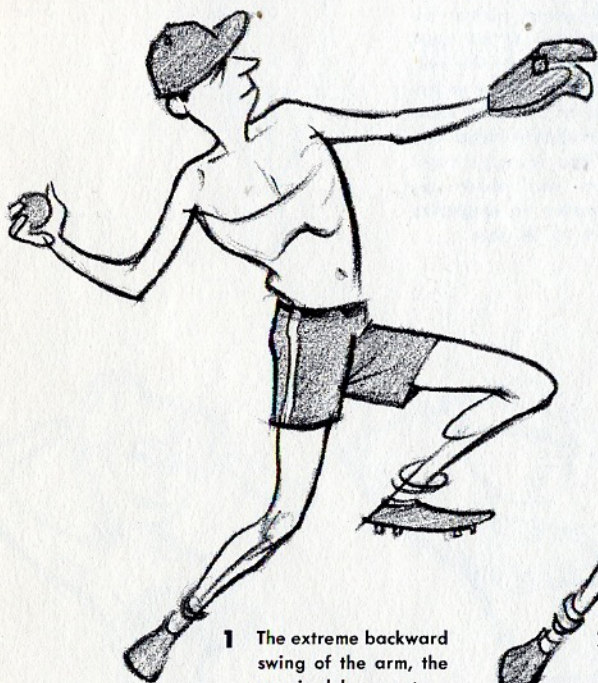
1 In this bowling action the arm has reached the top of its arc before starting downward on the forward swing



2 This intermediate position in the full arc of swing conveys little feeling of the bowling action



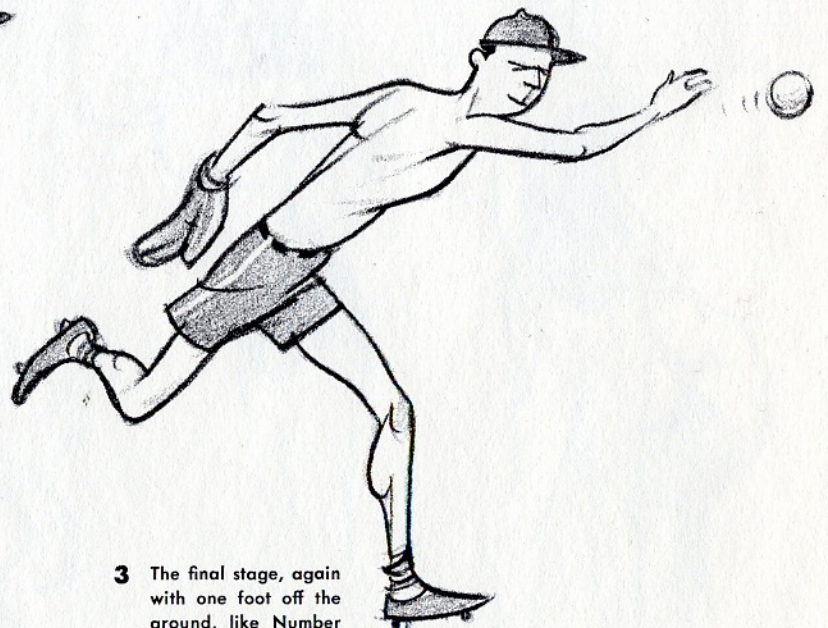
3 At the end of the action the ball is released and the arm has followed through. Note how clear the action is in 1 and 3



1 The extreme backward swing of the arm, the upraised leg create a strong feeling of action. Pose is clear



2 The middle stage, when both feet are in contact with the ground, does not express the pitching action effectively



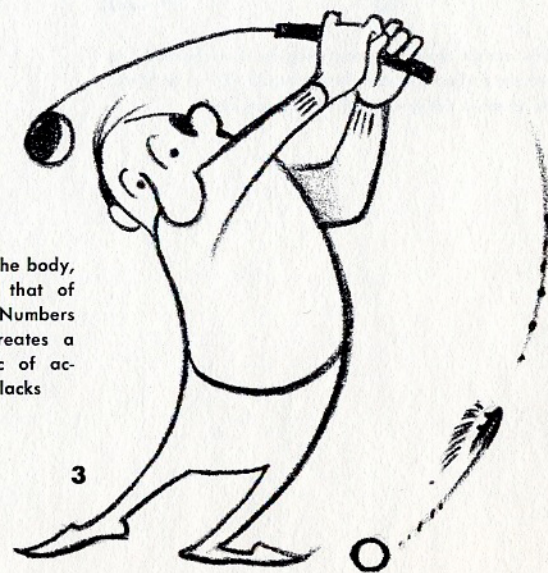
3 The final stage, again with one foot off the ground, like Number 1, is much to be preferred to Number 2



