This book is dedicated to
Walt Disney
and the staff of artists
who brought the magical quality of lift
to character animation.

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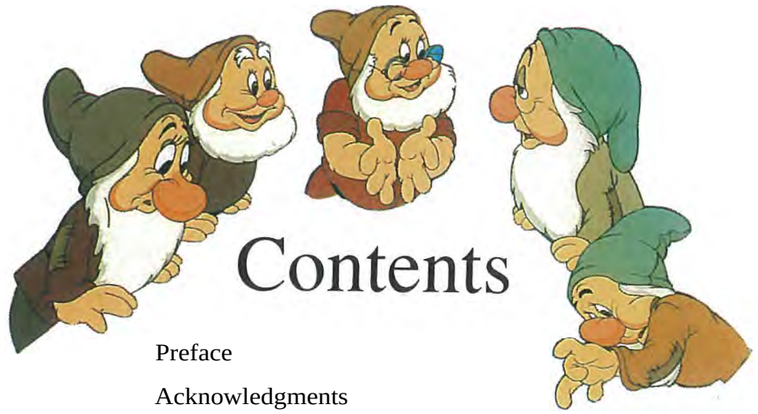

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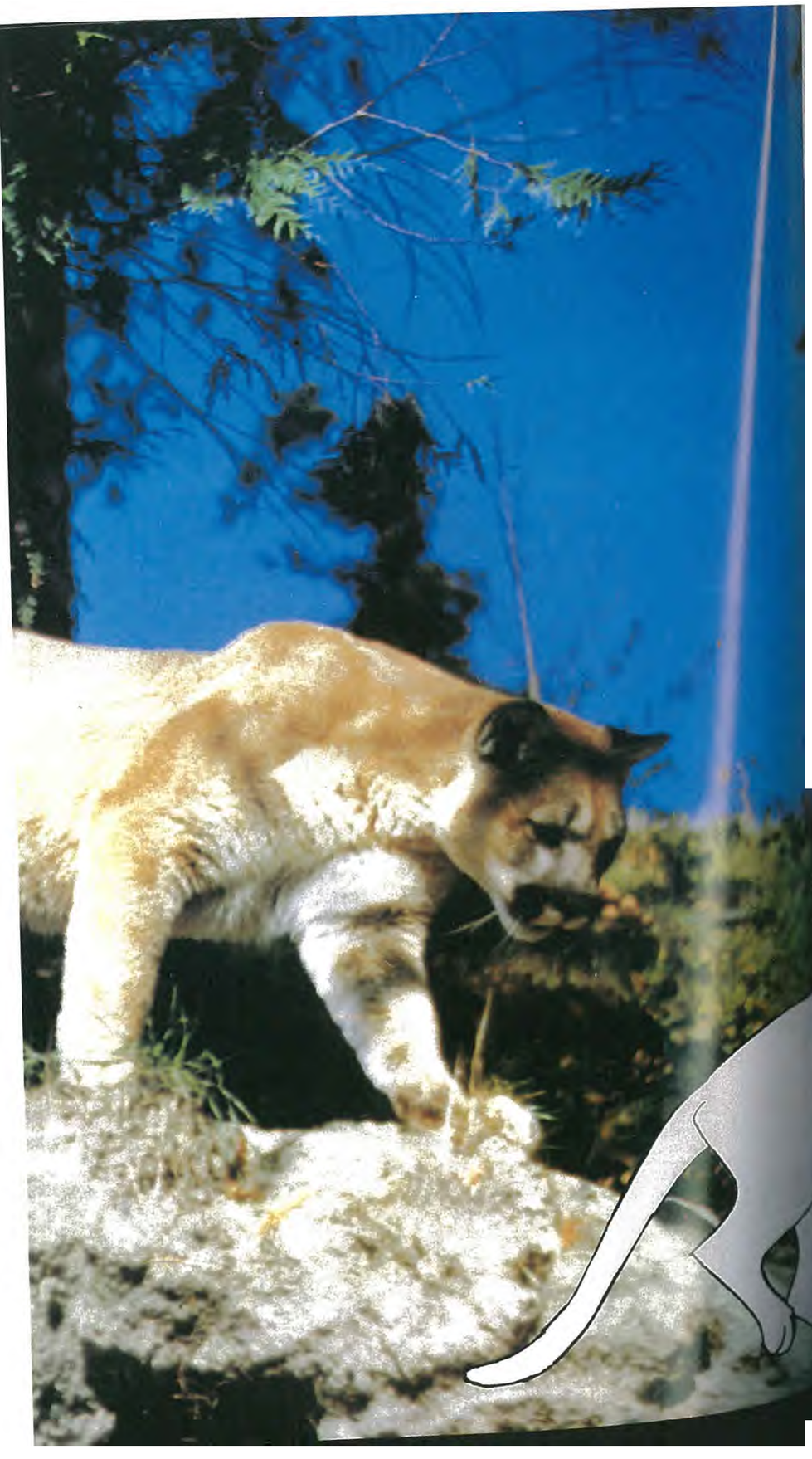
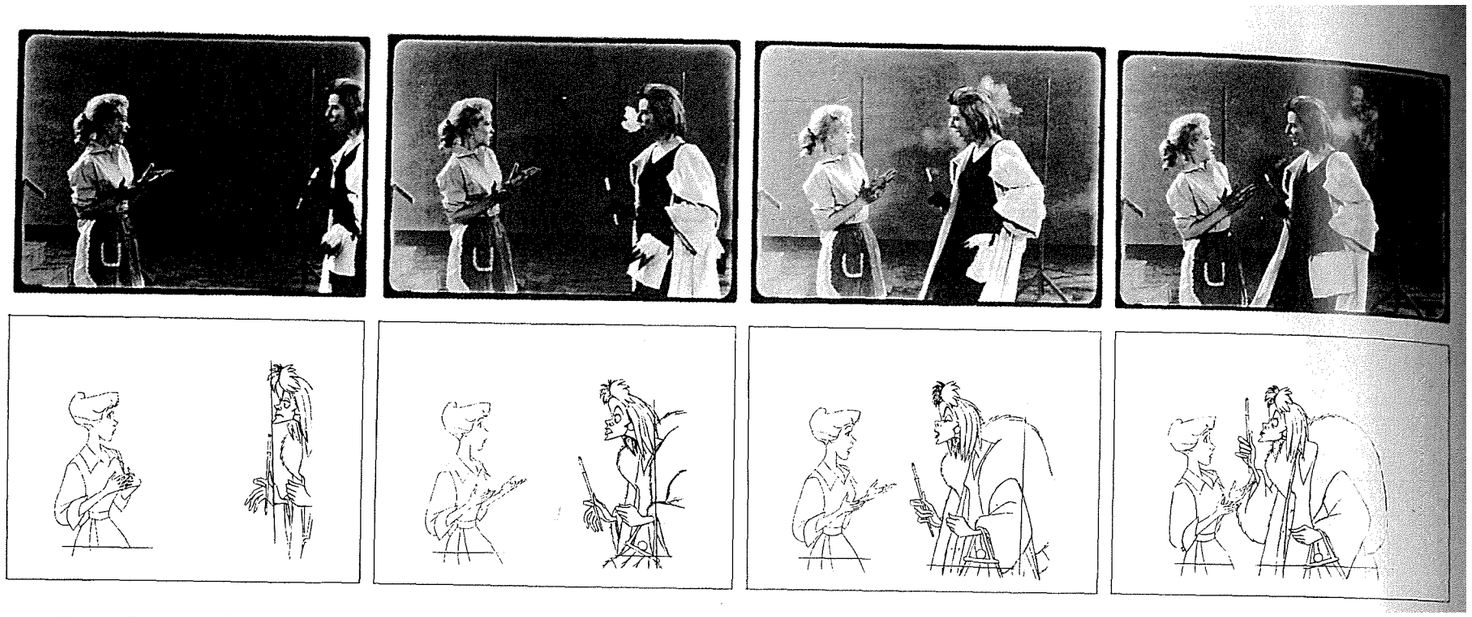


13. The Uses of Live Action in Drawing Humans and Animals

`This is a very important thing. There are so many people starting in on this, and they might go hay-wire if they don't know how to use this live action in animating." Walt Disney

Our term "live action" refers here to the filming of actors (or animals) performing scenes planned for cartoon characters before animation begins, as compared to "regular animation," which develops entirely from an artist's imagination. The direct use of live action film has been part of the animation industry for years—as an aid to animation, a companion to animation, and even as a replacement for animation. From time to time, almost every studio has fallen back on a strip of live film to perfect a specific action animators were not able to capture. At the Disney studio, filmed action of humans and animals was used in many ways to do many jobs, and it led to some important discoveries. Live action could dominate the animator, or it could teach him. It could stifle imagination, or inspire great new ideas. It all depended on how the live action was conceived and shot and used.

In the early 1930s, animators drew from the model regularly, but as the necessity grew for more intricate movement and convincing action in our films, this type of static study quickly became inadequate. We had to know more, and we had to draw better to accomplish what Walt Disney wanted. Some new way had to be found for an artist to study forms in movement, and



Helene Stanley, left, portrays the gentle Anita in 101 Dalmatians, *while Mary Wickes is her overbearing, flamboyant friend Cruella deVil. Each actress contributed her own ideas on personality and mannerisms within the framework of the action devised for this particular scene.*

ANIMATORS: *Milt Kahl, Anita; Marc Davis, Cruella-*
101 Dalmatians.

The animators' drawings show the freedom used in interpreting the action on the photostats. Milt, animating Anita, chose not to use the cringing body position suggested by Helene, while Marc went even further with Cruella, adding the thrust to the neck and a thin, bony body. By working closely together, the two animators were able to make the drawings match in size and scale, while the performances of the actresses maintained the personality relationship.

for this to be useful it had to relate to the work on our drawing boards. Running film at half-speed in our action analysis classes was helpful for a general understanding of weight and thrusts and counter thrusts, but the principles were not directly applicable to animation. Our instructor Don Graham had chosen certain film segments as clear, isolated examples of movements he could use in his lectures, but, while they gave us insight into articulation, they were still essentially classroom exercises.

One day, during a discussion of how the *Snow White* dwarf Dopey should act in a particular situation, someone suggested that his actions might be similar to those of burlesque comedian Eddie Collins. This led to everyone's going down to the theater to see the exceptional Mr. Collins perform. We invited him to the studio, and a film was shot of his innovative interpretations of Dopey's reactions—a completely new concept that began to breathe life into the little cartoon character. Dopey had been the "leftover" dwarf, with no particular personality and not even a voice; so, now, to see the possibility of his becoming someone special, and, particularly, someone entertaining, was an exciting moment! And best of all, everything Collins had suggested was on film.

There was nothing in the film that could be copied or used just the way it was, but as source material it was a gold mine. Freddie Moore had the assignment of doing the experimental animation on Dopey, and ran the Collins film over and over on his Moviola searching not so much for specifics as for the overall concept of a character. Then he sat down at his de: and animated a couple of scenes that fairly sparkle with fresh ideas. Walt turned to the men gathered in the sweatbox and said, "Why don't we do more of this?"

Immediately other comics were brought in—entertainers from vaudeville, men who had done voices for the other dwarfs; all were put before the camera. No routines were filmed, just miscellaneous activities and expressions that might help delineate a character. Our own storymen who had a special talent for acting were dragged to the sound stage, and animators even photographed each other. As Bill Cottrell said years later, "It all seems so amateurish now—but it was fun! It *was* fun!" And that spirit of fun and discovery was probably the most important element of that period.

Now we had film that had been shot just for us, directly related to the characters we were drawing, and even though the acting was crude, we all picked up ideas to enrich our scenes. We quickly found that there were two distinctly different ways this film could be used. As resource material, it gave an overall idea of a character, with gestures and attitudes, an idea that

could be caricatured. As a model for the figure in movement, it could be studied frame by frame to reveal the intricacies of a living form's actions.

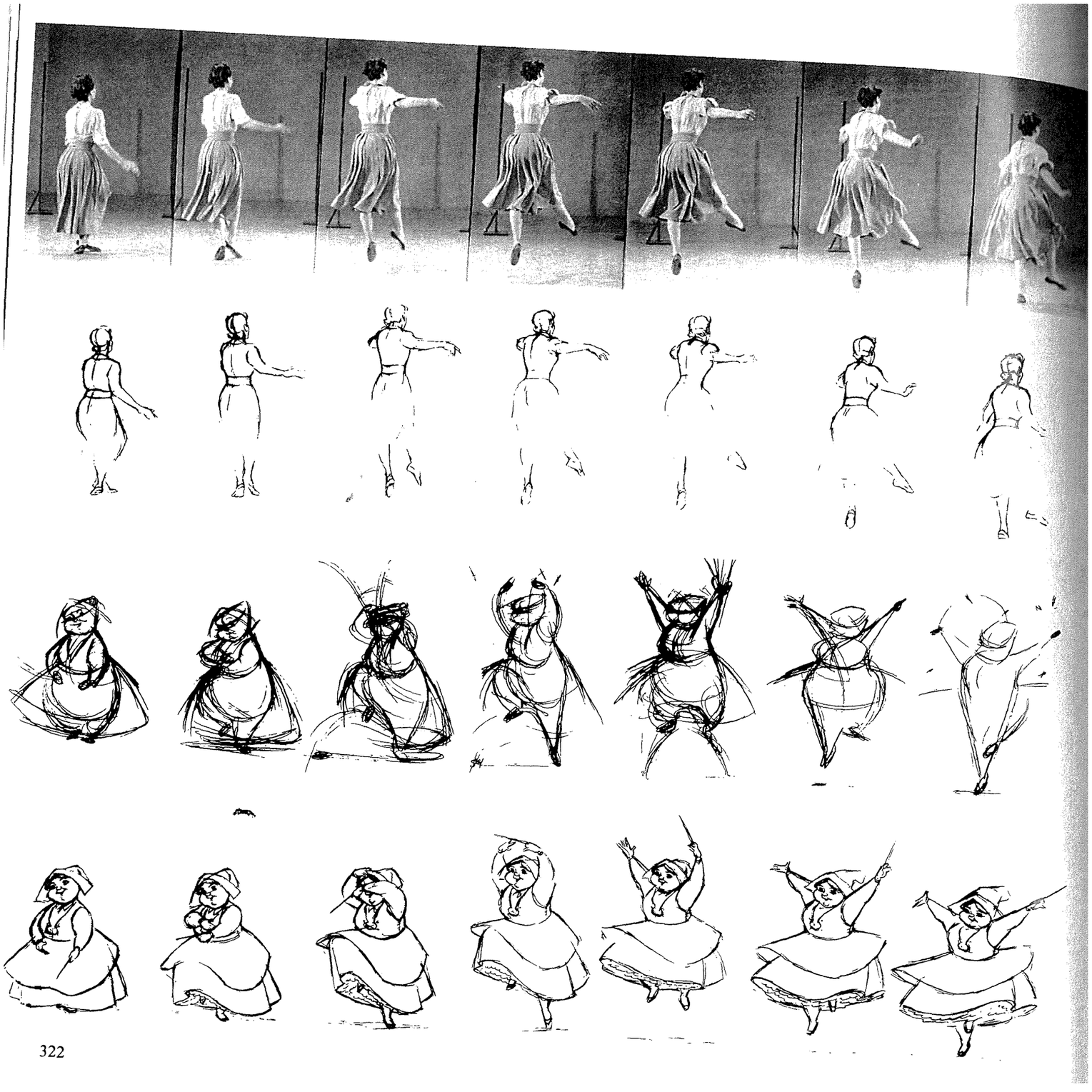
At that time, the only way of studying live action frame by frame was to trace the film on our rotoscope machine. This was simply a projector converted to focus one image at a time, from below, onto a square of clear glass mounted in a drawing board. When drawing paper was placed over the glass, tracing after tracing could be made, each sheet kept in register by pegs at the bottom of the glass. It was tedious work and time-consuming, but this was the way it had been clone for twenty years.

Naturally, Walt changed that situation in a hurry. He had the film processing lab work out a system of printing each frame of a film onto photographic paper the same size as our drawing paper. These sheets, which we called photostats, were then punched to fit the pegs of an animation desk, and the animator could now study the action by flipping "frames of film" backward and forward, just as he did his drawings. Here could be seen every tiny detail of changing shapes and relationships in the movements. At last, the animators could study all of the mysteries that had intrigued them so long.

We were amazed at what we saw. The human form in movement displayed far more overall activity than gone had supposed. It was not just the chest against hips, or the backbone bending around, it the very bulk of the body pulling in, pushing out, stretching, protruding. Here were living examples of the "quash and stretch" principles that only had been theories before. And here was the "follow through" and the "overlapping action" the changing shapes, the tensions and the counter tensions, the weight shown in the "timing" and the "exaggeration"—unbelievable exaggeration. We thought we had been drawing action, but here were examples surpassing we had done. Our eyes simply are not quick enough to detect the whole gamut of movement in the human figure.

Some actions were so complicated they were impossible to draw in caricature, and many of the moves that gave touches of personality were too subtle to capture at all The tilt of the head as it turned, the changing shape of an eye, the slight swelling of a cheek in a

The animation of the wicked, scheming stepmother in Cinderella *was based on the strong actions and expressions of Eleanor Audley. These photostats show the relationship of the features and the timing of the move, but the face had to be redesigned to match the other characters in the picture. Nothing on the photostats could be traced or copied, but they still gave an excellent guide for the action needed in the scene.*



fleeting smile, the raising of a shoulder as the body leaned forward—these were the precious elements of life revealed by the camera.

But whenever we stayed too close to the photostats, or directly copied even a tiny piece of human action, the results looked very strange. The moves appeared real enough, but the figure lost the illusion of life. There was a certain authority in the movement and a presence that came out of the whole action, but it was impossible to become emotionally involved with this eerie, shadowy creature who was never a real inhabitant of our fantasy world.

Not until we realized that photographs must be redrawn in animatable shapes (our proven tools of communicating) were we able to transfer this knowledge to cartoon animation. It was not the photographed action of an actor's swelling cheek that mattered, it was the animated cheek in our drawings that had to communicate. Our job was to make the cartoon figure go through the same movements as the live actor, with the same timing and the same staging, but, because shapes called for a difference in propor , the figure and its model could not do things in exactly the same way. The actor's movements had to he reinterpreted in the world of our designs and shapes and forms.

As long as we remembered to use the phoostats only as a reference in making our own statement of should be in the scene, our animation was never tight or restricted. Our drawing ability had to improve, our knowledge of anatomy and acting had to increase, and our judgment had to develop, but, with an Walt Disney watching every line we made, was automatic—difficult, but expected. Our animation picked up a crispness, a force, and a richness it never had before. This took study and analysis and careful work, but once a movement was understood it easily could be incorporated into cartoon terms. We had 11. de the big break with rotoscope.

