Entertainment I

Animation Theory & Practice: Notes from a Lecture by Ham Luske **08.19.1936**

TRAINING COURSE LECTURE

Meeting held: WEDNESDAY AUGUST 19, 1936.
Speaker: HAM LUSKE

Topic: ANIMATION THEORY AND PRACTICE
DISCUSSION OF ANIMATION TEST ASSIGNMENT

DRAKE: I want to introduce Ham Luske who will talk on action, directness, presentation. He will give you an animator's slant on picking up work, discussing the points that must be taken into consideration at that time, as well as the procedure in handling a sequence test or animation of any kind. Some of you men in the main building will not be required to do the test to which Ham will refer specifically; but we thought you would still like to hear his views on direct action which may be applied in the more advanced tests to be assigned to you in the future..,

George has told you what I sin supposed to talk about. First I think it would be best to tell you why we apply direct action, exaggeration, etc., in our pictures.

If you were working on a newspaper cartoon or magazine, you would have to put your idea over on that page so that anyone looking at it would be able to know what you were talking about in your picture. In our cartoons we must do the same thing, but we haven't as much time to do it in ... the film goes by - your scene is past ... and if you haven't put over the idea you were supposed to express, the opportunity to do so is gone... you have committed an almost unpardonable sin — you have confused your audience and let an idea go by. We have only the fraction of' a minute in which the scene we are working on passes on the screen, to carry along the idea and to let the audience know in the clearest, funniest way just what is essential to put across at that point. The thing we are trying to say should not be out of line with the story; and since we are making comedies, it should be done with punch and with all the personality the character on the screen would put into it himself ... his attitude, distinguishing characteristics, action, etc., all contribute to putting over what you have to say, be it ever so simple.

George has asked me to tell you how an animator picks up a scene; how it starts, is carried thru to the point where the animator picks it up.

First the story is worked out by the Story Department, and is finally divided into sequences and scenes. Some are individual cutting scenes; some are gag scenes. The director picks that up. He has a crew working under him - layout men who express the scene business in backgrounds and positions, so that the idea contained can be put over to the audience.

The director is a trained man in putting over ideas. He will never do anything knowingly that fails to put across the idea. As a rule the director has been an animator and has learned the art of putting things over thru actual experience. The combination of this ability of the director's and the animator's ability which is put to the test when he works on the scene, generally reveals any flaws which either one may have overlooked working alone.

The layout man has been trained to carry out directions; he will place the objects used. in a scene to follow the continuity and to put over the action. After the director tells the layout man what is required, the layout man prepares an action sketch for the animator to enlarge upon. At this point it is important to remember that the layout man is not a trained animator. His sketch will probably show size and quality of the picture, but it will not have the spirit the animator expects to put in.

(I have found all the way thru this plant that we are too prone to use the sketch the layout man has made as part of the scene, which does not help the scene in any way.)

The animator then picks up the scene from the director. He will act it out, work out the continuity that precedes and follows his scene, and determine what part his scene plays in the whole picture. A scene will have a definite length of time in which to put over its message. This time is not arbitrarily arrived at; the scene has been acted out either physically or mentally, to the tempo that the character involved might be doing the action. The Tortoise, for example, would do something in a slow way; the hare in a quick way; the length of the scene would be determined by the speed of either one of those characters (and the action to be put over.)

When the scene is given to the animator, the director tells him just how he (the director) visualizes it; the animator is supposed to put it over. Let us sey the scene is 5 seconds long— approximately 120 exposures, as indicated on the exposure sheet, 24 drawings a second. You are working with individual drawings now; if you make ten drawings and think it would be fine to put in an effective or cute bit in the next ten drawings (something that was not planned originally) - you will get extra action that does not count and probably confuses the main action.

I heard a remark recently that all the pictures seem to go by so fast that one can't pick up anything. The director did not do that ... he gave the work to animators who put in extra stuff instead of putting over the essentials in a simple way; consequently the picture missed in those spots and failed to put over the necessary feeling.

If our hypothetical scene is 5 seconds long - 120 drawings on the exposure sheet - you have sufficient time only to go thru the action, without adding any confusing details. Let us say the scene calls for a man to come up and look into a big urn. You take your layout or backgrounds... You must show in that picture that the urn is higher than the man is - high enough to make him get on tiptoes to reach it; that he must look down into it ... That is all you must express. You will have to make a drawing to look as much like a man doing that business as possible.