1



2



3

The bend of the body, repeated by that of the club in Numbers 1 and 3, creates a sweeping arc of action which 2 lacks



The backward bend tends to force together not only the forms of the figure at the back but also the fabric of the clothing, much like the pleats of the accordion. The figure forms and the clothing at the front of the figure are stretched taut, creating a sweeping, unbroken curve

In a forward bend the opposite is true. The sweeping curve is at the back of the figure, the compressed forms are at the front



Clothing the figure

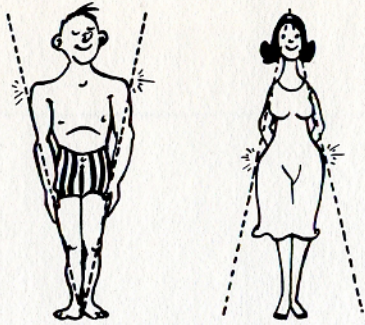
Regardless of how well you have constructed the figure and made use of the muscles in action, the end result can be spoiled if you do not clothe the figure properly.

Remember, the figure changes with every action. As the various forms of the figure twist and turn, they become longer or shorter, or they create angles or curves. These movements are like those of an accordion being played. We might call one side of the figure the "active" side — here the forms are forced together and compressed like the pleats of the accordion. The opposite, "inflated" side has the longer, sweeping curves. When you draw the clothing you must keep in mind these "active" and "inflated" sides, together with any twisting movement of the torso. This will enable you to create fold and wrinkle patterns which reveal and emphasize the form and action of the figure in a natural, convincing way.



When the shoulders twist in opposition to the pelvis, this action is revealed and emphasized by folds such as those indicated by the arrow

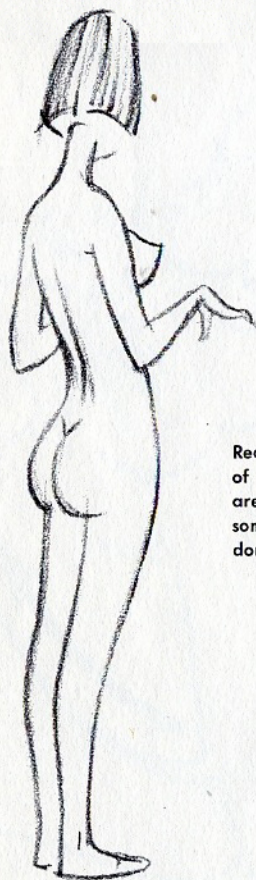
Here the backward thrust of the arm and forward extension of the leg create tension in the clothing fabric, producing folds which underline these two actions



A man is widest at the shoulders — and the woman is generous where she sits

Things to remember

In drawing gals and men — there is a difference. As the gallant Frenchman said: “Vive la différence!” Here are a few differences it is important to bear in mind. Generally speaking, long, flowing, soft lines are used in drawing women. Men are supposed to be more muscular — and the muscles make for bumps and angularities. Because drawing pretty girls is a special subject and brings up special problems, we devote the next lesson to it.

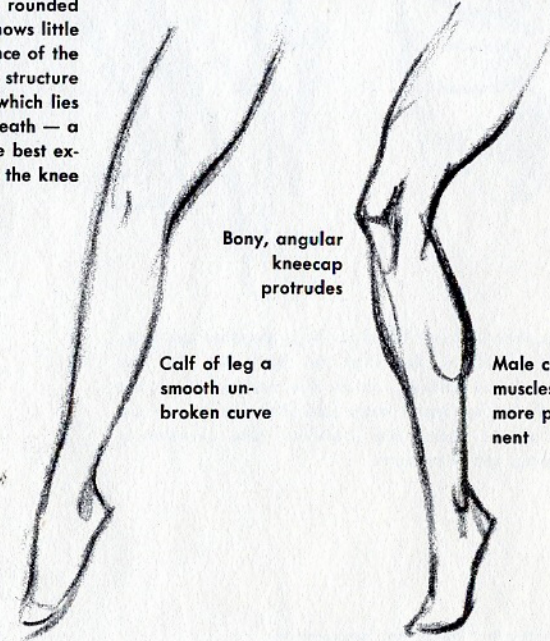


Readers take a dim view of ugly gals. Unless you are drawing a witch or some other evil character, don't make her repulsive