No one knows for sure why a pencil tracing of a live action figure should look so stiff and unnatural on the screen, unless there simply is no reality in a copy. The animators had learned this in art classes, but, somehow. studying film of a moving model made them think that live action was different. The camera certainly o rd s what is there, but it records *everything* that is there, with an impartial lack of emphasis. On the other hand, an artist shows what he sees is there, especially that which might not be perceived by others. His drawings can be closer to the true realism of an object because he can be selective and personal in what he chooses to show. From the photostats, the animator chooses only those actions that relate to the point of his particular scene; then he strengthens those until they become the dominant action, with everything else either eliminated or subordinated. What appears on the screen is a simple, strong, direct statement that has clarity and vitality. The spirit and life have been gained by adapting the human form to an artist's own designs, the shapes and forms that he uses in reaching an audience. This is no more than what artists always have done. Michelangelo's magnificent statue of David, for all of its power and beauty, has such distorted normal proportions that David would be a strange looking apparition were he to be met walking down the street. The celebrated Venus de Milo could not even fit into modern clothes, and most of the other classic beauties of art, who have enthralled men for centuries, would attract only stares of amazement at a social function. The point is: a work of art is never a copy; for it to have meaning to people of many generations and numerous cultures, it must be the personal statement of an artist.

The first live-action films we had shot were for reference only, and it was pure chance that something fit either our story continuity or our sound tracks. But it was not long before one of us had picked out an action he liked on a piece of film, synced it up with his sound track, made a couple of adjustments in timing, and then incorporated that action into his animation. we were shooting film for specific scenes or special actions, so that an animator would not have to spend too much time searching for relevant material.

As a director shot more and more of his cartoon continuity in sequence with live actors, he began to realize that this was a wonderful opportunity to check planned business and staging before it was animated. This was also an excellent way of establishing early communication with the animator himself, for here was something tangible to discuss. The action was on film, and the director and animator could build from there, adding or cutting, doing more or doing less,

Actress Helene Stanley devised a light dance step for Merryweather cleaning the house with magic in Sleeping Beauty. *Later work on the sequence determined that the action would be better seen in front view, which was no problem once the action was understood by the animator.*

1. First a drawing was made over the photostats, tracing action the animator wanted to retain, emphasizing points that made the movement unique, and noting the relationships and timing of all the parts.

2. Setting the photostats aside, the animator worked from his own drawings to capture the same action in the proportions of his cartoon character, who, at this point, was turned around to face the camera.

3. Using this second set of roughs as he would on any scene, he proceeded to animate normally. Occasionally he referred back to the photostats one more time for some fine point that did not seem to be working or to solve a difficult drawing problem within an action. After all, that is what a model is for.
(ANIMATOR: Frank Thomas —Sleeping Beauty.)

strengthening or modifying: but, at least, they were starting from the same point.

All of this demanded more care in the planning and shooting of live action film. If the image on the film was right, a weak animator could get by with it and a good animator could make it even better. However, if the live action was poorly planned, or staged in a confusing manner. it would cause trouble for everyone, and the director would do better to throw the film away and start afresh with the animator and his storyboard. Essentially. the film should be considered a further step in the visual development of the story material, like an advanced story sketch. and it should be shot with that purpose in mind. Before going over to the sound stage, the director should take a hard look at the scenes he is planning to shoot and ask himself:

Is this material really ready to go into animation?

Does the business fit the story? The character? Is it right for the mood, the tempo, the overall idea?

Is it entertaining? Is it just somebody saying some necessary dialogue, or is it a situation that gives the actor a chance to build and contribute?

If we happen to get some funny action or new business, will it fit? Can this be used easily and effectively? Does it animate as it is? Will it make a good :.gene'? Would I be excited if I had to animate it'?

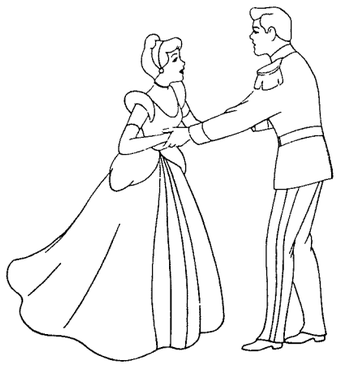
m I helping the animator by shooting this, or will it be tough to handle once it is on his board?

And when the director is on the stage with the scene rehearsed and the actor ready. he should remember renowned film director Stanley Kubrick˙s final check: "Is anything happening worth putting on film?"

Unless a director is exceptionally wise, or an animator himself, he should ask the man who ultimately will animate the scenes to help plan the business on the stage. Almost always when someone else shoots film lor an animator the camera is too far back, or too Close, or the action is staged at the wrong angle to reveal what is happening. or it is lighted so that what you want to see is in shadow. Occasionally the footage will show only continuity of an actor moving from one place to another, or just waiting, or getting into position to do something interesting later on. The action must be staged with enough definition and emphasis to

The whole production unit often participated in the shooting of crucial actions. In this scene for Sleeping Beauty, *from the left, layout men Ernest Nordli, Don Griffith, and Tom Codrick check their layout continuity; performers Ed Kernmer and Helene Stanley discuss their roles with the director, Clyde "Gerry" Geronomi; supervising animator and sequence director Eric Larson reviews the script while production designer Mac Stewart makes sore the camera position matches the scene that has been_planned.*

Actor Hans Conried portrays Capt. Hook and artist-comedian Don Barclay gives a very imaginative performance as Mr. Since in this scene from Peter Pan. *The prop man rocks the boat, creating an action that would be difficult to animate convincingly, while an unidentified child actor plays the stoical Indian princess Tiger Lily.*



Human Characters

ANIMATOR: *Eric Larson*—Cinderella.

When a pretty girl or a handsome prince are presented romantically, they must be conceived as "straight" and drawn realistically and carefully.

ANIMATOR: *Milt Kahl*-101 Dalmatians.

If the shapes in the face and body can be caricatured just a little, the characters will be easier to animate and more convincing to the audience, as in this scene of Roger teasing his wife Anita in 101 Dalmatians.

ANIMATOR: *Eric Cleworth*-101 Dalmatians.

The Baduns were the henchmen of Cruella deVil in 101 Dalmatians *but their stupidity made them a constant liability. The grotesque design enhanced the slapstick routines and semiserious business of these second-rate villains.*

be extremely clear, but neither overacted nor so subtle that it fails to communicate.

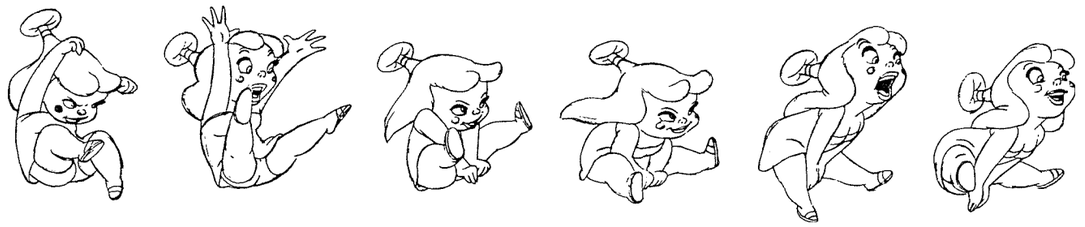
Great care in the shooting produced scenes on film that were so succinct, so rich, and so well staged that they could be cut into the continuity reel almost like a first rough test of animation. However, they were not the straight pieces of acting one might expect in a live action film, because these imaginative scenes had been carefully planned for the medium of caricature. Usually we used actors whose talents included comedy, inventiveness, and creativity—as well as considerable theatrical experience. As the result of building scenes with such people, incorporating new ideas, searching for a way that communicates better or offers more entertainment, the live action film gave the animator a springboard to go beyond what he could have imagined himself.

We photographed anything that might prove helpful, and soon we discovered that the timing of a clever actor could make a mild gag hilarious, that an experienced stage comedian would offer sure ways of staging a scene's business, that another talent might suggest ways to put life into actions that had been conceived simply as continuity. Some actors gave back only what was asked of them; others were eager to take over and tell us how to do our whole production. In between, there was a group who enjoyed working on a role, building character, and finding ways to make it memorable.

Many times a performer would devise a piece of business so funny, so unusual and appealing, that everyone would be sold on it immediately—blinded to the fact that its length would slow down the pace of the story. Just because some business is funny does not necessarily make it right for that place in the picture. It t is very difficult to judge whether a suggested way of doing something is worth the extra footage or whether it can be shortened in animation without losing its value. Comedy routines and personality-building both take time; they cannot be rushed. The director animator must decide whether they are gaining imp - tant development with this piece of entertaining acting or just stretching out the picture.

Usually we did not use the same person for both the acting and the character's voice on the sound track. since we found that actors had a tendency to give the same interpretation to both performances. What we, wanted was someone who could add to the physical performance, come up with a new dimension, a way of doing it that no one else had suggested. To get that, we needed an inventive actor fresh to the whole idea, with no preconceptions to limit his imagination.

The sound track was on a record, which could be played over and over while the actor was rehearsing and trying out ideas for timing and character. Then, when the scene actually was shot, a recording was made of the sound as heard on the stage by the actor. After a "take" was chosen several days later, this recording was replaced by the original track, matching in sync what had been recorded on the stage. If new actions had been devised that required more time between lines of dialogue, there was no way of changing the track at that point; so, the needle was lifted from the record and the scene was shot "wild." After the film came back from the lab, the director and the animator juggled the picture and the sound track back and forth until they had the best sync they could achieve. Sometimes a new interpretation would develop



that necessitated doing the dialogue over with a different phrasing or expression; that sequence would be marked for a retake the next time the "voice talent" was at the studio - another reason for not recording all of the sound at one session.

It became increasingly important to choose just the right actor for this type of live action, since it would have such an influence on the development of a character's personality, and even on the entertainment value in the picture. Some comedians were versatile enough to suggest antics for characters in one picture after another, but for the most part we wanted a different actor for each role. Obviously, the Huntsman in *Snow White* could never be portrayed by the same man who would do Mr. Smee in *Peter Pan.*

Occasionally, there will be a cartoon character requiring such a subdued role, or such careful planning, that there is virtually no room for new concepts from the actor. Once the role comes to life with the proper voice, the visual image should match, and nothing more. The Huntsman needed no more personality, no more acting; his scenes had been so well conceived that he had only to look convincing to make his sinister role believable.

Of course, there is always a big problem in making "real" or "straight" characters in our pictures have enough personality to carry their part of the story. Animator and director Woolie Reitherman has said,

The art of animation lends itself least to real people, and most to caricatures and illusions of a person." The point of this is misinterpreted by many to mean that characters who have to be represented as real should be left out of feature films, that the stories should be told with broad characters who can be handled more easily. This would be a mistake, for spectators need to have someone or something they can believe in, or the picture falls aparts. In *The Rescuers,* the young girl Penny was surrounded by a whole cast of broad characters; but, while they enriched the story, they did not carry it. As Woolie said afterward, "Naw, the little girl was so believable! All those things around her were great, but you needed that sincerity."

The sincerity in that case came from careful planning of the scenes to make use of the most appealing aspects of this little character. Some miscellaneous scenes had been filmed of two different five-year-old girls, so that the animator could study how a child of that age moved, but there was no attempt to record special moves or actual scenes after that. Instead, the effort had gone into finding the right things for her to do and the best way for her to do them. It is axiomatic that boy or girl characters can be done more easily in live action than in cartoon, and that one should not do things in a cartoon better done in live action. However, if that philosophy had been followed over the years, there would have been no *Snow White,* no *Cinderella,* no *Peter Pan,* nor most of the features that the Disney studio produced. To make a "straight" character convincing and interesting requires great creative effort. It may take imagination and a knowledge of both story and animation, but there is always a way—if the staff is smart enough to find it and willing to work hard enough to accomplish it.

Generally speaking, if there is a human character in a story, it is wise to draw the person with as much caricature as the role will permit. Early in the story development, these questions should be asked: "Does this character have to be straight?" "What is the role

ANIMATOR: 011ie Johnston—
Reason and Emotion.

The broader the design, the greater the communication, and the more fun for the animator. The essence of pure, undisciplined emotion was embodied in this chubby lady for the film Reason and Emotion. *Without the restrictions of realism, the animator was able to make her appealing, and even a little sexy.*

Snow White

we need here?" If it is a prince or a hero or a sympathetic person who needs acceptance from the audience to make the story work, then the character must be drawn realistically, but not necessarily in a restricted manner. In *101 Dalmatians,* Roger and Anita had to be treated as real people because of the genuine concern they had for their pets; yet they were drawn with less realism than the prince in either *Snow White* or *Cinderella.* The design of the whole picture, as well as the treatment of the story, permitted the animator more freedom in representation. The Baduns and Cruella deVil had broader roles and could be drawn with more caricature, which immediately made them more interesting and stronger. In *The Rescuers,* the little girl had to be drawn sincerely because she was the heart of the story; Medusa and Snoops could be wild, comic figures because they were not sinister.

Whenever two or more animated characters are in the same scene, interrelating in ways that are true to their own personalities, live action staging can be particularly helpful. Technically, it is difficult to animate two characters sharing a space, moving them about without their stepping on each other, while keeping a general feeling of dimension and volume in the scene. The problem is compounded if some critical acting is required at the same time. When the scene is shot with this in mind, and the actors move around in a way that is helpful to the animators, everyone will benefit.

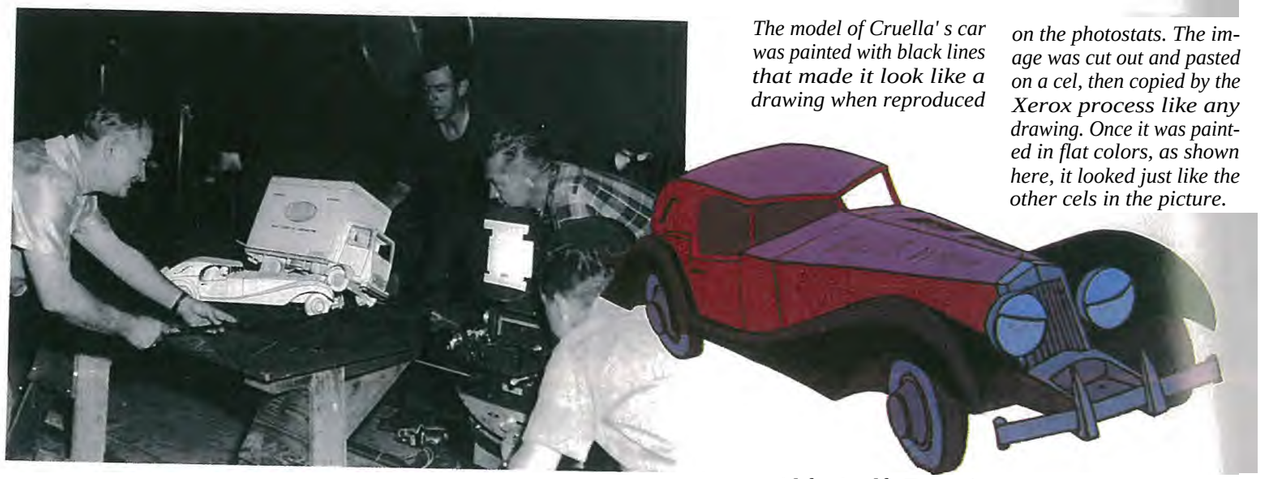
Les Clark was given the scene to animate of the three dwarfs dancing with Snow White—the only long shot that showed the dimensions of the dwarfs' room and the scale of the characters through their movement. Animating the decrease in the girl's size as she moved away from the camera was controlled by working from the live action film, but the matching perspectives of the dwarfs that Les animated from imagination made the scene amazingly convincing and added credence to the whole sequence.

Any dancing scenes in a story should be shot early and planned throughout the musical number, rather than handed out piecemeal when an animator needs them. Obviously the choreography will be richer if a dancer plans it all, instead of leaving it up to the unresolved fantasies of some storyman. In the scene Les had, there was a special problem with Snow White's hand positions. Just how high can a dwarf reach up comfortably to dance with a young girl? The height of each dwarf had to be planned, not in relation to the girl doing the live action but to her cartoon proportions, derived from the photostats of her dancing. For the scene to be effective, it was important that the dwarfs should not strain or be awkward as they reached to take her hand. Fortunately, with Ham Luske shooting the live action, all such details were carefully covered.

It is not worth the trouble of filming simply to record a change in size as a character comes closer to the camera, but if a major part of the design of a scene is based on startling perspective or the relationship of several characters working in perspective, then a great deal of the animator's time may be saved by first proving out the effectiveness of the scene on film.

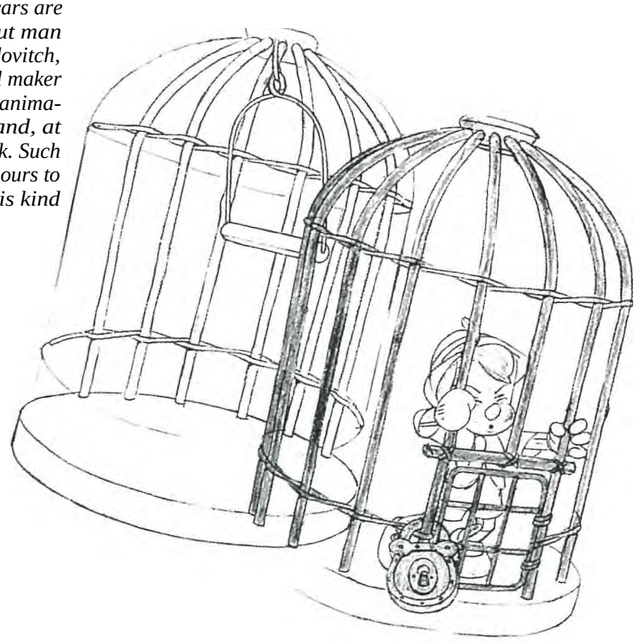
The same strategy applies to the action of the inanimate objects that might be in a scene. Rolling barrels, falling trees, avalanches, moving cars, wagons, and trains are all time-consuming and tedious for an animator to master, and they are questionable expenses in the animation budget when tracing such things from photostats will give just as good results, if not better. In *Pinocchio,* Stromboli locked the little fellow in a large bird cage made of bent sticks, which bounced and swung as his wagon bumped along the cobblestone streets. The cage even had a small perch inside that was swinging in a separate action. This intricate object would have been almost impossible to draw in the first place, let alone to capture the weight and convincing movement of its action. However, the point of the scene was not the cage but Pinocchio' s reaction while inside, calling for help. That action in itself was difficult enough for any animator, and fortunately there was no need to add more expense to the scene by having someone work over and over on the drawings of the swinging cage. A model cage was built at half size, and it was filmed so it appeared to be the right scale and weight for both the little puppet and the wagon. The animator then worked with tracings from photostats of the swinging cage, attempting to match the acting he wanted with the changing perspectives of the bouncing cage. It was a nightmare to animate, but a spectacular theatrical device.

In 1948, Walt Disney had money problems (again). *Pinocchio* (which had been finished in 1940) had not



The climax of 101 Dalmatians *featured a collision between two cars driven by the villains. Shooting the scene with models of the cars are from the left, layout man Basil "Dave" Davidovitch, animator and model maker Dick Lucas, effects animator Jack Buckley and, at the camera, Ed Cook. Such actions would take hours to animate without this kind of help.*

The model of Cruella' s car was painted with black lines that made it look like a drawing when reproduced on the photostats. The image was cut out and pasted on a cel, then copied by the Xerox process like any drawing. Once it was painted in flat colors, as shown here, it looked just like the other cels in the picture.