Take your layout mans drawing as the first drawing if it is in the best possible position you can conceive, in line with the continuity of the story; strengthen that drawing, make it as good as you can, and then draw it again to see how you can strengthen that; show the man is looking directly into the urn; see that his whole body is expressing it; that he is tipped over; eyes looking down into the urn; leaning on his hands which are pressing on top of the urn... Then all you must do is progress him there .. leaning up - looking in - and you have done your job.

Our whole concept of comedy, or half of it at any rate, is based on action and reaction, cause and result. We must make everything appear possible, whether or not it is possible. If something is done at the end of a scene that results in something happening of a different character, there must be a tie between the two. And that is called. “working on a line”. (It is difficult to divide this talk into sequences because all things are tied together so closely)

Returning to our example of a scene in which a man is looking down into a vase - he is up on his toes and his head is turned down peering into the vase ... his whole attitude is being in line with the action of looking into the urn. If he does it in a half-hearted manner, or is at a distance from the vase, the action will lack the punch that leaning him over the vase would give.

The same thing happens if we have a running business ... Tortoise and the Hare, for example, the Hare playing tennis from one scene to another, hitting back and forth. (demonstrated the mechanics of this scene on board) In one scene the hare served and hit the ball; the next scene (not a pan) showed the ball come bouncing in over the net, the hare came in and hit the ball; the next scene was the reverse of the previous scene. We established a net between the scenes of the hare bouncing back and forth, and the ball bouncing... It might be thought we would have to use a pan, but the only way we could really establish that action was to have it on a line; when the hare hit the ball, it had to come out of scene 1 and enter the next scene and retain the feeling of coming out of one and entering the other on the same trajectory ... we established the hit-run entrance from one scene to the next.

Would it make any difference, in the transition from one scene to the next, whether the same foot used in the first scene followed thru in the next?

No, especially not in this case which was so speedy that you couldn't see his foot. When you make a “cut”, it gives a feeling of a lapse of time, and you can assume either that it is a direct cut, instantaneously, or that there is a second in time in between; in that particular example it was the direction that counted more than the position, although being on a line with position is the same thing. If the hare's body had been crouched in one scene, it would have been well to have him in a crouch and straightening up in the next scene. That would be the important thing in that example; but in the previous example used the feet were not important so would not have to be on a line... there would be nothing wrong, however, in covering the feet.

I said before it was a cardinal sin not to put over each piece of business in our scene. In order to accomplish that, we must do the action out in the clear where it can be seen. We must anticipate so the audience will know what will happen, and then show the result of the action. An actor on the stage would rehearse his lines and position and part, so that if he were going to reach for a match and light it at a definite time, he would do it where the audience could see him do it; if he were pulling a gun to fire, he would do it so the audience could see the action. If he were to shoot it from his pocket, he would show a bulge in his pocket which could be seen by the audience.

In TORTOISE AND HARE, the hare would anticipate his serve, then serve, then anticipate, and run out to the next scene where he received the ball. We showed he was going to serve by moving his swing one way before turning it into the serve... It doesn't have to be a stop anticipation. The anticipation is obvious in a tennis stroke because it is built up on anticipation. But anticipation must be considered in the other action.

DON'T EVER FORGET - ANTICIPATE BEFORE YOU DO THE THING - THEN DO IT OUT WHERE THE AUDIENCE CAN SEE IT. It sounds silly to put that in words, but I have seen this point ignored or lost so many times in our own animation that I knew someone of you here will overlook it sometime. I have seen a pup bite Mickey's finger, and that finger is not in plain sight ... Even if the layout man gives you that problem, you should go back and discuss it with him and with the director to get a better way of doing it so the gag will not be missed. We should be especially careful of these points now that we are getting a little more elaborate with gags and don't follow the old method of doing all the work in profile — a forced artificial device, but the business did get over then.

(continuing discussion of on a line action) I had a problem once of some cats pulling a grave each had hold of the tail of the cat preceding it, pulling the tail over its shoulder... the feeling of the whole progression was that of the Volga Boatman number — the line of cats pulling a rope made up of tails .... (demonstrated the manner of getting over this impression --- the first drawing, one in which I worked a long time, was a straight line to serve as the rope or tail action, the cats pulling thru it. After that was settled, it was a matter of working on the cats to show where their heads and fannies would show the biggest strain and pull.)