She's not pretty, but she's not unlikeable, either — she has an appealing quality

A plump, rounded leg shows little evidence of the bony structure which lies underneath — a dimple best expresses the knee



Bony, angular kneecap protrudes

Calf of leg a smooth unbroken curve

Male calf muscles are more prominent

A HOSEY MANUFACTURER SAYS THERE ARE ONLY FOUR TYPES OF FEMINE LEGS!

SOME BEND OUT — SOME BEND IN — SOME ARE STOUT — SOME ARE THIN — SOME ARE WARPED — SOME ARE STRAIGHT — SOME DESCRIBE THE FIGURE EIGHT — SOME ARE TAPERED — SOME ARE ROUND —

SOME ARE TENSE AND MUSCLE BOUND — SOME HAVE "IT" SWEET SYMMETRY — SOME STICK BACKWARDS FROM THE KNEE — SOME ARE CLUMSY — SOME PETITE — SOME ARE BIGGEST NEAR THE FEET — SOME ARE WEAK — SOME ARE STRONG

BUT A STOCKING MAKER CAN'T BE WRONG!

Henriksen

FAMOUS ARTISTS CARTOON COURSE
Student Work
Lesson 6

To study and practice

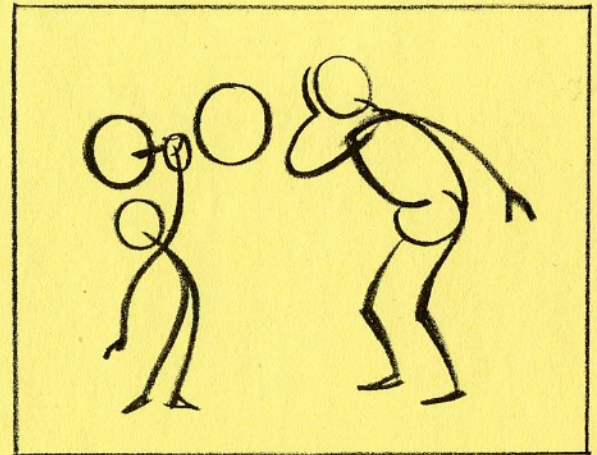
The framework of all figures is basically the same. The proportions of various parts may vary but the parts themselves should be established as simple cylinder forms before we concern ourselves with adding anatomical detail -- simple or complex. The basic form figure is something every cartoonist must practice drawing in many different positions and actions -- it is a successful, tested way to draw believable figures. Perhaps it seems a far cry from the humorous cartoonist's idea of a good, ridiculous figure. It is -- but good exaggeration always comes from understanding the reality of things.

Make many sketches of skinny, fat and husky gents using the basic figure to establish their form -- depending on your own style of drawing. However you work, don't become so involved with drawing the individual muscles that they become more important than the figure itself otherwise your drawings will resemble medical charts instead of being cartoons.

We will base our criticism of your drawing for this lesson on your understanding of muscle structure, figure construction and action together with your handling of any foreshortening problems which you encounter.

The assignment you are to mail to the School for criticism

On a sheet of 11 x 14-inch Bristol board, rule and ink a panel 7 inches high and 9 inches wide. In it draw and then ink with a pen or brush two men on a beach. One is a short, skinny character, 3/4 front view, who is nonchalantly lifting a huge barbell with the greatest of ease. The other is a big, muscular gent of the athletic type, front or 3/4 front view, who is staring at the little guy in amazement. The big fellow will provide an opportunity to show muscle detail but be sure to establish good action and facial expression first. You may follow the gesture-action sketch at the right for general action and composition if you wish or, better still, create your own.



Present your assignment in the same clean, professional manner you would use if you were submitting it to the cartoon buyer of a publication. Letter your name, address and student number carefully in the lower left-hand corner of the page. In the lower right corner, place the Lesson Number. Mail to:

FAMOUS ARTISTS CARTOON COURSE
Westport, Connecticut