Tracings from photostats of the bird cage that imprisoned Pinocchio gave the realistic action that was needed while saving the time that would have been required to animate such a difficult assignment. Even more time was saved by drawing the back of the cage on one level and the front on another so that Pinocchio could be sandwiched between the two without tedious registration to the bars on every drawing.

yet paid for itself, *Fantasia* looked as if it was always to be in the red, *Bambi,* Walt's favorite picture of all was still not in the clear. The solution to the studio financial bind seemed to be another cartoon feature along the lines of the successful *Snow* White—rather than anything experimental. Although "package pictures," like *Make Mine Music,* did not have the production difficulties of a storytelling cartoon feature they had not been very profitable either. A new, less expensive way to make the projected *Cinderella as* full-fledged animated feature had to be found. Reasoning that animation was the most costly part of the business, Walt felt that everything possible should be done to save the animator's time, to help him make that first test "OK for cleanup" without correction. He turned to live action to solve his problem.

All of *Cinderella* was shot very carefully with live actors, testing the cutting, the continuity, the staging, the characterizations, and the play between the characters. Only the animals were left as drawings, and story reels were made of those sketches to find the balance with the rest of the picture. Economically, we could not experiment; we had to know, and it had to be good. When all of the live film was spliced together, this was undeniably a strong base for proving the workability of the scenes before they were animated, but the inventiveness and special touches in the acting that had made our animation so popular were lacking. The film had a distinctly live action feel, but it was so beautifully structured and played so well that no one could argue with what had to be done. As animators

we felt restricted, even though we had done most of the filming ourselves, but the picture had to be made for a price, and this was, undeniably, a way of doing it.

By the time we were starting *Peter Pan,* we had learned to get further away from any actual use of the live action scenes, restaging them after seeing weaknesses, using the film as a starting point from which to build and invent and enrich. We had been shown the way to go, but we had to do the "going" ourselves, and the picture was better for it. We recaptured much of the fantasy and magic in the features made before the second World War.

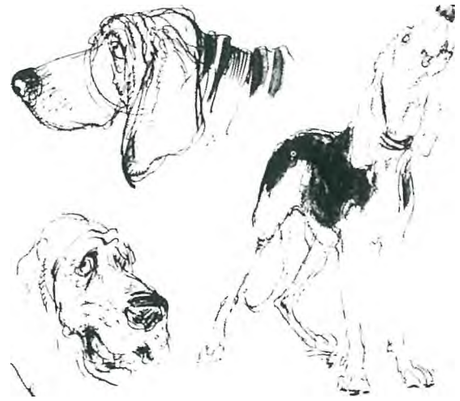
Animators always had the feeling they were nailed to the floor when their whole sequences were shot ahead of time in live action. Everyone's imagination as to how a scene might be staged was limited by the placement of the camera, for once a scene had been shot it was very hard to switch to a whole new point of view—even though in animation it is quite easy to hang the camera from a star, or a nearby cloud, or let it drift with the breeze wherever it is needed.

Animals

If an animal in a film is wearing any kind of costume, he can be handled with human attributes and the audience will accept him. In contrast, if an animal in his natural fur should suddenly stand up and start gesticulating, the viewers will feel uneasy. Put a cap on him, or a tie, and he can swagger around, gesturing and pointing like any ham actor.

Stranger than that, if the story parodies human activities, as in *Song of the South* and *Robin Hood,* there is no need to restrict a character's movements by the limitations of its animal body. The character can have human hands, fingers, a human pelvis, and feet with shoes. Of course natural animal drawing or realistic action will always add sincerity and interest to this type of film, but it is not truly needed to tell the story. On the other hand, if the story is man's view of what the animal world is like, as in *Lady and the Tramp, 101 Dalmatians,* and *The Jungle Book,* the animals must be completely believable or the whole premise will' collapse.

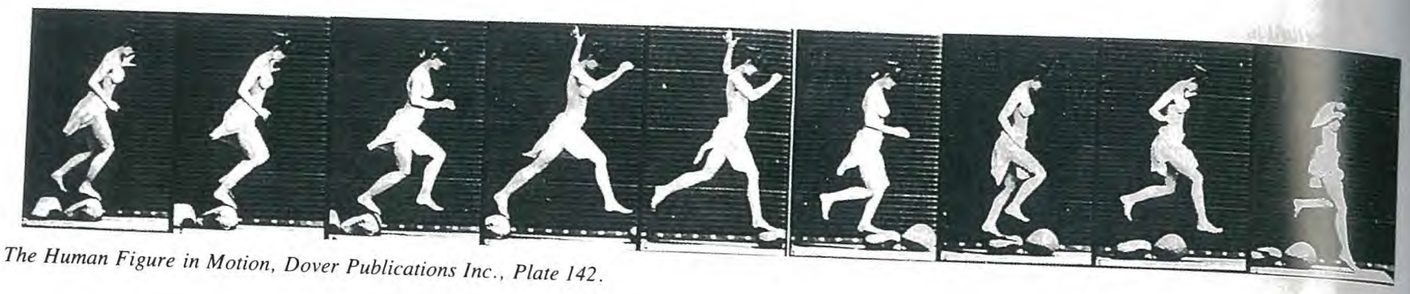
There was a unique situation in *The Sword in the*



Studies of hunting dogs for The Fox and the Hound *by Mel Shaw. This type of character has to be treated as a real dog throughout the picture.*

The animators agreed that the characters easiest to animate as well as most fun to draw had been the animals in the Uncle Remus stories of Song of the South. *Ken Anderson remembered those days when he suggested his version of Richard the Lion-hearted for* Robin Hood.

In The Sword in the Stone, *the wizard Merlin turned both himself and young Arthur into squirrels. They had to be drawn in such a way that they would look like the other squirrels yet still be recognizable to the audience. Here they are approached by an eager young female who wants Arthur for her mate.*



The Human Figure in Motion, Dover Publications Inc., Plate 142.

Muybridge's Complete Human & Animal Motion, Dover Publications, Inc. Vol. 3 (of 5 volumes)

The sequential photographs taken simultaneously from three different angles by Eadweard Muybridge in the late 1800s provide the best general reference available for any student of action and motion. The thrust of the body, the straight leg en both the jump and the landing, and the bulging tissues in the low positions are all clearly evident in these photos—what we call "squash and stretch." Note also the secondary action of the arms to maintain balance.

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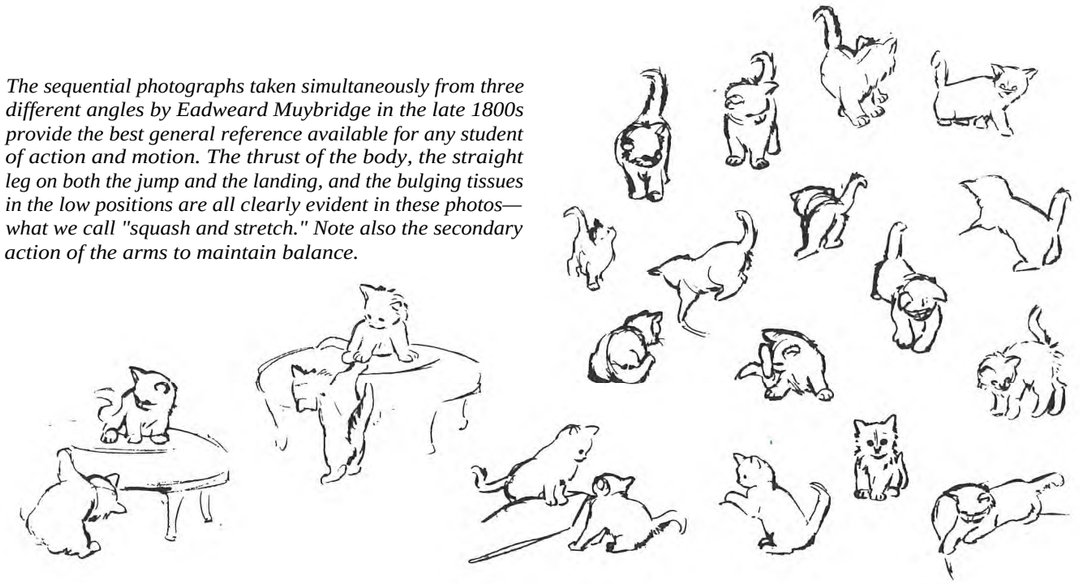
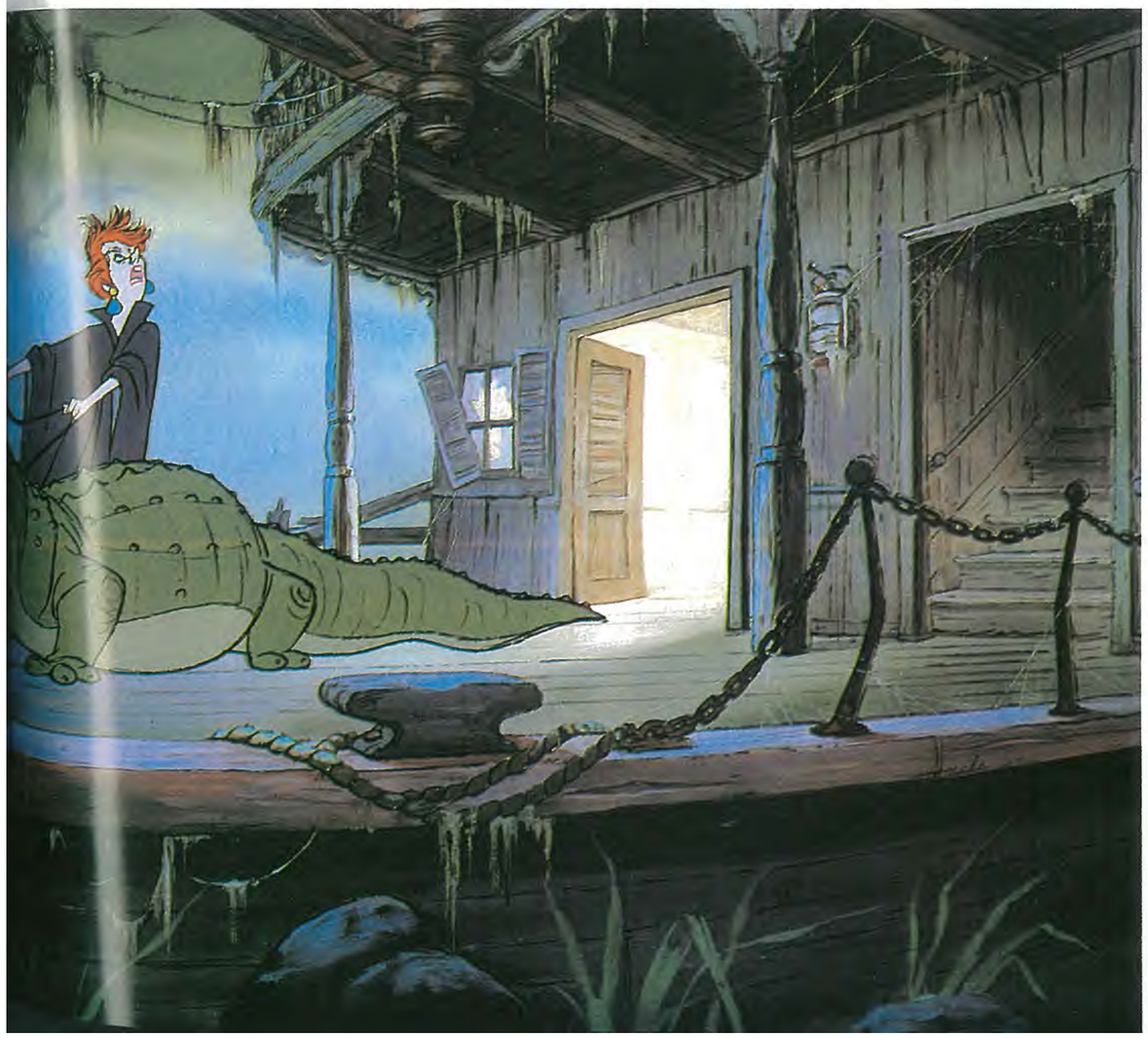


Sketches by 011ie Johnston. What makes a kitten cute and appealing? The animator tries to discover this by sketching from film taken for Aristocats.



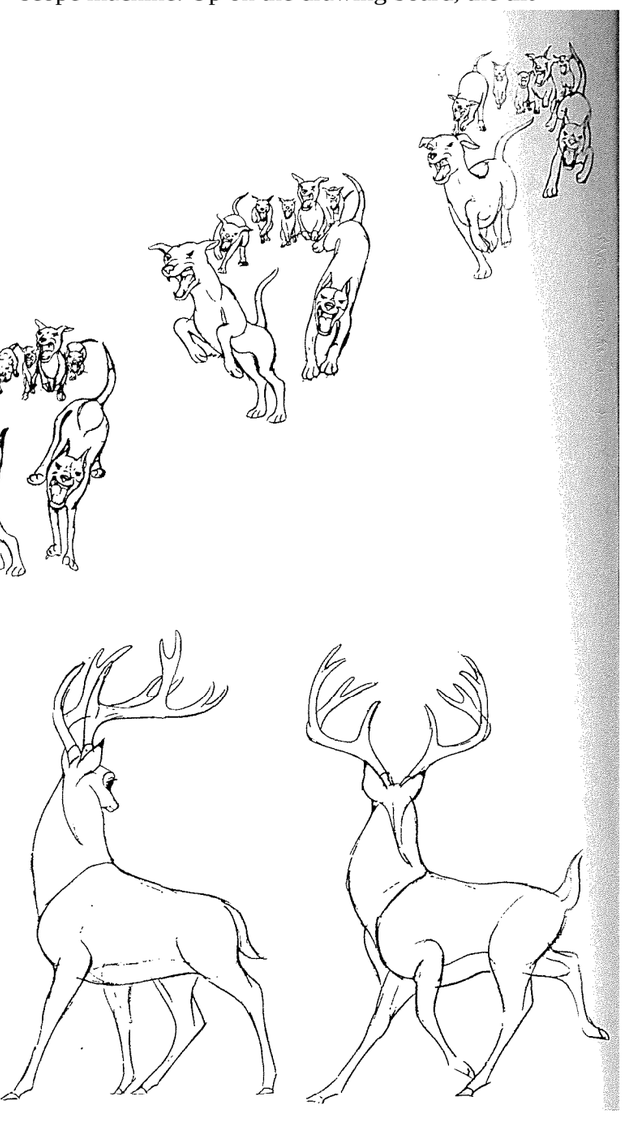
The Rescuers

course in comparative anatomy, illustrated with gentle little contour drawings that had no boldness or vigor, just surprising accuracy.

We had another unique talent in Retta Scott, the first woman at our studio to have an interest in animation. She had an astounding ability to draw powerful, virile animals from almost any perspective and in any action. At one point in *Bambi,* we needed some convincing and frightening hounds to chase our heroine Faline, but none of the animators was advanced enough in his understanding of hounds to tackle the assignment. Retta could draw the dogs in any position, and she knew the attitudes and the mood, but she was inexperienced in the art of relating one drawing to the next. So the supervising animator, Eric Larson, set the scenes up for her and showed her what needed to be done. With typical modesty, Eric says, "I worked with her on the timing, but she did it all; she worked and worked on it." However it was done, between the two of them there appeared on the screen one of the most chilling and exciting pieces of action ever to be animated.

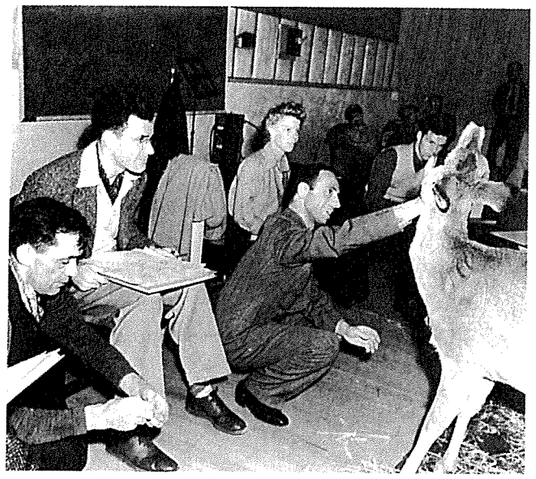
Another imaginative bit of problem-solving called for in *Bambi* was the drawing of the stag's Majestic antlers. To follow through the perspective of each bony-prong as the head moved about was just too

for even the most mechanically oriented artists. and the first filmed tests of the animation drawings revealed rubbery, wandering antlers—a distressin of majesty in what should have been the stag's crowning glory. So, a miniature plaster model was made the stag's head with the full complement of antlers atop and this was placed beneath the glass of the old scope machine. Up on the drawing board, the tilt



ANIMATOR: Retta Scott with Eric Larson— Bambi.

Vicious hunting dogs have been unleashed to track down the deer in this scene from Bambi. *Knowledge and drawing ability are combined to make an exciting action, so real it makes the audience gasp.*



had the first drawing of a scene with just the head of the stag carefully drawn in. He slowly turned and tilted the model underneath until the head lined up exactly with his drawing. This done, he simply traced the horns. That drawing completed, he moved on to the next; with a slight change in the model, more horns were ready to trace. The result was perfect—a bit tedious, but not nearly so demanding as the attempt to draw it all in perspective from imagination.

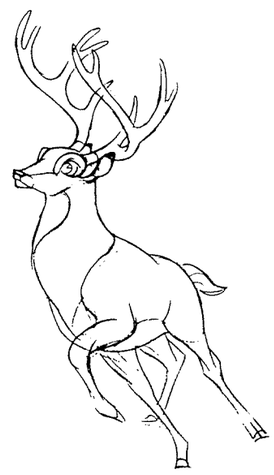
Rico Lebrun had been hired as we began to work on because of his knowledge of animals and his ability to teach. He felt strongly that the only way to learn all about an animal was to get your hands on it and move it about and feel how the parts worked. He started a search for a young fawn, but since none was then available we contented ourselves with studying what film we had and observing older deer at the zoo. One day, Rico got a call from a ranger in the Forestry Service who had come upon the carcass of a very young fawn, no more than two days old. It was still in good condition, and he could have it! Rico was ecstatic.

That night in class, we crowded in close to watch the movements of the legs and the back and the head as Rico turned the body round and round, testing the articulation of each joint. He was enraptured with his model; we were a bit more reserved,—after all, it had been dead for three or four days. Excitedly, he announced his plan to remove the outer layers, a little each night, so we could learn all the intricate workings right down to the skeleton. The whole procedure might take ten evenings in all.

The next night, we stood farther back as Rico

The fawn that had been the model for so many inspirational sketches had grown up by the time the animators started on the picture. Here, Rico Lebrun shows Frank Thomas how the head fits onto the neck. Also watching are Retta Scott and Bob Youngquist. (Man in foreground is keeper for the deer.)

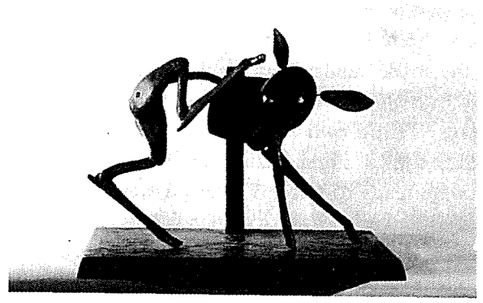
The deer showed more interest in 011ie Johnston's drawing than in her job of posing for the class. In background, Milt Kahl, left, and Bill Shull.