Another example of working on a line; a person hitting another on the chin. The hit might be an upper cut, a punch, or a glancing blow. If it is an upper cut, for the action and reaction you must make first the strongest drawing for the upper cut itself; after you have made that drawing, make three or four more to make the drawing even stronger; perhaps bring the foot in; after that you have an arc of a line from punch to head; the head must react to the force of the punch ... it is almost more important than the punch itself. (Forget all the other ways of doing things ... there is an exception to every rule, but I will just hit the rule in elaborating on these examples.)

If the force of your punch came at one point, the head that was caught would follow thru along the line of the force of the punch. If the receiver's body pulls thru, the blow will probably snap his neck back and he would probably be dragged thru the air following thru on the line of the blow. If the punch is a lift up, the body will follow thru ...

Another example: the turtle we discussed at one of these meetings when we described the handling of the animals in SNOW WHITE. The turtle has a shell — the house he lives in. The turtle has a body - head and tail come thru at either end of the shell. You must feel the animal is tied together. If you work a gag in which you pull the tail out, the head will be pulled in; the force of a blow on the upper shell would push out everything under the shell.. there are natural forces which must be applied in a natural way. If you get a drawing of a turtle from the layout man which is inadequate, make a drawing of a squashed turtle (if that is your action) to improve on the layout man's sketch...The layout man is not an animator and should not be expected to get all the action into his drawing.

The same principle applies to drawing of the human body ... but these points are not always remembered. An animator will show a character talking with his head and hands, but he won't have the action follow thru to the feet and the rest of the body. That applies too to a position like that of a man leaning over an urn it should be expressed all the way down to the man's toes.

> *(asked Ham to discuss the animation problem to be given out (scene from a carnival) from the standpoint of action and line, directness, presentation, taking into consideration that Mickey is a show-off and wants to show Minnie how strong he is... no strength or action at the start, just set up...)*

We were going to ask the men to make their own layout and present the action in the most direct way they could. Mickey should be strong enough to handle the hammer, or it may be too heavy for him to handle it easily ... scene length about six feet ... exposure sheet will show definite length and the beat on the hit.

(warned the men at the start against doing too much instead of too little in animating the problem Drake assigned.)

I still do too much half the time, but up to a recent period I was always doing too much . . .You are bound to run into the same thing yourselves as you study animation... if you are trying to find a short cut to animation without being restricted by your experience in it, the suggestion I would offer is to absorb such points as these and apply them as soon as and as much as possible in working out your scenes; profit by the mistakes and experience of others; figure out your scene; make your drawings; then examine your drawings again and say, "someone told me my drawing won't be strong enough"... you will probably think it is as strong as you can make it; consult someone else and ask if the drawing is strong enough. A week from the time you made the drawing, you yourself will find in looking at it again that it is very weak ... it never fails.

In the assignment outlined, it might be well for you to do too little rather than too much. If Mickey is standing without any weight in his hands, he will pick up the hammer ... you will want to got the biggest anticipation you can at that point ... if he is going to hit something down, he will have to go as high as he can. I would start with that anticipation and carry it as high as I could. The hammer is a heavy one - Mickey is able to handle it, but not easily; he gets it as high as he can — then continues the arc ... it comes down strongly enough so he really hits the base; perhaps the force throws him up on the reaction.

Remember it takes some time to start a heavy thing in progress ... as the hammer is pulled up it moves more easily; as it comes over the top it has a force to it; as it comes down, it has all the arc and weight behind it; when it comes down, it can hit and bounce. If at the end of it Mickey were thrown up in the air, his reaction would be in line with the action of the handle of the hammer.

In doing this problem, I'd make first my starting drawing — then the anticipation up which is half way thru the swing; my hit; and the anticipation back. Get that group of drawings first ... (if you work from one to the other you would have stiff action); then work back and get your straight animation from the first extreme to the second, third, etc. You will probably have to change your first drawings a bit to follow thru on the swoop.

(illustrating point with another example) If I had a scene of a target with a bull's eye, and we're going, to shoot an arrow from a distant point to hit the bull's eye — that would be to me an example of working from extreme to extreme, because I'd want the arrow to be pointed directly to the target. If' I worked straight ahead, I probably would not hit the bull's eye; but if I drew a drawing next to the bull's eye; then drew a line to chart the course of the arrow; then I could put the other drawings in and probably do the problem in an accurate way. The arrow might be of a harpoon type and have a rope attached to it; we might consider the rope weaving along the wake of the course followed by the arrow. It might be hard to draw the rope weaving from drawing to drawing; in that case it would be well after finishing the arrow, to go back to the rope, getting a flow to it that would be more convincing than following the rope action with the arrow on inbetweens.

Would you pick up the two extremes on your rope, or follow thru from drawing to drawing?

I would consider that rope straight for a distance, perhaps about to the middle of the action, then add the weaving action to get the flow ... In the action of a character crouched in one scene, and coming up in the next — even the you have two different scenes, it would be well to make the crouch drawing first; the up drawing next; half-way up. Then the lean. Then make rough drawings of the half-way points in which the character is straightening up (but we would not get the subtle twist of the body and the subtle leg action here.) Then work straight ahead from the drawings you have to complete the action.

The same applies to your animation problem. It would be very hard to start Mickey and go straight ahead ... it would be hard to get the best anticipation drawings, to get as high up as you could before hitting down. If you use these extremes first as a chart, then you can go straight ahead with the other drawings.

What do you mean by "doing too little instead of too much?

You have six feet for the scene — that is, four seconds. If you map out the action of hitting a hammer on the ground, in four seconds, you will find you have no time to spit on your hands, to turn around to look at Minnie to see how she is taking it; you can't put a couple of extra swings in; you have only four seconds, which is just enough time to get the hammer started, hit it, and react to it. You will be surprised to find how many other little things you are going to put into that action, even though you have only six feet on the exposure sheet and must make 120 drawings.

We have something we are going to hit — Mickey is standing near — the blow is to come down and squash the base. One drawing is a force drawing — Mickey is way up in the air; if he wears a coat, his sleeves would be pulled up because his arms are way up. You don't have to hesitate on the action. The extreme on the highest point is the force drawing, just as the blow is. The slow spot is at the beginning. If it's a heavy hammer, you would want to show its weight. Both drawings have equal importance but the first one has more time, the second more force.

Would you say the actual hit is the most important thing in the scene?

It is important only in so far as you keep the audience with you ... your anticipation may take more drawings but the hit is the more important thing, then. (Ham agreed)

Do you consider the anticipation taking hold of the hammer and swinging back? Is there an anticipation to Mickey's actually starting to lift the hammer?

There you are with six feet again - and there is where you will do too much, possibly. You will find 100 ways of doing anything you want to do; if you act out the business, you will discover a complicated or a simple way of doing it. In six feet, you will have to use the simple way. Rather than get a lift, then a swing back, try to act it out with just a swing back. One method is as good as the other, but time determines which you should use, and a great deal depends on the picture that goes before the action you are animating.

Is it important to have the anticipation to the wind-up?

I wouldn't answer that without knowing more about the scene and its place in the picture.

Wouldn't the act of picking the hammer up serve as the anticipation — overlapping action?

The simplest way to do the business would be to have overlapping anticipation. Different actors would do a piece of business in different ways. If a tough man were doing it, he would probably put a swagger into it, but you would have to have time to project that. In this case, Mickey is doing it, so I think your overlapping anticipation would be the thing. Later on, if you are given some problem with another character who is very confident and assured, you would have to be given more time to put over the action.

As you progress in the work, you will be given scenes of varying lengths determined in advance ... one scene may be merely a connecting scene in which you are supposed to do nothing but run or walk a character across from one scene to the next. To do more than you are supposed to would possibly kill a gag that is to follow; so find out what has gone before and what follows, and use common sense in handling your scene; you can't do it without acting it out yourself.

What determines your choice of poses in planning an action?

The series of pictures that I know must go into that scene. If you were laying out a comic strip, you would figure out how many squares were needed to tell the story, and that would be your line of drawings. Here we have a scene that must go thru a certain number of steps ... it may have several stops which may mean that many more anticipations. In a comic strip the reader can go back to something he did not get; but he can't do this in a moving picture. Act the stuff out before a mirror, or if you can, visualize it - see how many moves you must go thru to put over the idea — stop moves, moving moves, then result moves. I'd make all those drawings first; then the next important ones so one thing leads to another; then your inbetweens or straight animation can pass thru those.

You will have an opportunity to apply the points discussed at this meeting in your animation of the problem assigned to you.

How are you going to show just how much swing to give to the mallet?

There would be two ways of swinging that mallet: one, pick it up and with no extra effort the mallet would swoop up and hit; the other, you come up, a pause, then come down and hit the base. Get a mallet - try it out - and determine for yourself which method you will animate.