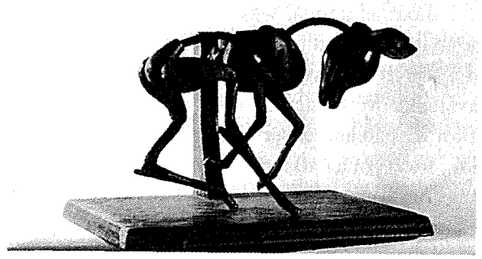


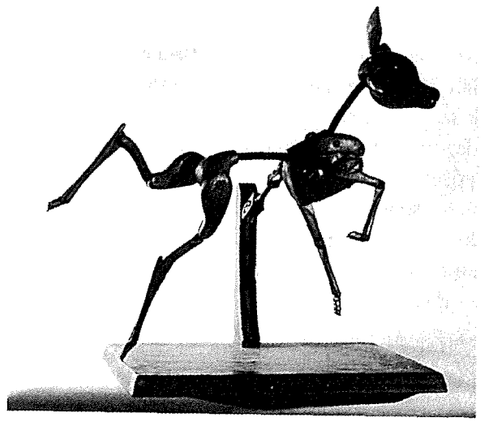
ANIMATOR: *Don Lusk-*
Bambi.

Drawing problems were more of a threat to the stag in Bambi *than bullets of the hunters. one could draw the antlers so that the volume and perspective were constant from drawng to drawing. The seen here came from a plaster model that be turned in any to match the animator's drawing.*

Expert model-makers constructed a jointed armature of a young deer for the animators to study while working on Bambi. *Based on Rico Lebrun' s drawings, everything moved correctly, right down to the toes.*



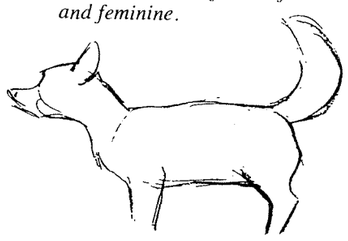


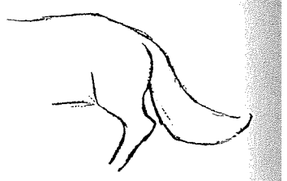


Tails and Ears Are Important Too

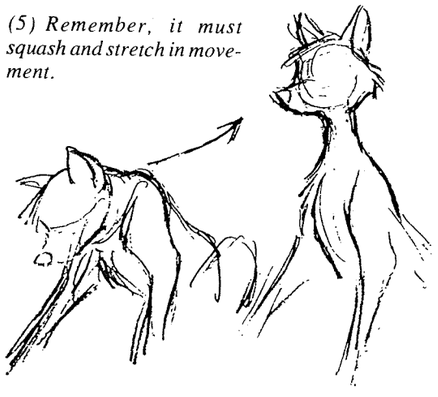
(1) Ears are an important part of the attitude on any animal.

(2) Hair can be a key to personality, and many times will show how a character feels. Scraggly hair gives an unkempt, irritable look. Smooth and sleek fur is soft and feminine.

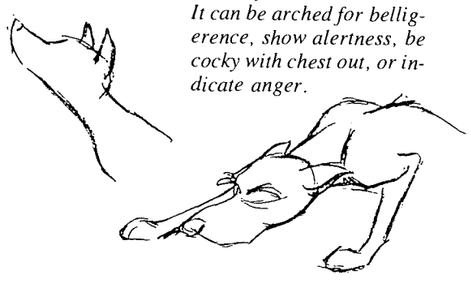




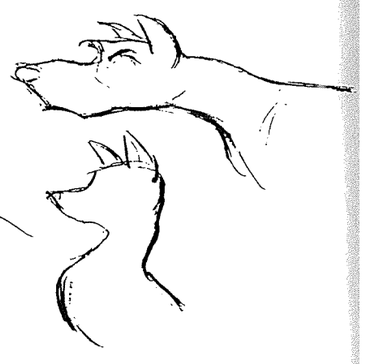
(3) Tails can do much to show the mood of an animal. They can give a perky feeling, or show dejection, or affection. They should not rest on the ground without a reason. They must have life too. Watch out for "dead" tails.

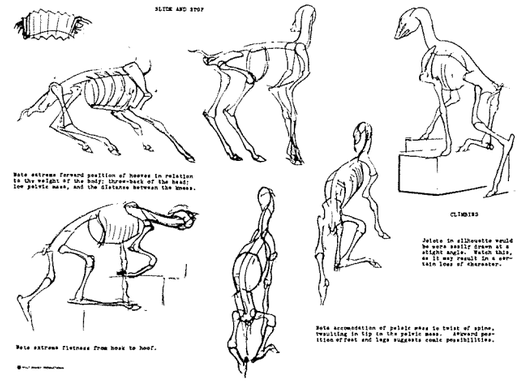


(5) Remember, it must squash and stretch in movement.

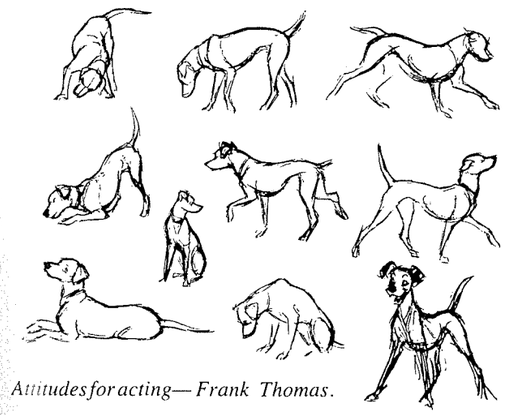


(4) The neck is often passed over when considering parts of the anatomy that can help show an attitude. It can be arched for belligerence, show alertness, be cocky with chest out, or indicate anger.





Drawings by Rico Lebrun of the skeletal construction of a fawn in various positions, done after his exhaustive research on the cadaver he brought to class.



Attitudes for acting—Frank Thomas.

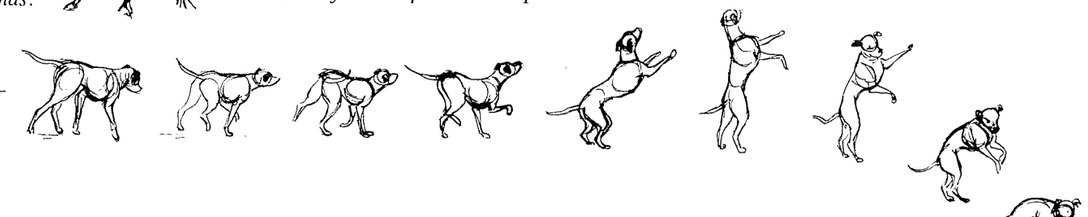
removed the skin—so we could examine the muscles and the tendons and the remarkable engineering principles revealed in this wonder of nature. Unfortunately, each time he contracted or extended any part of the cadaver a rich aroma was pumped into the air. He called to us, "Hey, fellas, get in here close where you can see what this thing is doing."

We answered warmly, "Oh, we can see just fine from back here!"

In spite of this unique opportunity to gain vast knowledge, attendance at those evening classes began to fall off. However, Rico's enthusiasm seemed to increase in direct proportion to the odor, which no longer could be described as merely pungent. Our noses finally turned us all away, but not his. He stayed with his prize until it was only bones. In the end, Rico furnished us with a wonderful set of drawings that we studied with considerably more relish.

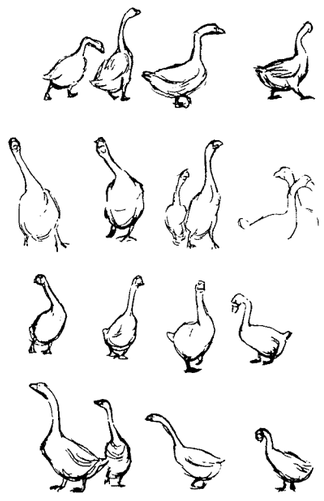
While it is extremely helpful to understand the anatomy of an animal, its movement and timing and balance and rhythm are just as important from an animation standpoint, and probably they all should be learned together. This is a comforting thought if the subject is a lion, or tiger, or rhinoceros, or any large, wild crea-

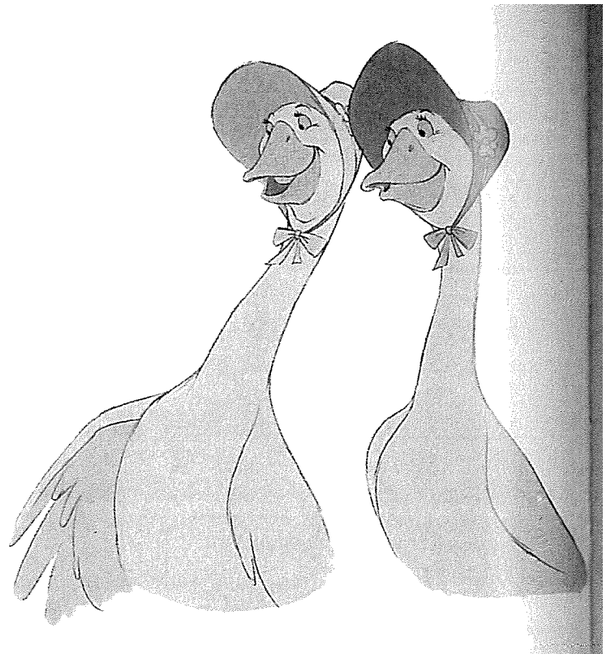
Exhaustive research was always done as the animators began a new character. Sketching directly from the film often catches the spirit of an animal and the essence of his movement. For 101 Dalmatians *we used our filmed action this way more often than on photostats.*



Action sequences—Ollie Johnston.

Structural analysis—Marc Davis.





Two special characters begin to emerge in these sketches from film and from memory by 011ie Johnston. These were the geese we had photographed for a sequence in The Aristocats.

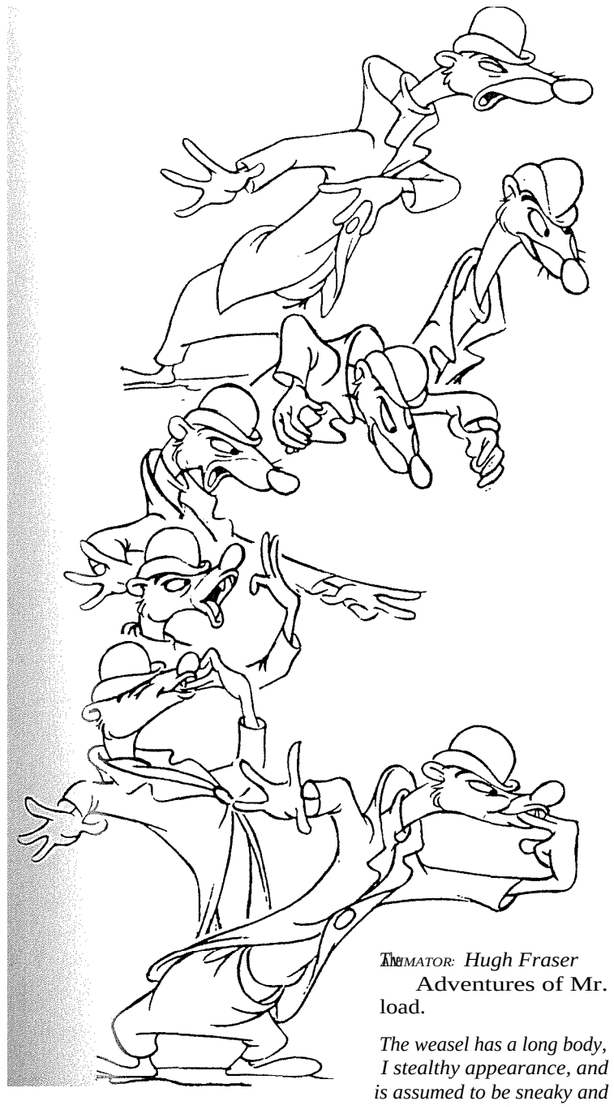
The vain and giddy spinsters Amelia and Abigail, as they appeared in the final design.

ture. We had little desire to probe with our fingers the inner workings of the orangutan while animating King Louie for *The Jungle Book.* A few charts of comparative anatomy and some reels of film told us as much as we wanted to know.

Long before our artists encountered Rico's fawn cadaver, they had been studying the general behavior of real deer at close range. The studio had been sent a pair of fawns from Maine that were kept in an area alongside the animation building, and the artists had only to glance out the window for stimulation and reference to the real thing. Despite the great value to the artist in directly observing an animal in its daily activities, when a story called for a rare or unfamiliar action from a deer it was still a major problem for the animator. In the first sequence of *Bambi* we needed to portray those initial few minutes in a fawn's existence, when it is wobbly and vulnerable and puzzled by the world, and dependent on its mother. However, nature endows fawns with a strength and coordination that develops so quickly that within only a couple of hours they are very different creatures. When the San Diego Zoo phoned to say they had a doe ready to foal any day, the studio shipped a film crew down there immediately. They set up their equipment just outside the deer's enclosure, at a spot that gave them full coverage of every part of the pen. There was no place the doe could have privacy if she desired it. Although she had given all signs of being ready to deliver, a long night's vigil produced nothing. Nor the next day's either. The weary crew prepared for the second night under the watchful gaze of large, doe eyes. Morning came and the prospective mother was calm and reserved. The crew was exhausted.

When nothing happened during the whole day, no signs, no indications of any kind, the crew decided to get some sleep and come back about midnight, having been assured by the zookeeper that most births occur during the small hours of the morning. They were gone for barely five hours and returned still groggy and bewildered from too little sleep, but they were even more bewildered to gaze upon a frisky, playful five-hour-old fawn prancing about the enclosure. The crew went back to bed.

In contrast to live action films of humans, scenes of animal action seldom can be spliced into any kind of helpful continuity. There might be a short sequence of action scenes in a run or a fight that could be pieced together from scraps, but more often the animator has to be inventive, to find a specific place where he can use a particular action. Hopefully, he can find some film of an animal flopping down in an exhausted state, or one getting to its feet with a feeling of tired, aching muscles, or a spirited, excited turn, breaking into a run—all movements that suggest an attitude. Against this, the animator can place a line of dialogue delivered



ANIMATOR: *Hugh Fraser*
The Adventures of Mr. Toad.

The weasel has a long body, stealthy appearance, and is assumed to be sneaky and up to no good. As a cartoon character, he became a hoodlum.

with the same type of feeling, and with a little adjustment here and there (to improve the sync and match the phrasing) produce a scene with convincing action and believability.

For *101 Dalmatians,* scenes were shot of a dog running up stairs, stopping and turning, coming down the stairs, straining on a leash—all of which were definite aids in timing scenes for the picture and assisting animators to achieve natural-appearing action. But the scenes that brought the characters to life were the ones imagined by the animator, showing what the dog could have done, in ways the dog would have done it.

In addition to movements needed for scenes and continuity, many miscellaneous actions were filmed in trying to capture something of the individual animal's own personality. These natural movements proved to be the most helpful, since special meaning could be given them by adding dialogue, or music, or sound effects, thereby interjecting an extra quality into the behavior.

Probably the most important rule for any kind of animal photography is, "Don't be afraid to waste film!" To get the natural, the unexpected, the rare moments, there must be unlimited patience and a running camera. The director who is determined to get only what is called for in his script, and get it right, will miss the wonderful things that make an animal what he really is. The animator who leaves the whole tedious business to others will miss the firsthand knowledge that only can come from being with the animal while attempts are made to capture its unique attributes. The best actions are invariably unplanned.

When the casting was set for us to animate the geese in *Aristocats,* we borrowed a camera from the studio and visited a friend's ranch. He had two geese, some assorted chickens, and a decrepit, tattered white turkey who had an amazing desire to star in a screen test. The whir of film running through the camera caused him to strut about with his three or four remaining tail feathers askew, but it made the geese run away.

As the geese ran, we were amazed to see how closely they stayed together, with their necks almost intertwined. We had expected the roll of the body as they paddled about clumsily, but the way the two geese worked together was startling. At once a kind of character emerged for the two, which went beyond the dialogue we were contemplating for a pair of silly spinsters on a walking tour of France. The film we took seemed to have an almost constant overlay of the preposterous turkey, but behind him were always these two heads peering around, keeping their eyes on the camera and the highly suspect man behind it. We sketched from the film and from our memory, for once we had seen these girls in action, nothing could erase the reality of their intense skepticism. The nicely

ARTIST. Ken Anderson— Robin Hood.

How the Sheriff of Nottingham might look as a goat: in medieval finery appropriate to the period, and as a modern Southern high - way patrol officer.

designed drawings of geese that we had seen on the storyboards were suddenly two very real personalities bustling about with their own private dignity—haughty, appraising, critical, and funny. They were real geese, with all the movements of real geese, but they had revealed the personalities that could be understood and shared by all humans.

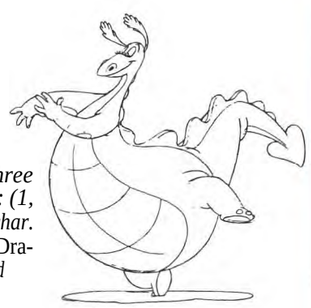
Finding entertainment in a personality does not mean making a clown out of that character. It means only that one is relating to qualities common to all individuals, and there is no loss of dignity inherent in that process. The personality traits can be heroic, altruistic, or noble; it is the use made of them in the story situation that determines whether they are comic, or cute, or stupid, or mean. There are many ways of being entertaining, and the challenge is to the storyman to create situations where these individual traits can be brought out in an entertaining way.

Many animals have their attributes already defined by the legends and stories of various cultures. A coyote is a cunning and wise hero to the American Indian, and a villainous predator to the sheepman. To most people, a rabbit is nervous and almost completely helpless; a wolf is all villain, whether he is slavering or deceitful; and the beaver is hard-working with no sense of humor. When casting a picture with "good guys" and "bad guys," these are important considerations. The "good guys" have to be small, ineffectual, cute, and associated with nonviolence. It doesn't matter if the real animal is that way or not. You are playing off images in the viewers' subconscious, and if people grew up thinking a certain way that is where I start. To have a mean and cruel kitten terrorizing a family of nervous, flighty bears is an uphill fight for everybody.

Still, there is considerable room for variations. In *Robin Hood,* some of us thought the Sheriff of Nottingham would be more interesting if he were a goat. As the story was structured, there was no need for him to be a crafty villain; he was only stupid, bossy. and unconcerned with the people he might be hurting. A goat with a thick skull could do this much and give the animators a new animal to draw that could open up fresh ideas.

The director of that film felt just as strongly that the Sheriff should be a wolf, because the audience believes the wolf to be a villain. The fact that recent research has shown him to be a good family man and a fine father will do little to change ideas that are centuries old. In addition, the goat has no established role in legend, and we would have the burden of proving that he was good or bad or indifferent. Developing that image could waste precious footage that might be better used to show entertainment in the specific kind of villain he was.