In our cartoons we are imitating moving pictures ... we get into the feeling here that all action is done in jerks; but actually we are moving continuously thru an action and the movie camera is only a mechanical thing that follows thru on the action. Our camera very mechanically shoots 24 frames a second, just as rhythmically as possible, which means our action is divided off rhythmically. Examine a group of cels painted here that are well done and you will notice a very nice progression in the action. Or trace a moving picture of an action on celluloid and you will see it is very rhythmically divided. It is impossible for timing to be slow, then gain speed and then come down slowly and go fast again. It cannot be done (eliminate the exceptions to the rule) — but generally speaking this is true.

TIMING

(demonstrated — spaced two drawings close together, the third a distance away — these three set the placing of the fourth drawing.) If an action is gaining in speed, the fourth drawing cannot help but be in an ordained position. No matter what your action, it is impossible to break up the drawings except in a definite way.

On the hammer swing, it will have to so slowly, mechanically pick up until it socks down on the hit; if it slows up then speeds up, you would have to indicate that in the timing of the action. If you hold too long at the upper point, you would got a screwy effect.

It takes at least three exposures to feel a contact, You are all accustomed to shooting stuff on two exposures each for a continuous action. If someone were running fast, his movements quite large, the best we could do would be to put that action on ones, since we can't sheet half an exposure on each drawing; we would still get a progression that would be all right on ones. If the action is moving too far, we get a better result by blurring. In other words, if we had a baseball that had to travel a distance in one exposure, a camera shooting that would pick up a blur that would overlap ... it would be quite a brilliant white ball and would dim out into an airbrush feeling. We imitate that and put the action on one exposure. If the baseball (or a better example would be a hand) were overlapping itself on one exposure, it would be all right; if we did it very slowly, we could shoot both overlappings on two exposures rather than doing inbetweens and shooting them on ones. It might be impossible to draw the lines close enough together when shooting such overlapping on ones; shooting on twos would avoid inbetweening overlapping and resultant wiggling of line.

If we put the action on three exposure, it would take care of the very slow swinging of arms from back forward.

The general rule is never put slow action (of hand) on threes; you would get little steps because threes would give you the feeling of contact or stop. The smallest hit that would give you contact on the hit would be three exposures (someone running and the feet just hitting the ground).. You wouldn't get the necessary contact in two exposures. Although there is nothing wrong with using twos, you would not feel the feet actually hitting the ground. If you wanted to get a real contact on the mallet coming down, you would have to use 5 to 6 exposures... you would have to hit the base — possibly get force in two or three exposures — flattening it out - one exposure of hitting the block — one getting flat— 2 flattening it out— There are many ways of doing it, but if you have a blow, contact, hold on the contact - you would take care of the hit.

Would you plot out how you would work thru a slow animated hold?

One of the nicest and most necessary effects we get working here is a movement and, a stop; that stop we call a hold, and our movement is a change of timing and going into that pause. The pause is done so we can see the action. On the stage, for example, if someone sees something - he steps and looks; a dancer executes a movement and comes to a stop, poised; you cannot think of an example where you do not have movement and a stop. We have a way of taking care of such stops in cartoons — I speak of drawings which express the position. It is impossible for me to come to a point and stop in one exposure; though the action may seem to freeze, there is a very slow movement beyond the frozen position almost indistinguishable but present. That is what we have to do in animation. You may call it a trick - something we learned in drawing, but it is necessary that we resort to it. You have an animal with his head down, asleep, logs curled up under him; he sits up into a sitting position because he hears something; this last may be your tenth drawing — let's consider that the previous drawings were not so good; after you have made the best drawing you could possibly make - the tenth in this case - make a better one coming up higher than the good one you made (the tenth)... keep the tenth ... the animal's eyes would open wider on the new drawing, his legs would come up higher, his tail would straighten out; Now you have two holds that are exactly the same picture, but one is a strengthened version of the other ... it hasn't done something new — it is just intensified; you would want to catch an accent on it and have the animal sit up quickly. Anything we start moving, we must start moving slowly ... Start the animal coming up with his head moving just a trifle — eye opening just a trifle - ear pricking up just a trifle; the next one a little more intensified and from that go quickly into the next to the last drawing (the tenth) ... that seemed to give a very good hold; from that to the best drawing put as many inbetweens as you can - 7 to 10; and that intensifying that action would be a mechanical way of taking care of the barely distinguishable action. That is one type of animated hold.

Another might be a person coming up and settling down from a hold (as well as coming up to one and intensifying it.) In the settling feeling, the next to the last drawing would still be the wide-open one, and the next one would be a little settling.