The most provocative discussions come when the story calls for a mythical creature, or one that has not appeared in tale or legend. A dragon is known to be ill-tempered and sullen, so that is not too much of a problem. But other pictures may include creatures with no connotations. When Woolie Reitherman was animating the dinosaurs in *Fantasia,* Walt told him to



Three dragons with three different personalities: (1, The refined and poetic char. acter in The Reluctant Dragon; (2) *The impulsive and undisciplined Madam Mim in* The Sword in the Stone, *(3) The spectacular transformation of the evil fair) Maleficient in* Sleeping Beauty.

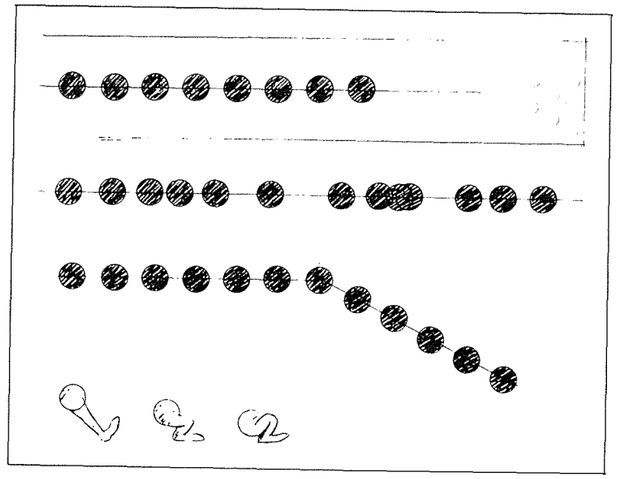
beware of any human personality traits, "Don't make them cute animal personalities. They've got small brains, y'know; make them real!" It was a disarming request since there was little research possible on what a real dinosaur might have been like, but Woolie was not bothered. He dipped into his imagination, combined that with a few raw animal things he had seen, and, working closely with Bill Roberts, who was directing that sequence, came up with scenes of dinosaurs that seemed to be just the way people always imagined these giants should be, if ever they had thought about it before! Fortified by Stravinsky's magnificent score, they created, together, a stirring film that never can be forgotten.

The Triceratops and live again through the magic of animated .

ANIMATOR: *Woolie Reitherman-"Rite of Spring,"* Fantasia.

Who knows how a dinosaur walked millions of years ago? The animator drew, erased, corrected, and drew again before getting this convincing walk on the Tyrannosaurus Rex.

A 16 pound bowling ball is rolling down the alley. It has a smooth, continuous, evenly spaced progress. It is not erratic; it does not speed up and slow down, then speed up again. It does not change direction abruptly (unless it meets something stronger). How much an object weighs is shown by how much effort is required to move it, to stop it, to change its direction. These are shown through Timing, Arcs, and Squash and Stretch.



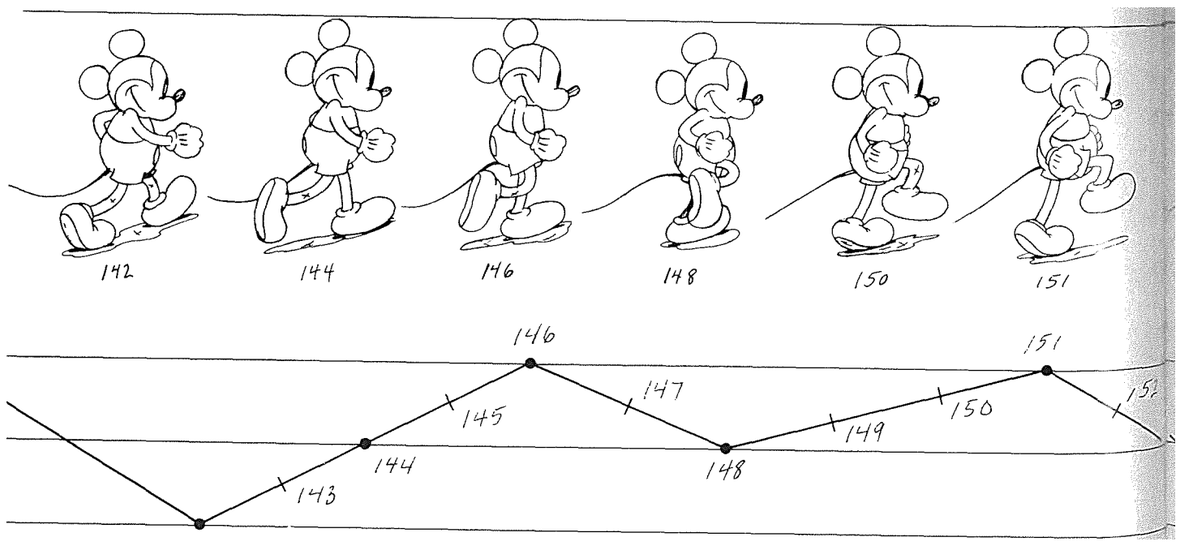
If the object is a character, a leg is put out to take the weight, squashing and absorbing the force of the move.

In 1928, Mickey had charm but no weight as he turned a corner without regard for support or gravity.

The Rhythm Walk

This spirited walk with the bounce in the middle was used by everyone in the early thirties. It was always done to a musical beat, giving a happy, energetic feeling to the action and a jaunty attitude for the character. Combined with some carefree whistling, it did much to establish Mickey's personality.

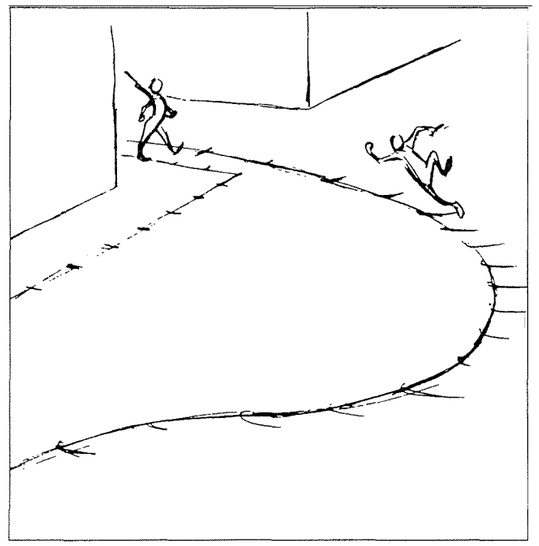
(146) Mickey starts a normal step, lifting his body high.
(148) In the middle of the step, he dips down.
(151) Then up again to a high position on head and body.
(154) Finally, the low, "squash" position as he places his foot to complete the step.



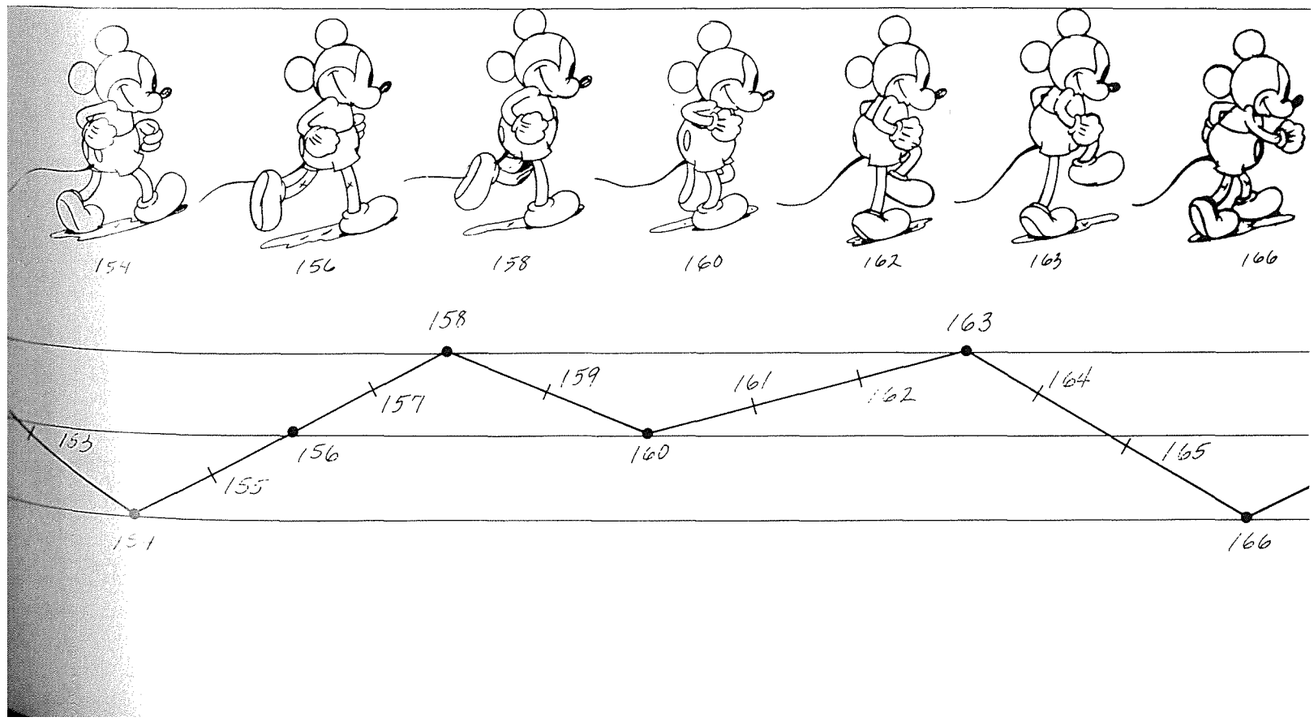
Walks THE IMPORTANCE OF WEIGHT

Walks always have become troublesome and complicated to animate. The action can become so involved with weight distribution and balance and secondary movements that every single drawing becomes a headache, yet they can do so much to reveal personality and attitude that they are one of the animator's key tools in communication. Many actors feel that the first step in getting hold of a character is to analyze how he will walk. Even the most casual study of people on a busy street will reveal dramatic differences in how they achieve simple locomotion: long strides, short steps, determined waddling, bouncing, mincing, swaggering, rippling: there is no end to the variety.

In the early cartoons before sound came along, there were few attempts to make walking anything more than a means of moving the character to a new on the screen. There was pacing back and forth, occasional dragging of feet in sorrow or despair, or purposeful striding as the hero fought back, but no animator tried to establish character by the way the figure walked. With the introduction of sound there came the "rhythm walk.¯ with its extra bounce in the fiddle that gave life and spirit to a mundane character in everyday activities. Once the character went into action, it was the same old business of moving the body where the animator wanted it to be, then adding legs and feet underneath moving up and down.

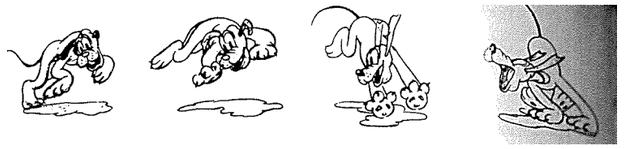


A marching soldier will make a sharp 90° turn at the corner. But if he is running fast, he will swing wide, slipping and skidding and leaning into the curve to keep his balance.



Walks THE IMPORTANCE OF WEIGHT

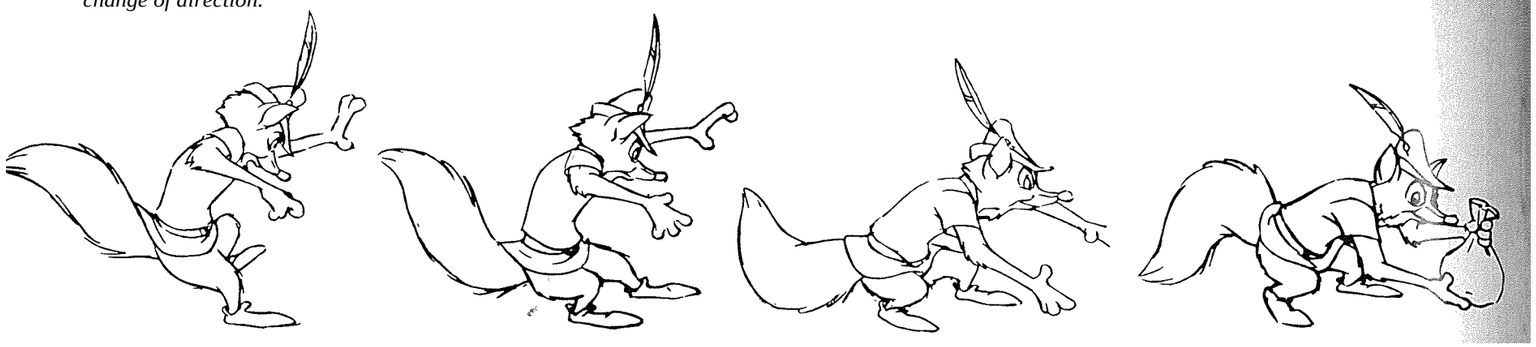
It was the realization that the cartoon figure could not be believable without convincing weight that really changed the animators' thinking. The principles of squash and stretch were beginning to be understood and provided the procedures and the tools for displaying the new discoveries. Basically the principle was that a moving body could not be shifted in direction without encountering resistance from something in its present path of movement, causing it to turn.



The scent of perfume floating through the air, from Moose Hunt.

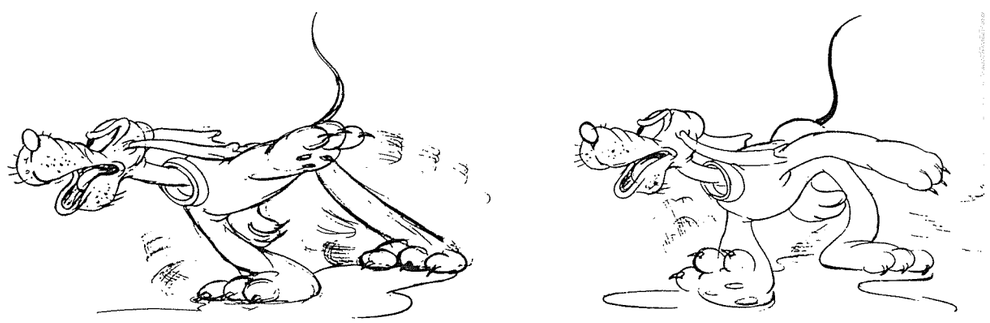
ANIMATOR: *Frank Thomas*—Robin Hood.

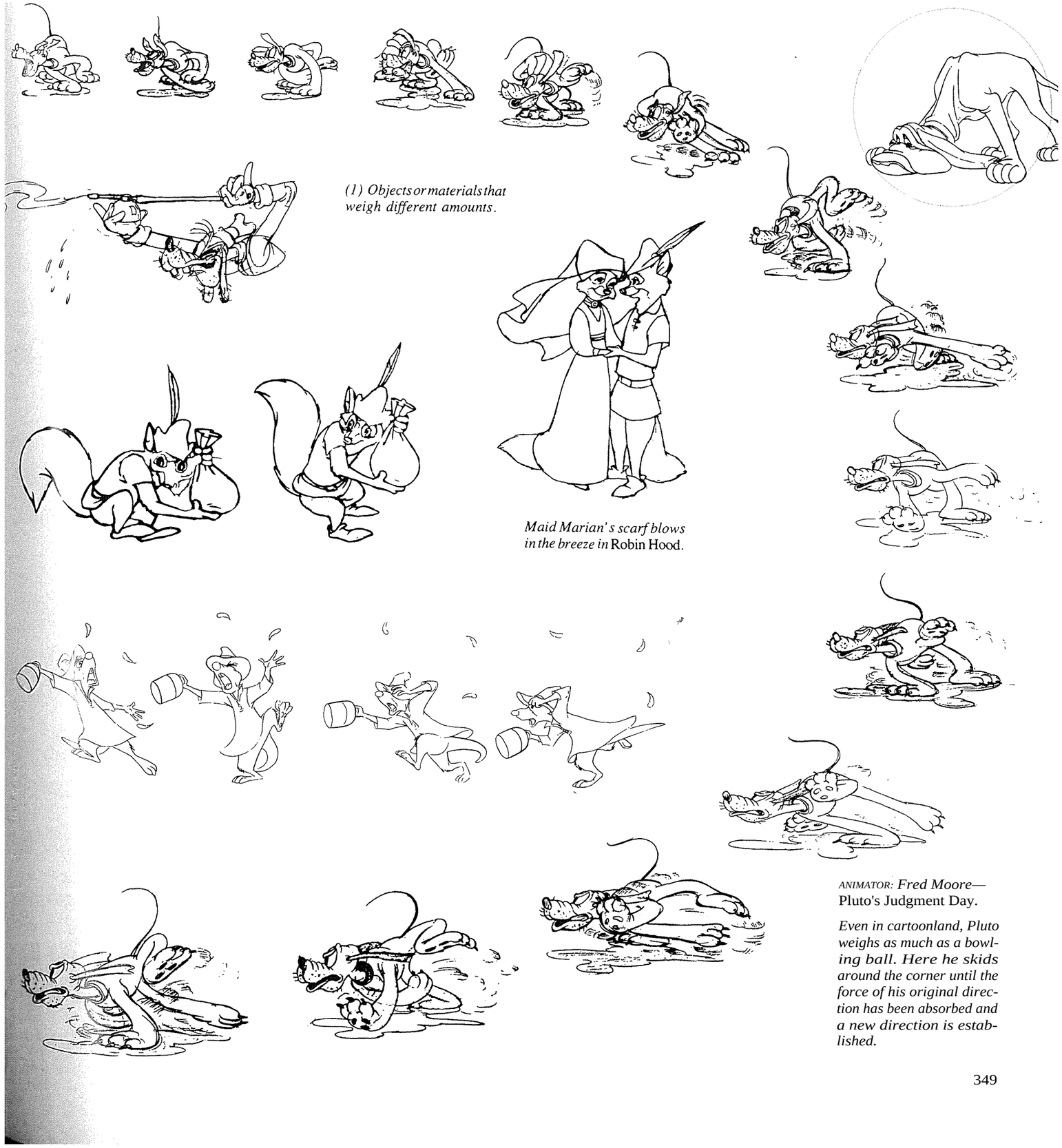
Robin Hood runs in to pick up the last sack of gold. He places his foot well in front of his body and slides into position, lifting the other leg and planting it to help support the weight of the gold as well as to start his change of direction.



ANIMATOR: *Frank Thomas*—The Rescuers.

Luke, the muskrat, is running with his jug when he meets a crocodile, makes a wild, scrambling take, reverses direction and zips out. Through this impossible action, the jug is timed realistically, with a full arc and convincing weight, which makes everything else seem believable too. If the jug had flipped about like a piece of cloth the whole scene would have



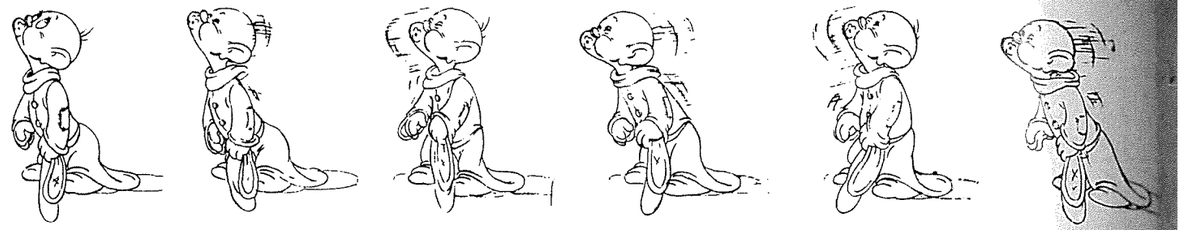


(1) Objects or materials that weigh different amounts.

Maid Marian's scarf blows in the breeze in Robin Hood.

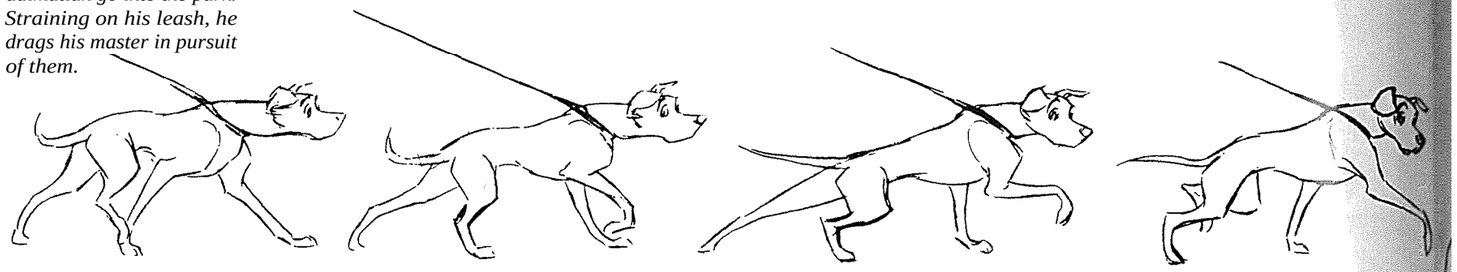
ANIMATOR: *Fred Moore—* Pluto's Judgment Day.

Even in cartoonland, Pluto weighs as much as a bowling ball. Here he skids around the corner until the force of his original direction has been absorbed and a new direction is established.

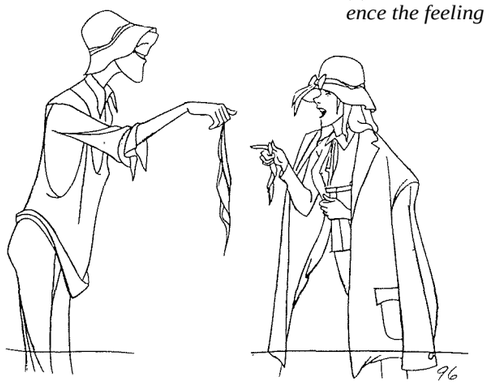


ANIMATOR: *011ie Johnston*-
101 Dalmatians.

Pongo has seen a beautiful girl with a young female dalmatian go into the park. Straining on his leash, he drags his master in pursuit of them.



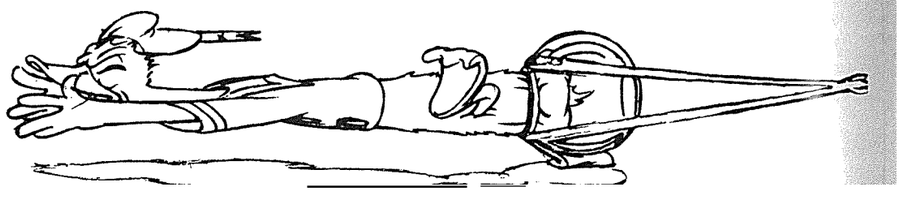
(2) The elements can influence the feeling of weight.



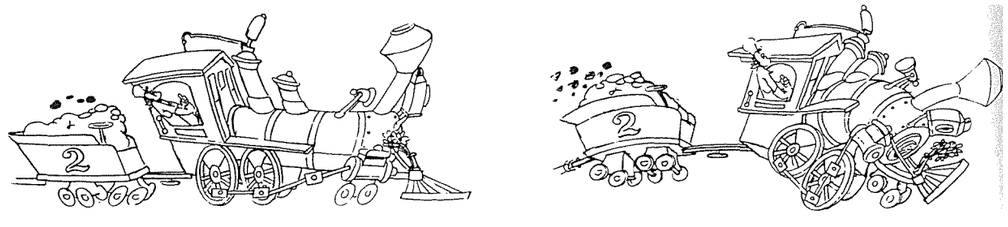
Roger and Anita, from 101 Dalmatians, *have fallen into the pond. The water has made all of their clothes heavy and limp and sagging.*

ANIMATOR: *Fred Spencer—Moving* Day.

Donald is trying to get a fish bowl off his rear by tying suspenders around it and attaching the other end to a piece of furniture. Here he is running and slipping as he reaches, the full tension of the suspenders.

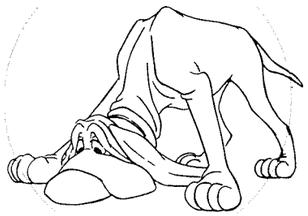


The weight of the engine is shown as it skids to a stop, and the added touch of the coal flying momentarily into the air helps the effect.



ANIMATOR: *Fred Moore*—
Snow White.

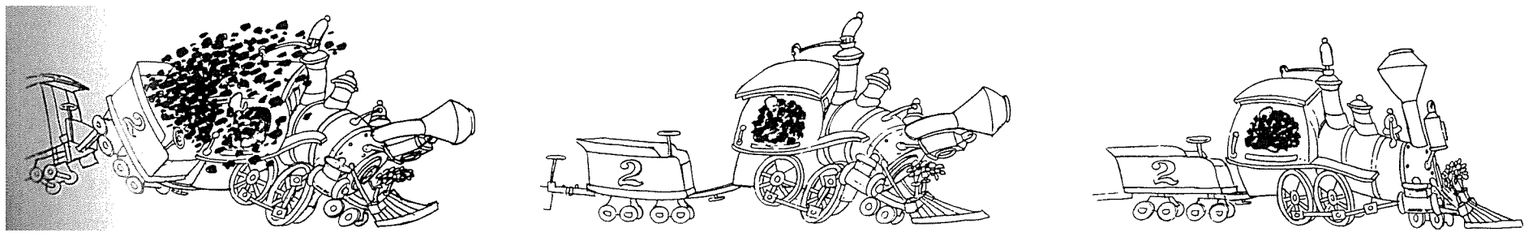
Dopey zips into the scene hoping for a second kiss from Snow White. In order to keep him in balance in this abrupt stop, the animator used a cartoon slide with the feet well out in front, followed by a rigid vibration on the recovery. This caricature of a mechanical stop added entertainment without destroying the weight or believability of the character.

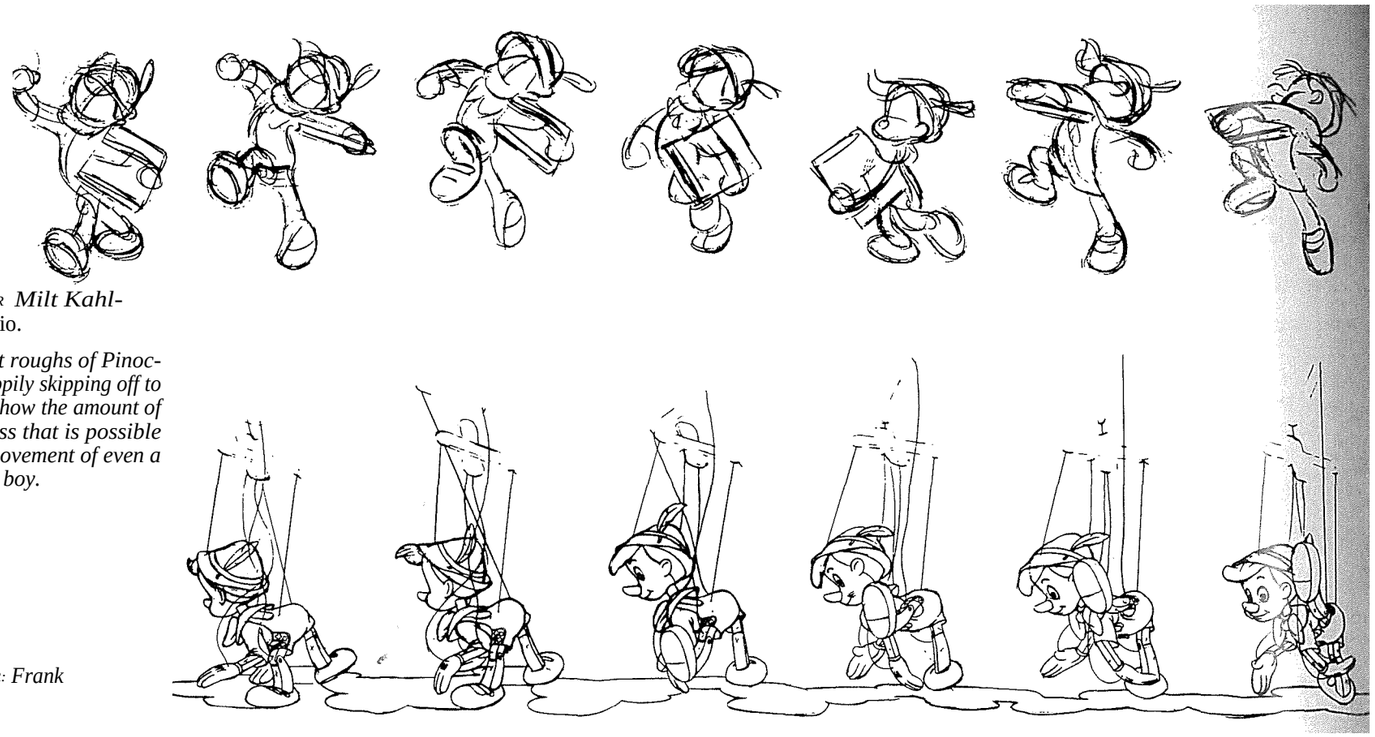


(3) Weight is revealed by how hard a character has to push or pull against an object.

ANIMATOR: *Frank Thomas*—
The Sword in the Stone.

The great wizard Merlin has changed himself into a squirrel and met a fat and very coy female .She is much stronger than he and finds his puny efforts to shove her away highly amusing.





ANIMATOR *Milt Kahl*-
Pinocchio.

The first roughs of Pinocchio happily skipping off to school show the amount of looseness that is possible in the movement of even a wooden boy.

ANIMATOR: *Frank*

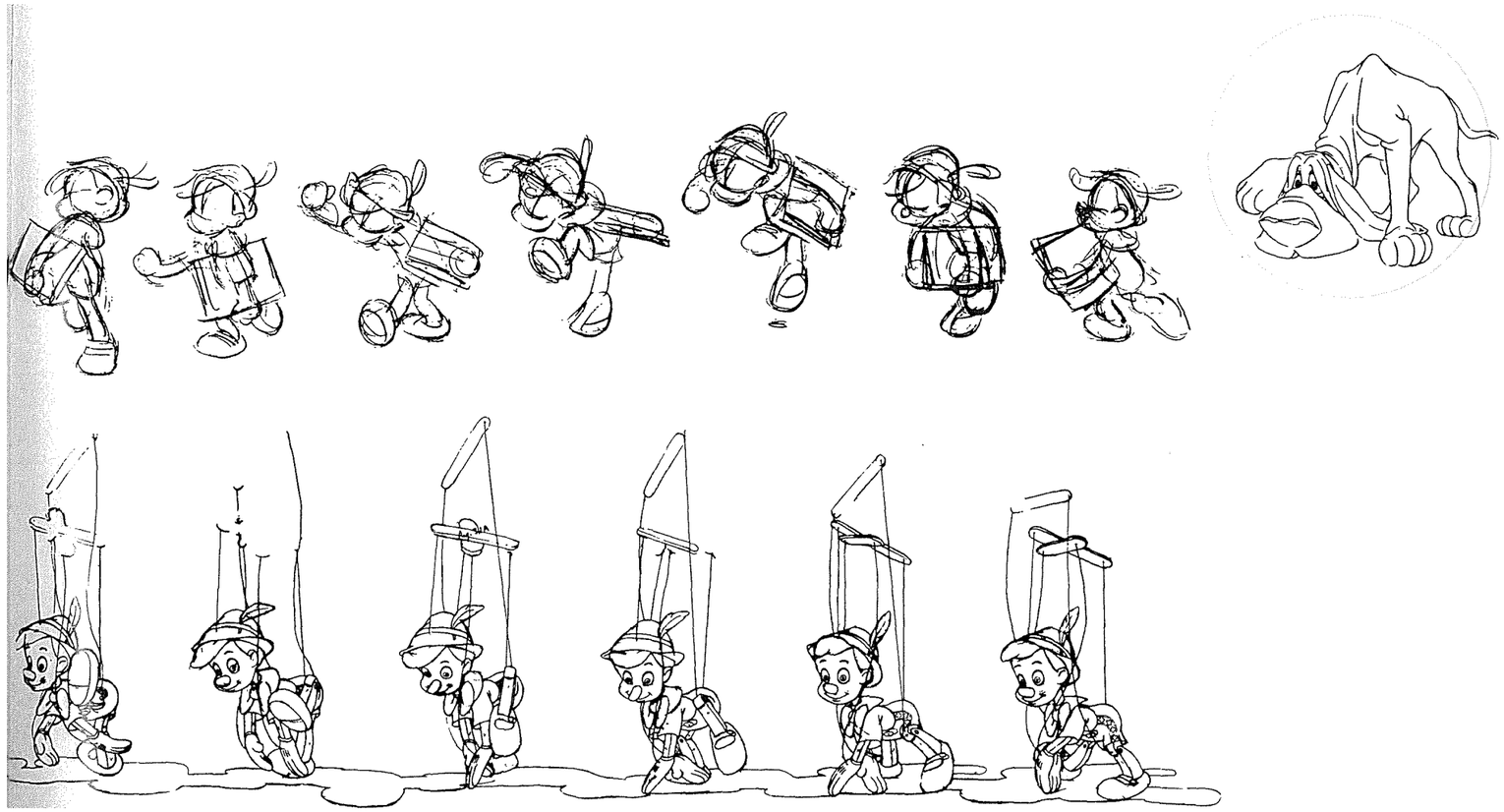
Walks FOUR-FOOTED FRIENDS

By the time we had finished our work on *Pinocchio* in 1939, the animators had done skips and runs, casual strolls, walks with enthusiasm, with tired feet, with apprehension, and with heavy-footed rage. In one scene, Jiminy Cricket even dressed himself while running full speed; and in another, Pinocchio, as a puppet, was made to simulate a walk with strings.

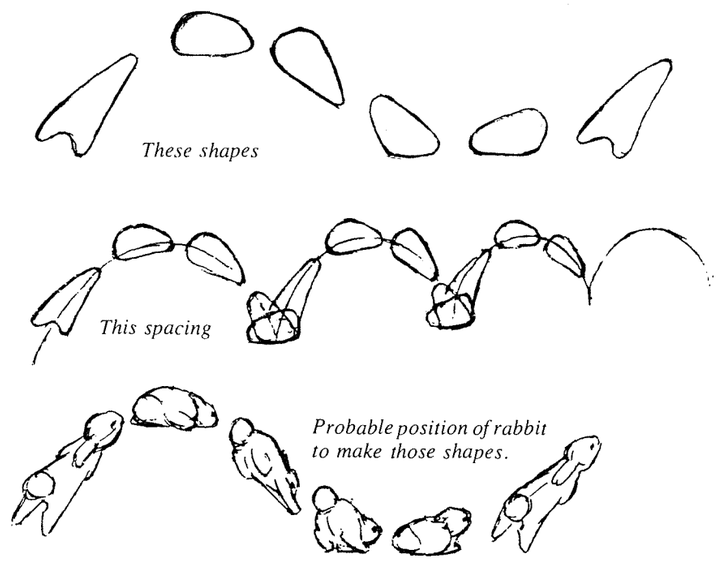
Then Walt Disney decided to make *Bambi.* This was to be a picture of beauty and mood, of philosophy and poetry, contrasting the intimacy of a dewdrop on a blade of grass with the excitement of young bucks leaping about on a meadow. *Bambi* had less story, by far, than the other features, being more like the pictorial Silly Symphonies, but it had strong character relationships, neither cartoon relationships nor caricatured, but real, believable relationships. Was this asking too much of personality animation?

Walt was not sure we were capable of animating this film quite yet, so while the rest of the staff moved on to *Fantasia,* two animators were assigned to puzzle over the movements and drawing problems of deer and rabbits, and to search for a way of incorporating our tenets of communication into these foreign shapes. We knew we could make them real—that is, look like real deer—but we also knew that without establishing personality we could never make that type of deer carry a whole feature.

We studied film of deer, looked at pictures, talked to the sketch men who had been drawing deer for most of a year (while the story had been shaped and developed), and watched deer at the zoo. The two fawns kept at the studio had long since grown up and departed, so we got no help from them, but we did have film taken while they were young and frisky. However, nowhere could we see the leg squash as it took the weight of the body, and no cheeks fattened as the mouth closed. No eyes changed shape, no jaws dropped in a big yawn, no bodies bulged or stretched; they were annoyingly lithe and supple and strong and muscular. What were we going to draw, animate, move?

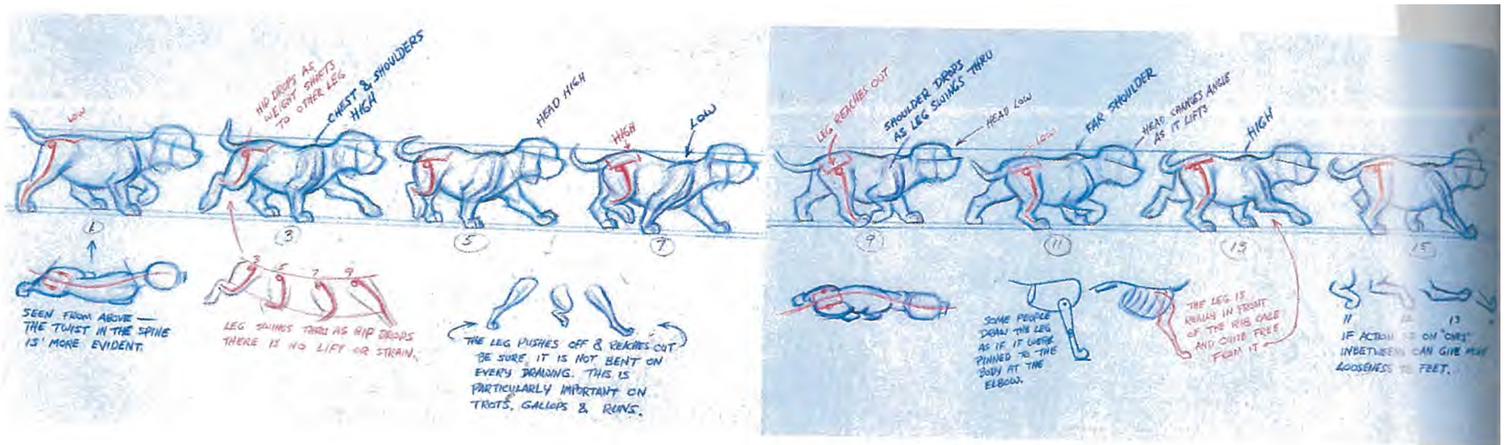


While studying live action film of rabbits, we noticed one white bunny hopping away in a very spirited manner. The action was faster than we would have thought, but it read well and had unusual life. A frame by frame check revealed that all detail on the rabbit's body disappeared with the first frame of action—all the camera recorded was a white shape that changed radically on each frame of the film. Each hop took only five frames, and while the direction often changed erratically, the positions in the action remained the same.