The holds I have been discussing are anchored holds on the ground; but there are times we want to show something happening in the air; that is where we have more leeway than the movie camera. One example - Fred Astaire could jump up in the air, come down, and hit a pose. Mickey night jump up in the air - hit a pose in the air - and then come down. If he were to do that, it would be handled in the same manner as Mickey catching a baseball (discussed earlier.)

In the Astaire action, the movement coming up would be starting and increasing the speed coming to the pose; go further with it and stronger and use the best drawing you have, then the one better than that ,.. go into it rhythmically Astaire would be moving and coming into a pose you would hardly feel; he would come up into the stop and the pause at that point ... that is where you would hit the actual hold; then come back. On the baseball example, you had to get Mickey's arm out where the glove caught the ball. As the ball hit the glove, you would have to have the glove open - the ball buried in it; from the arm extending to the glove, one inbetween; then a relaxing to show Mickey had caught the ball; a hold to show the ball was caught. You hit the extreme very fast and then slowly back ... a pause of 12 or 16 exposures (a second or half a second); we took care of the hold - kept it moving, and put over the action by hitting it strong and having a movement that was right in line with the thing. The extreme isn't held more than two exposures; you might even put it as one exposure, and two exposures into the coming back.

How can you keep Mickey still while his hand comes back with the ball?

(Ham here explained pan movement in relation to movement of a character) If character is moving in one place, he is running at the same speed as the pan; if character is gaining on the pan, he is running at the speed of the pan plus the speed he is gaining; if character is losing on pan, ho is running at pan speed less the distance he is losing. The action of the pan slowing down gave the effect of Mickey slowing down as he reached out for the ball (in example of exaggerated Mickey catching baseball in glove) ... the arcs describing his action could be done in any way - but that would be an individual problem to be handled as it arises.

Suppose that there were a take and you wanted to get the feeling of an exaggerated, distorted drawing, without being conscious of the distortion ... how would you obtain that in timing?

Using the example of an animal sitting up — we will take him in a very excited hold instead of merely sitting up; if the extreme were an ugly drawing — just something for effect — we would have just one exposure on it; the next drawing would be calmed down quite a bit on one exposure; and the next one would be the nice drawing.

Why do you exaggerate so much instead of just bringing the animal up into a natural "take" position? Why do you go so much further?

Perhaps to show greater emotional strain — the character might be terrifically scared. If he were just interested, we would show him as discussed before. If a gun went off, to got over the effect of his fright, his hat, if he had one, might go up; his coat might come up; the thing we are caricaturing in our cartoons - the impression — those things an actor cannot do — are what would be shown in the accent drawings. The actor can go only as far as his body will permit; we can go farther.

In the character's take, I would stretch the arm out more than the body (referring to Mickey catching baseball); the whole body, however, would react to the movement — the sweater would have to be pulled up on the body, cuff and sleeves would be involved. In the air, catching the ball, the arm would have to be shown starting to go out from the body... You have only one drawing to express the whole change from the extreme to the hold ... The feeling of the hold to the little more relaxed position would be 8, 16, or 24 exposures...

Must the figure be on balance all the time? *(question referred still to Mickey and his seeming unbalance when up in the air catching the ball)*

The pulled-out position of the hare, returning to that example, is naturally not a balanced position ... A man doing a hundred-yard dash would be leaning forward, off balance as far as his body wore concerned, but his speed would put him in balance his speed and running - would be in combination to give him balance.

In the extreme drawings when the hare is catching the ball, he should not be in balance ... he leaped up in the air and was pulled off balance, if anything. When the momentum slowed him down, his feet would put him in balance, and from that into a pose position with the ball. I have often puzzled ever the question of when a character should be in balance and when he should not be. Whenever a figure is down on the ground and into a pose, he is in balance. If he is going to stop, he would have to be in balance; but if he is in the air, reacting to something, he would not be in balance on the reaction or the extreme of the reaction.

Balance must have some definite relation to the ground... the character could be up in the air and still give feeling of balance...

Isn't off-balance a pose counterbalanced by the momentum of the action? *(further discussion on this point not noted)*

...What license may animators take in timing and fast action and putting punch into their work? (as in TORTOISE AND HARE, when the tennis racquet came across in three frames and yet was easy to follow,)

First I would say you can do anything, but then I'm afraid that you might do “anything” in every scene. When you are trying to put over an illusion of speed, go as fast as you want; but when you are putting over ordinary everyday action, do it carefully; save the exaggerated speed spots just as you would save exaggerated drawings for the time they are necessary - they come up only once in a while.

As I said before with reference to timing, it is impossible for something to go fast and slow, fast and slow; you will find most of' your scenes will have to progress very smoothly. You know when a ball goes up in the air, it starts slowly, speeds up, slows up, then comes down fast again. That happens with almost every action...

No matter what you do, you will want to start the audience's eye out in the direction you are going. If a hand is at one spot and moving to another, you must allow the audience to see the hand going out the drawings are slow there; as the hand goes out, it gains speed but it continues to be a nice smooth effect; but if that hand is to go out in the hardest punch you can put over, start it slowly, pick up with a couple of exposures, and then if you wanted and had a progression, go beyond in timing, but after that come back to your conventional timing. It is the variation of slow and fast that helps.

How about speed lines?

Generally they are unnecessary. I have seen a lot of movie film frame by frame and it's surprising to see how many blurs we get, things you think would be clear are not so at all. A certain amount of distortion is pretty good in moving a hand across a scene, for example, if you can take care of it with hand and fingers stretched out a bit to carry across the illusion. If you use speed lines you may get an impression that I don't think we want at any time - an impression of netting dragging along behind the object. Remember that if the camera is taking a picture of a foot in one frame, and another foot in the next frame, the space between being blurred out, it is impossible for the camera to take a picture of its own blur. Many ask if we should fade out speed lines and gradually show them disappearing. A camera would not do it - there is nothing to be disappeared on the third picture, so don't put anything there, If you have any blur, have it take place before the third foot is shown.

I think you can get the same effect without using speed lines ... they have their place ... We had to use them in TORTOISE AND HARE to got an effect of great speed and pinwheel. I would recommend, when in doubt as to whether or not to use speed lines, to leave them off.

We have discussed. them before and Don and I both agree they are not necessary.

Most people get into the feeling of speed lines because they have made illustrations and cartoons before they came here; our technique here requires different handling, however here we have a moving picture and already have movements, so why put them in. Speed lines should be used just for exceptional handling. If you had a hand dragging thru a scene, make it a streamlined hand for the required effect. In making the hand go thru lengthwise, you can make it longer at the fingers; or wider, if the hand goes thru palm up, but not so wide that the audience will see it as a white streak across the screen.

> ***Getting back to discussion of feeling and meaning of action which are probably the most important phases do you plan action graphically, based on your analysis of the action, and then work into the caricature feeling?***

I generally find my first day is lost or wasted ... After working on a thing a while I got a better idea of it later after it has seeped in. Often I think I have given a scene all the thought I should and start work on it, but it doesn't seem good to me and I find I'm not getting a kick out of it. Then I get home, work in front of a mirror - get an idea which may pop me up then go back to the scene, put in the extra touch, or do it the new way that occurred to me. If all that planning had been done before starting work, the time would not have been lost. In most cases we don't do enough planning. The difficulty may often lie in just simple things; often further thought will furnish a whole new slant on a scene; at other times you may got a new feeling for personality.

You must exaggerate a character very much - it is impossible for us to do things straight - we don't want to. We are making exaggerations in our pictures. Once you have picked up a character and are working on him, getting to know him better and better, you will find moving pictures of other people will suggest attitudes, poses, characteristics you would want to get into your character. It's a matter of observation and trying to apply these observations to your work. Often a dopey fellow like Joe Penner or W.C. Fields will suggest characteristics that you can enlarge upon in a dopey character. If you were doing the hare, you would start noticing cocky people - you would see their fancy ways of doing things and you might caricature those. There's a progression from straight thinking to building toward a stronger feeling; but it comes gradually, and the more you think of it before time, the better off you will be.

> ***In our simple test of Mickey, if we want to bring out the feeling he is showing off — how would that be done? In the stages of planning the action; the layout is based on the analysis of the action; then you bring out things in the drawing that give you the feeling?***

I think the best thing an animator could possibly do would be to learn to be an observer. Sometimes I get into the habit, and it's wonderful; at other times I may go for months without thinking of it... You might go down to the beach, for instance, and lie there all day long watching the waves come in, but they won't mean anything. However, if you think of them in terms of animation, you will find the foam does certain things when it comes up on the beach; that the surf breaks a certain way ... I know if I had not actually observed that recently and someone had given me a beach problem to do, I would just have had a mental impression of waves coming in which would not be as good as my impression is now which is based on conscious analytical observation. If you watch someone do a dance at a show, you can accept it, or observe it critically noting its significance, technique, its importance to you in form ... the dancer may go thru certain movements you would like to imitate in animation. That sounds like a speech, but it has proved helpful to me to study action when watching things move. If you go to the zoo, don't go for the express purpose of studying action - just make it a habit to think in terms of animation whenever you look at anything, so that when you do go to the zoo, your observation and analysis will be a matter of habit and storing away of detail rather than a task.