It was in the tracing of the film that we found our answer. We did not have photostats on this footage, and the images were small and difficult to see, but once we discovered the secret of the animal's construction all the pieces fell into place. There was actually more squash and stretch than we could use, but it was not occurring where we had been looking. Instead of being out in the open, away from the bode. the activity was at both ends of the legs, in the shoulders and haunches, and, again, in the fingers and toes. Here the action was as broad as any cartoon draw with great flexibility and spring in the tips, and massive swelling and thrusting up in the body.

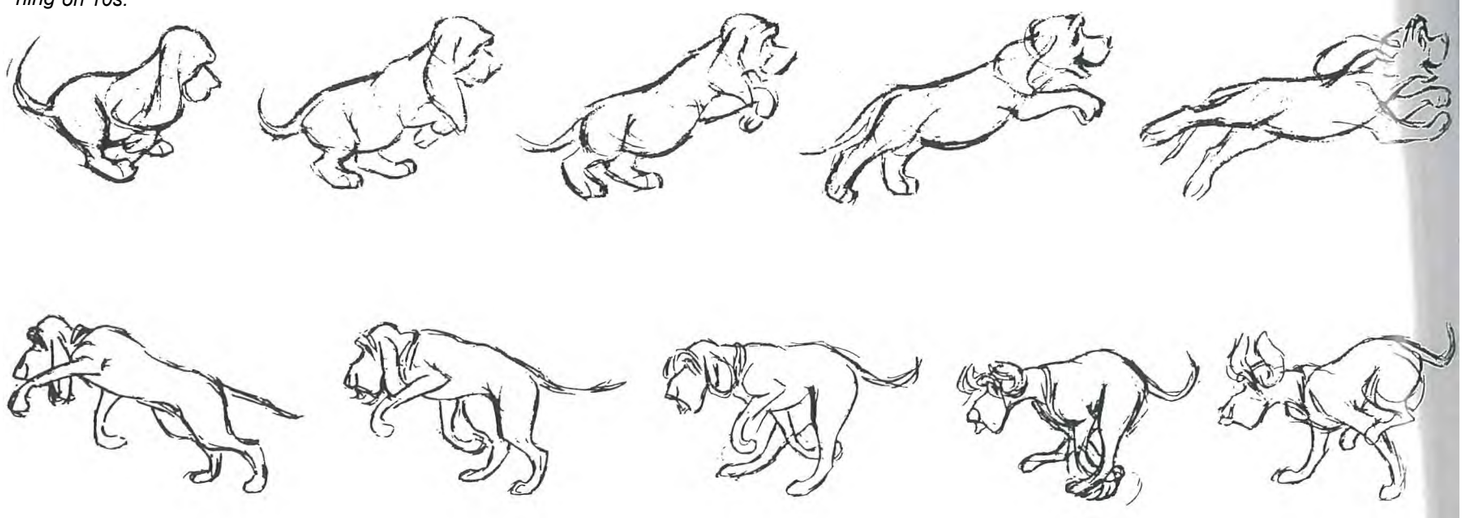
It took some time to understand the deer's anatomy.



Basic animal walk on 10s, shown on a puppy because it is easier to see what is happening in his loose and floppy action. The principles are the same whatever the animal. Animals seldom walk very far in the same gait. They speed up, slow down, vary the leg pattern, mainly concentrating on where they are going. Why they are going will also affect gait and stance. Their line of sight is usually the key to

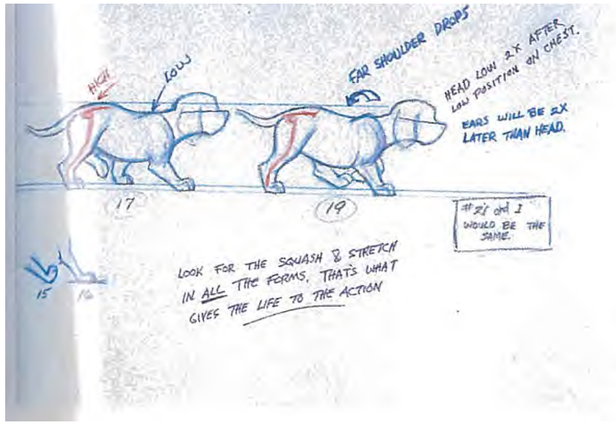
ANIMATOR: *Frank Thomas*—
The Fox and the Hound.

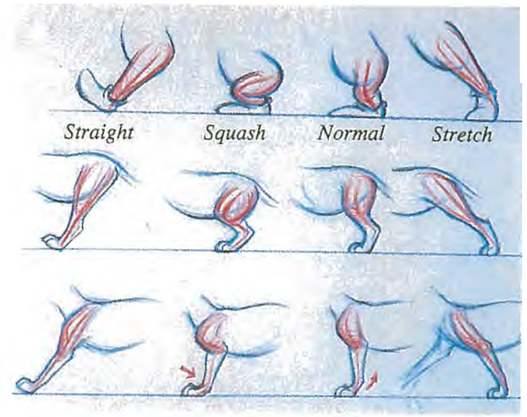
Cycle action of a puppy running on 10s.



to realize that the shoulders are nearly in front of the rib cage and that the rear end is practically all leg and haunch, but once this was understood our drawings of the animals began to have the fluid, loose feeling, combined with muscular power, that was so typical of deer. One day we were studying a strip of film showing an adult deer bounding across a small ravine. As the front legs took up the weight of the body and guided it into a turn, the elbow actually pushed up *above* the line of the back. After that, we believed anything was possible.

Our other big surprise came in the amount of movement in the deer's spine and pelvis. The twists and tilts and turns and flexibility were more than we knew how



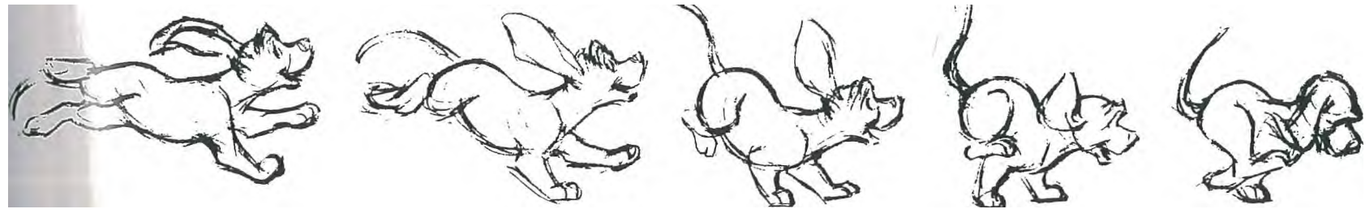


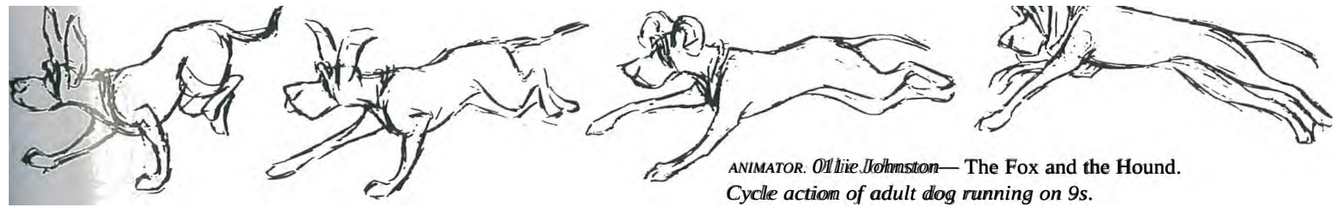
Traditional squash and stretch on a walk in the thirties.

On a dog's rear leg, the squash is up in the haunch

"fingers" in the shoulders and " of the front leg.

their action.
Once you understand the relationships, the drawing, and the character of the animal, you can then add the personality traits to the walk: swagger, prance, caution, worry, confidence. The head may be held higher, the feet may drag—changes in attitude and timing will change the character of the walk.
Study the animal—not the cartoon formula.



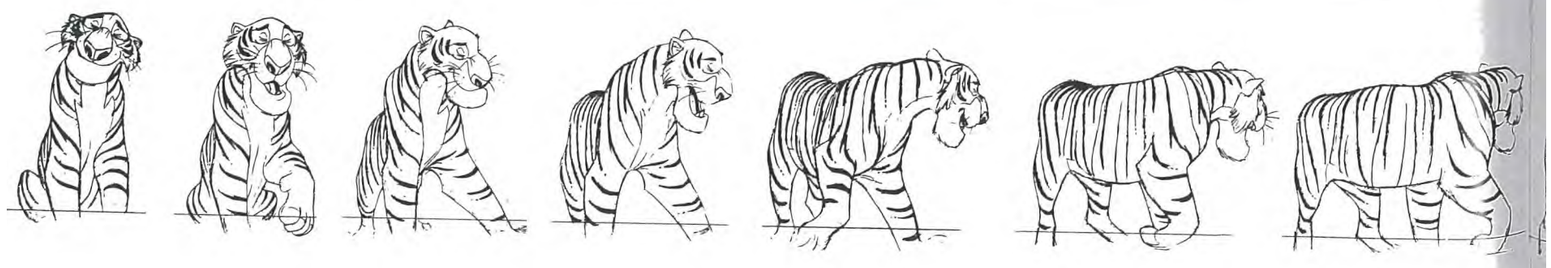


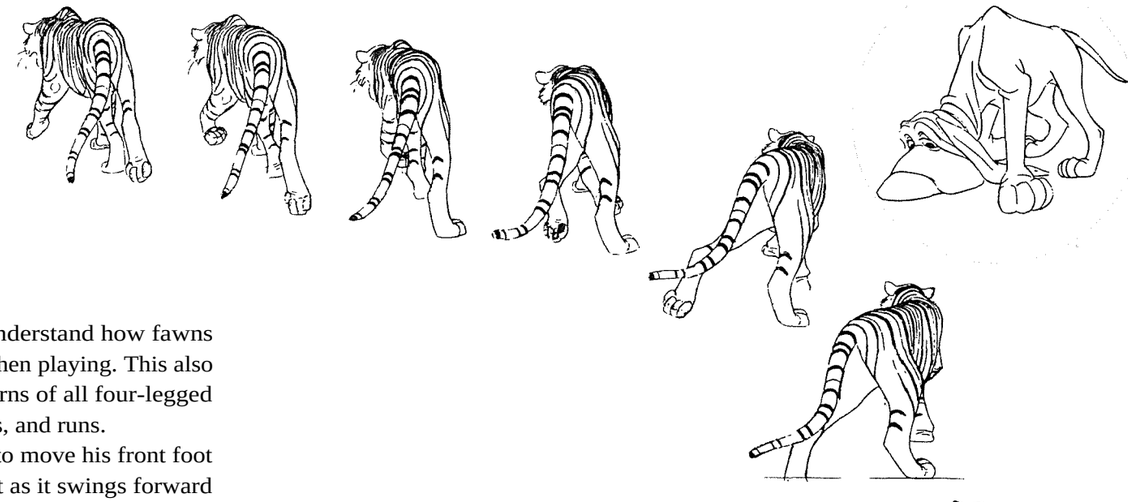
ANIMATOR. Ollie Johnston— The Fox and the Hound.
Cycle action of adult dog running on 9s.

ANIMATOR: *Louie Schmitt-*
Bambi.

A *mouse scampers for cover when rain starts to fall. Instead of using a gallop or a stock cartoon run, the animator caught the nervous action of a real mouse.*

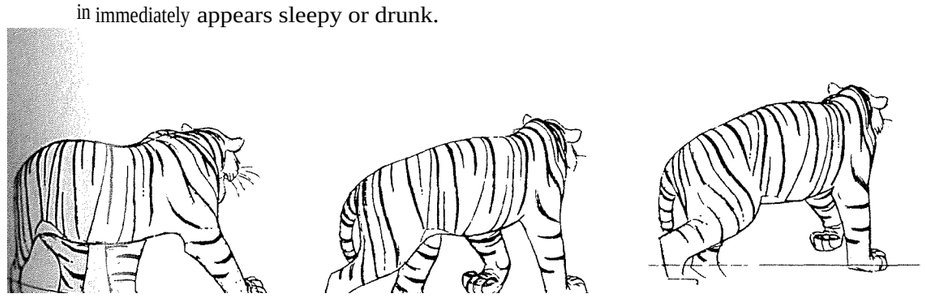
Cinderella





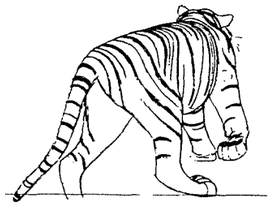
to draw, but they helped us understand how fawns achieved the frolicking look when playing. This also helped us learn the basic patterns of all four-legged animals in walks, trots, gallops, and runs.

A giraffe, for example, has to move his front foot out of the way of the back foot as it swings forward because his long legs cover so much distance in a stride. This gives the illusion of both feet moving on the same side at once, and in a sense they do for a few frames. But, essentially, all animals move their legs in a cross pattern of right fore followed by left rear. We got down on our hands and knees and tried it ourselves, and immediately discovered that it was the only natural way to progress and stay in balance. To move legs in any other pattern gives an awkward movement and a poor base for any kind of stability. While it is possible to train horses and some circus nimals to special gaits, these are basically unnatural arms of locomotion. By studying the real animal instead of working over a cartoon formula, we had through to a new level of understanding that ade other stories about "real" animals possible for t studio. More than that, once the physical relation- and character of any animal are understood, the way is open to portray its attitudes: belligerent, cocky, , nervous, worried, or timid. And if there is a ne that calls for a lack of coordination, the has only to break the animal's natural rhythm of vement, to mix up the leg pattern. His character in immediately appears sleepy or drunk.



ANIMATOR: *Milt Kahl*—
The Jungle Book

The stripes on the tiger, which ordinarily would be time-consumingdecoration, were used here to describe the form of Shere Khan. Because of years spent studying animal movement, the animator was able to do this scene without help from any live action film.

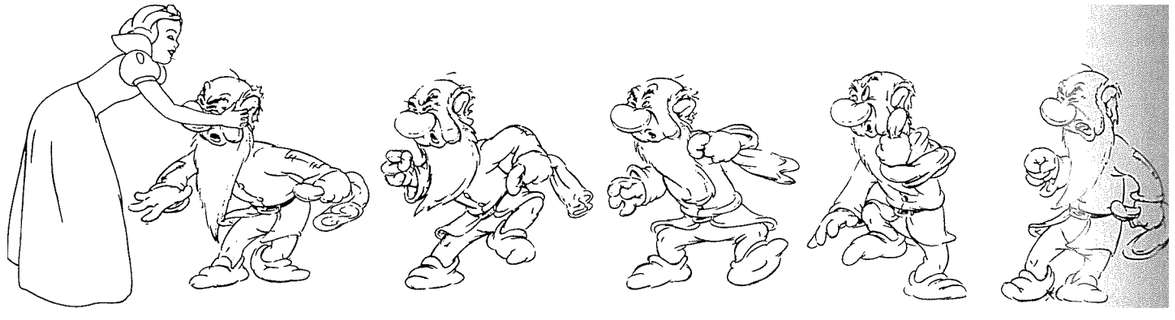


Walks ACTING AND ATTITUDES

Once the walks of the cartoon characters began to look real, the animators could experiment with characterization and attitudes. While pure inventiveness and imagination were still creating funny scrambles and semi-dog actions for Pluto, acting and emotions ere capturing audiences in a new way. As the spectators watched Grumpy pull out of Snow White's embrace and stomp away defiantly, they were more concerned with his feelings than they were with the mechanics of his walk. Figaro, the cat in *Pinocchio,* was enor-

ANIMATOR: *Bill Tytla*
Snow White.

Snow White tries to give Grumpy a parting kiss as he leaves for work.

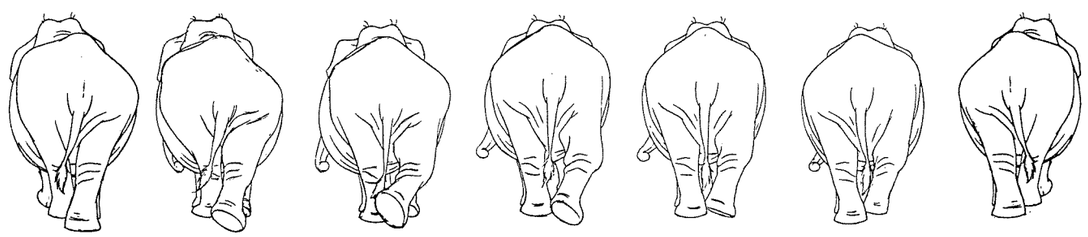


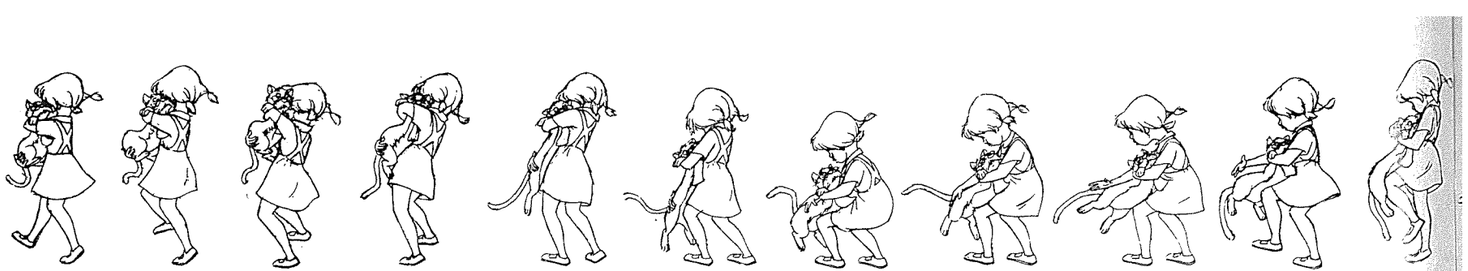
ANIMATOR: *Eric Larson*
Pinocchio.

Figaro crosses the soft, down comforter on his way to bed.

ANIMATOR: *Eric*
Jungle Book.

This walk was animated as a cycle; the drawings were later diminished in size step-by-step so the elephant would match the perspective of the layout as he walked away.