Animation Theory & Practice: Notes from a Lecture by Ham Luske 08.19.1936

I'd like the men to develop themselves so they may be able to do good roughs for sweatbox. Could you outline what is essential in roughs so they may have an idea of the importance of the rough — what should be in, what may be left out, what the director expects to see in the rough?

Different animators at the studio work differently - to our disadvantage most of the time. I have worked on my first poses in rather a cleanup manner because I am not good enough to put them down in the rough. There are other people who can get in the rough pose the same thing I have to work toward in cleanup, but after I have come to that spot, I can work as roughly as they do. Some of you may work one way or another. In any case, my cleanup roughs don't have have any of the details, (illustrated a rough of hare catching a ball) I would want to show the sleeve being pulled out of the arm — I would strengthen the line at that point so that it would then have only to be carried out by the next man; put in wrinkles on the sweater; If the sweater were pulled up on the body, I would show that ... that detail would have to be carried only where it is actually being used. If the sweater had not reacted to the catch, I would not carry it at all. In other words, there are many characters you do not have to dress at all. In this case, the hare's ears are necessary because they give you a chance to follow thru in action; his feet are necessary as far as shape and position are concerned; no need of toes; on the head tilt I generally find I can carry a double circle to indicate its tilt; a line that travels in the direction the head is to be tilted is helpful; if it is a circle with two forms on it, use them; if a scared mouth expression were to be used, put that in; put in eyes when necessary, or as a line when they are not.

These roughs as drawn on the board would read as well on fast action as in cleanup action; but if a fellow had a pose with fingers in his suspenders, I would have to put time on it — I'd put the wrinkles in, the smile, all the form - but no buttons on clothes. After that pose were drawn, drawings leading into it could be drawn very roughly.

We talk of caricaturing things and poses. When you start working on something, think of how you can caricature what you are after. With the hare we caricatured everything on athletic goods - we went big on the baseball, the tennis racquet. With Mickey and the sledge hammer, think of caricaturing the size of the hammer. If the sweater were supposed to be tight-fitting, get it that way and see how it works. If a character is supposed to be dapper, caricature the crease in his pants and the tight - fitting waist of his jacket.

How about correcting tests — is that as difficult or more so than making the test?

Correcting is rather difficult, but if you have worked from key positions (as I think is necessary) it is much simpler. Instead of starting the swings in your problem and then having to correct something - a difficult thing to do - if you have made your poses you will knew where your stop-in and starting places are and corrections will be easier. No one can set a rule about which is the best way to work. Some problems must be worked straight ahead - others from pose to pose; but if you have your poses you will know how to go ahead.

It's easy to get a metronome or have someone put a stopwatch on you and go thru your action ... dope it out first and you won't be so far off in your animation. After you do that, caricature your timing, make the parts faster or slower as you see them. If the director works all the timing out for you, you won't get the results achieved when you work together. If you are a help to the director, he will want to work with you; but if you are uncooperative or unable to help, you will have to depend altogether on his timing as he gives it to you and very likely you will miss out on something he wanted. It is a good idea to work on it together, but in your first assignments you will be getting the stuff pretty well established; as you start contributing essential things to the scene, the director will know he can start working with you. The timing is built up primarily by the director and the story department.

Regarding pans - their use is determined by the director, but the animator determines the distance. A director may even give an animator a pan and a blank space in between that is not set until you tell him how far to move the pan.

Animation Theory & Practice: Notes from a Lecture by Ham Luske 08.19.1936

(by Ham)

Remember you must put over a scene - you never can go back on it draw a picture that puts it over to you - show that picture to someone else and ask that person if the picture expresses what you are trying to show; if he asks, “what is that?” — do it over again.

Anticipation: put that over as strongly as possible and show result. Plan it out very strongly first before you start working on it; nine times out of ten you will find you put too much instead of too little into the animation; you won't pick the simple way which is the best way of attacking the problem. You know what is coming, but the audience does not; if you haven't shown it simply, the audience won't get it.

Build up from the simple way, and your corrections will come more easily. If you put in a simple hold which is wrong, you can liven it up; but if you go elaborate on it, your problem is made more difficult.