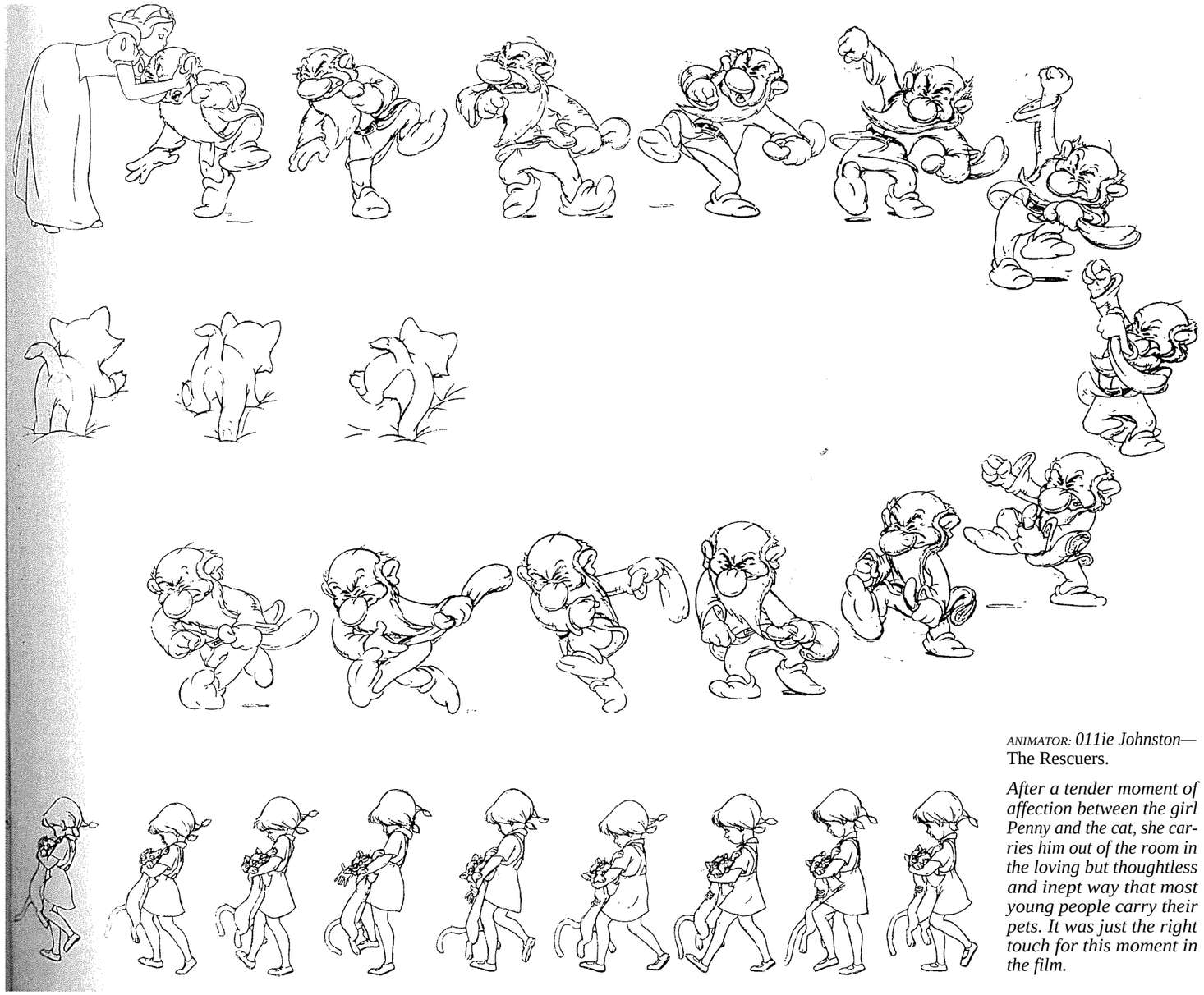




mously appealing as he walked across the bed, sinking deep into the soft covers, but it was his annoyance with the constant interruptions from Geppetto that made the scene come alive.

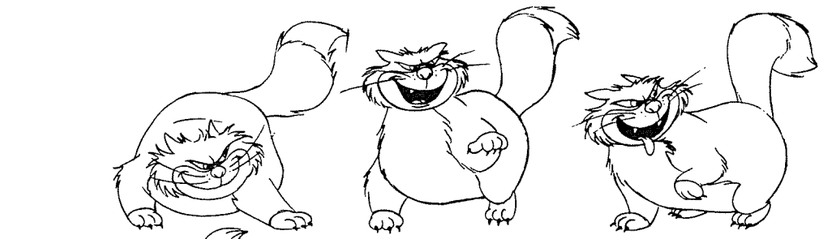
As a matter of fact, the animators found it easier to do a walking scene if the character had a strong attitude than if he was just moving from one place to another. There was nothing to caricature when nothing was happening: there should be some reason *why* the character is walking, and that is what you animate.

The acting possibilities in an action enable the animator to go beyond a mechanical performance.



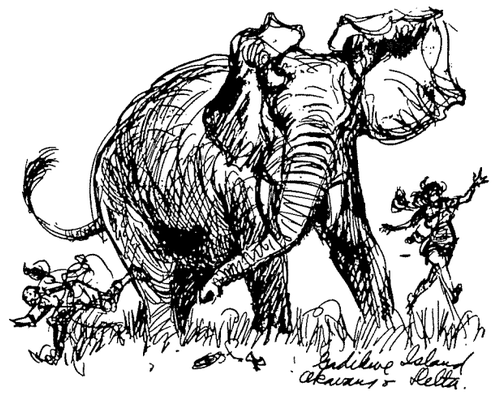
ANIMATOR: *011ie Johnston*—
The Rescuers.

After a tender moment of affection between the girl Penny and the cat, she carries him out of the room in the loving but thoughtless and inept way that most young people carry their pets. It was just the right touch for this moment in the film.

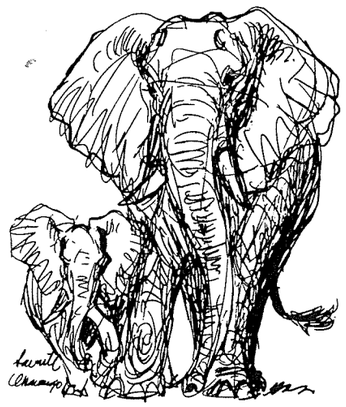


ANIMATOR: **Ward Kimball**—Cinderella.

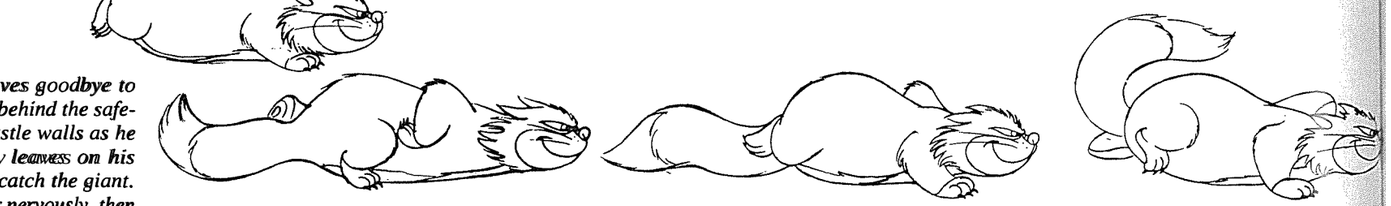
***Imaginative** adaptation of a fast sneak by an animator who had observed cats and could caricature their attitudes.*

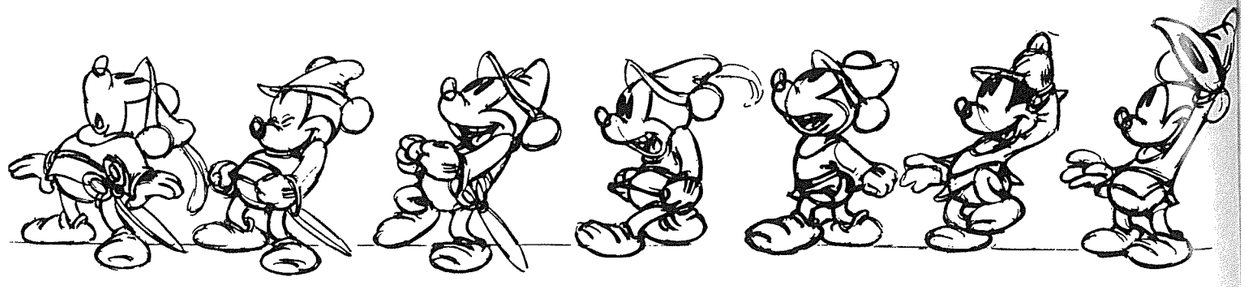


Ken Anderson sketched elephants on a trip to Africa, even noting some of the actions of other members of his tour.

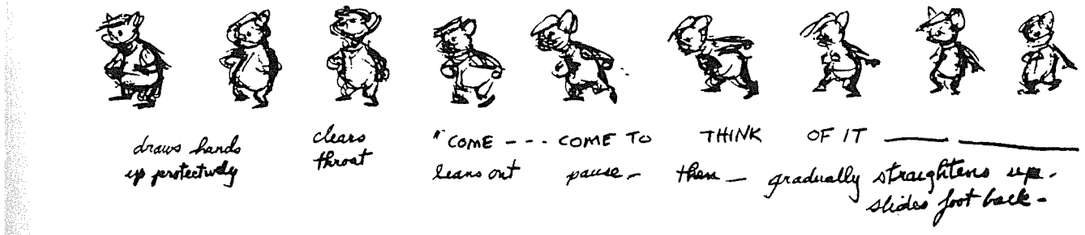


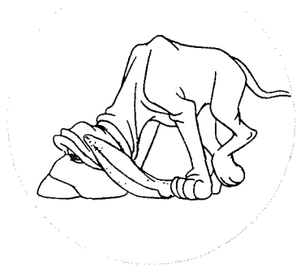
Ken's knowledge gave authenticity to his idea of a pompous windbag for Col. Hathi in The Jungle Book. *The suggestion of personality and attitude led to scenes with great acting opportunities.*





Mickey waves goodbye to the people behind the safety of the castle walls as he reluctantly leaves on his mission to catch the giant. He chuckles nervously, then says, "Well, so long!" and, "I'll beeseein' you—I hope." Even without the in-between drawings that carry the mouth shapes of the dialogue, the feeling and the acting are unmistakable, just in the body attitudes. This was the era of the most appealing and best proportioned Mickeys.

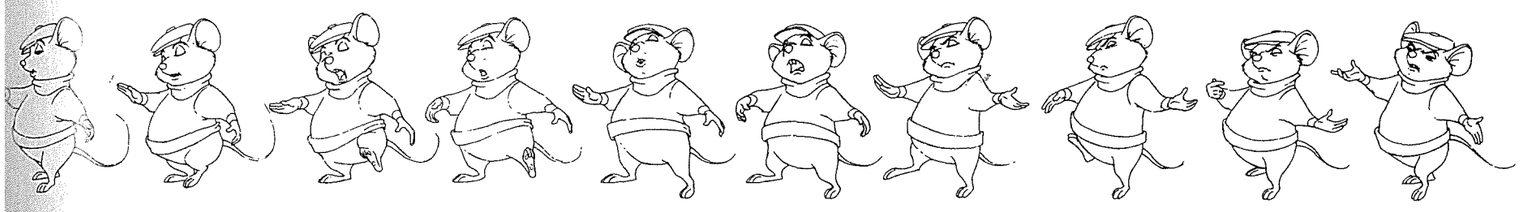




ANIMATOR: Frank Thomas—The Rescuers.

Bernard tries to be nonchalant as he retreats from the chasm of the blowhole. The action was worked out in thumbnails to match the dialogue and the gestures to the pattern of his steps.

The final drawings show how careful planning had solved the animator's acting problems.



Other Walks that Show Character Personality

ANIMATOR: *Milt Kahl—*
Robin Hood.

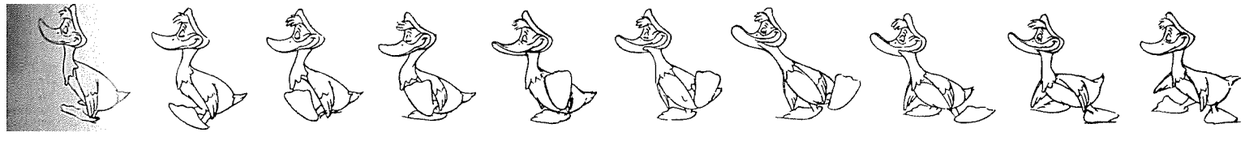
Every drawing in this walk is rich with the personality of the callous Sheriff of Nottingham. A model sheet was made from the scene so that the same walk could be used throughout the picture.

ANIMATOR: *Milt Kahl—*
"Pecos Bill,"
Melody Time.

This sassy walk with the swinging hips has been copied widely throughout the animation industry. It was created originally for Sluefoot Sue, the girl who captured Pecos Bill's heart.

Lounsbery / Thomas
of the Hours,"
Fantasia.

There was no chance for a 'dramatic entrance for Ben the leader of the all . A bright, little cocky walk was used to make him stand out from the others.



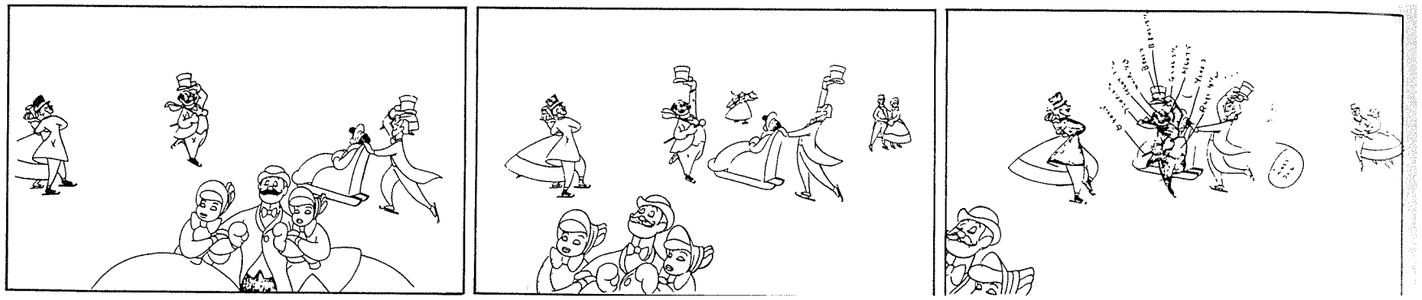
Peter Pan

ANIMATOR: Eric *Larson—*
Peter and the Wolf.

Many duck waddles have been animated, and it is a challenge to find a pattern of movement that is just right for a new character, matching both the personality and the design.

Group Movement

When more than one animal is walking or running in a scene, there is always a temptation to animate the same action for each figure. Once all the problems have been solved and legs are in the right place, the idea of doing a second set of drawings only slightly different seems like needless work. Still there is a special opportunity in the handling of groups that can make scenes of great impact. There is a feeling of elasticity as one figure pulls away from another, then closes in again, or passes someone up, or falls behind, that gives the charm and feeling of life to the gro



ANIMATOR: *Eric Larson—"Once Upon a Wintertime,"* Melody Time.

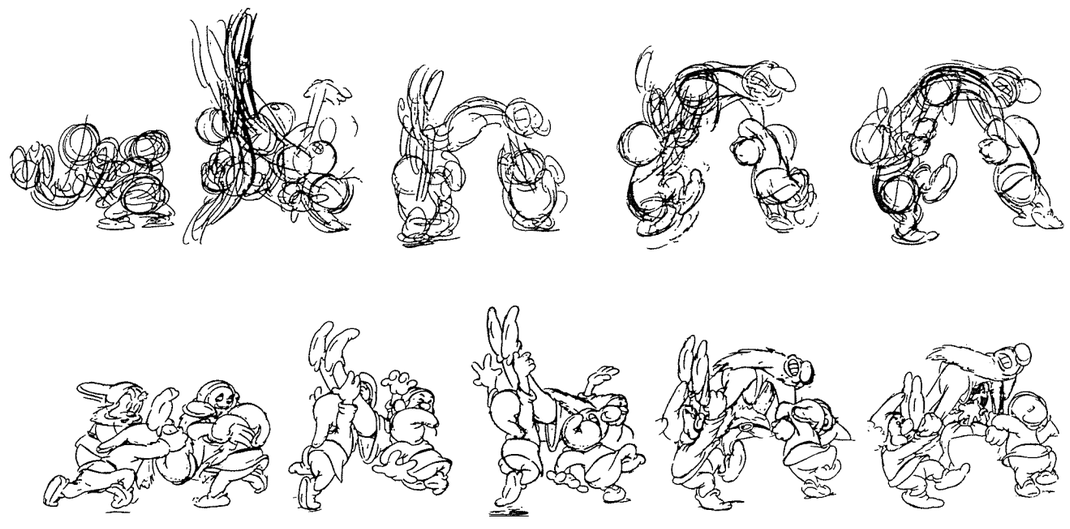
Eric Larson said, "The pattern of movement you get out of any group has always fascinated me." First, he drew the central figures, then started filling in with others, always searching for that flow and freedom that kept the group alive. The scene had a remarkable feel of the patterns of movement created by a group of skaters. Eric and Retta Scott followed the same procedure when animating the dogs chasing Faline in Bambi. *The lead dog was done first, then the others were filled in behind him, wherever they worked best.*

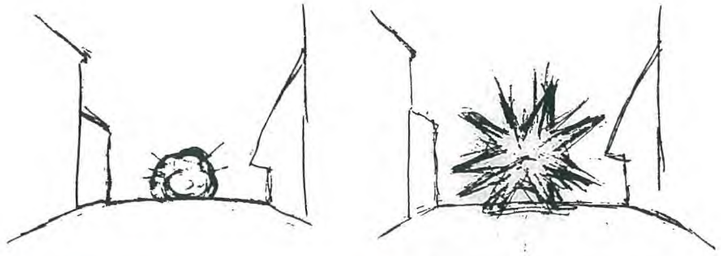
ANIMATOR: *Fred Moore—* Snow White.

Any group of characters should have careful thought given to their design and attitudes, whether they move together or individually. Fred Moore always made them interesting and pleasing.

ANIMATOR: *Bill Tytla-* Snow White.

Four of the dwarfs struggle as they take a furious Grumpy over to the tub to be washed and scrubbed. Bill Tytla' s roughs show his thinking on this assignment and his feeling of how the thrusts and actions of one dwarf affected all the others. He could not animate any one of them singly, but had to consider the whole action of the group as the entertainment in the scene.





ANIMATOR: *Frank Thomas*—Robin Hood.

This scene of kids going out to shoot the new bow and arrow that one of them had received was a happy occasion. Since the sequence immediately preceding had ended on a very quiet and somber note, it seemed best to start this section with a burst of laughter and music and running kids coming over a hill. The animator drew a set-up with a street coming straight into the camera. Then he animated a simple explosion, to match the spirit he wanted. Later he went back and determined which part would be somebody's arm and which a leg, or a head, a stick, or a ribbon. After the initial effect was over, the characters turned and ran down the street on a side pan, giving the audience a chance to see each of them individually.

ANIMATOR: *Frank Thomas*—Snow White.

In Snow White *the dwarfs sneak into the bedroom with raised pickaxes, ready to kill the monster in their beds. It was important here that all the characters move together, look together, stop together, recoil together; so they were animated as one large mass doing the action. Afterward, this shape was broken down into the individual dwarfs, keeping all parts within the approved mass-shape. Even though Doc was in the lead, he was no more important than any of the others. The audience was intrigued by seven men reacting as one, with each still acting in his own way within the pattern.*