H&B Layout Notes

A Helpful Guide to Layout **By H&B Staff**

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GENERAL HOUSEKEEPING NOTES TO TIMING DIRECTORS

In view of the "crunch" of the schedules we are all under, some important “housekeeping" reminders for ALL of us....

1. **WRITE / PRINT CLEARLY** - Remember that it takes the same number of strokes of the pencil to write clearly as it does to write un-clearly PLEASE, take the appropriate pause, deep breath, moment of Zen to find the place where your printing can easily be read and understood by all who need to.

2. **FORMATTING / CLERICAL NOTATIONS (SEE ATTACHED SAMPLE X-SHEET)**

A.- be sure to put a small and concise description of the scene under the scene number and put a box around it to separate it from the other information in the scene

B.- be sure to note your initials in the TIMING DIRECTOR or SCENE DIRECTOR box of each page ofthe x-sheet

C. - be sure to note HOOK-UP's clearly not only on the x-sheets but also on the storyboard if needed

D.- be sure to note CUT above the scene cur tine in the camera column

E.- DO NOT mark fade-ins, fade-outs, wipes or x-dissolves between scenes, these will be done in post and a transition log should be provided to you for reference so that you can keep any key action or poses clear of any planned transitions and yet keep any appropriate action or momentum of the scene "alive" through such transitions

F.- be sure to note scene # ____cont. at the top left of each x-sheet as well as note the scene #s of each x-sheet in the SCENE NUMBER box top and bottom of the page

ADDITIONAL NOTE:

DO NOT DO LIP-ASSIGNMENTS. WE WILL TAKE CARE OF THAT. THANKS!!!

YOUR HELP WITH ALL OF THIS IS GREATLY APPRECIATED

AN OPENING THOUGHT

LAYOUTS. They can inspire animators to believably move characters and background artists to paint convincing stages. Or, they can be an uninspiring burden. They can make the difference between a good-looking and a bad-looking animated film. In each case, of course, the difference is that between good and bad layouts. Hopefully, in some small way, this booklet will help to produce better layouts. What is contained here is not new. It is a compilation of ideas, tried and true, which can help generate good layouts and good-looking animated films. It is not a recipe book scientifically conceived and guaranteed to produce instant success. Rather it is intended as a springboard. A few restrictions of layout mechanics are outlined and a few suggestions of aesthetics are mentioned; after that it is up to the individual. Each
layout artist should look to go beyond the material presented here and learn as much as possible about filmmaking, in general and layout in particular. The craft should be learned well. It is the individual layout artist who can inspire the artists farther down the line of production, and more than anyone else, it is the individual layout artist, working in a group spirit, who can successfully shape the look of an animated film. Please read the following pages with care. Though they deal with some concepts that relate to all forms of animation their specific subject is Saturday morning TV production. Beginners in the field will hopefully find the information contained here a good starting point. More seasoned hands may find some of the information old and repetitive --- but it may also serve as a gentle reminder of hazy concepts overlooked or forgotten.

FUNCTION

From the outset, it is important to realize the function of the Layout Department in the scheme of Saturday morning TV production. Superficially, layout artists draw production size animated figures and backgrounds, separate them, and pass the results along to the Animation and Background Departments. Truly, if the job is well done it goes much further. In stage terms, the layout artist is both the set decorator and the choreographer of the play. He or she designs the sets (backgrounds) and stages the actors (characters). The rough plotting of the characters' moves is also accomplished in Layout. In film terms the layout artist is the director of photography, determining just where the camera is positioned in each scene. He or she is also a technician, setting up scenes so that they will work mechanically under the restrictions of the animation camera. And the layout artist must also be a bit of a producer, realizing that budgets can be made or broken in Layout. How well the layout artist plans scenes and how efficiently and correctly those scenes are executed is very important. The initial accuracy of layouts can go a long way towards cutting down the number of errors or re-takes in a picture. There is also something that Layout is not. With almost no exceptions, Layout is not the phase of production that generates finished art. It should be emphasized that good layouts are not made by beautiful lines and painstaking rendering. The value of a good layout is in how easily it can be worked over by following artists and how each layout fits into the flow of the finished animated film. Good senses of planning and design are two of the most valuable abilities a layout artist can possess.

PLANNING

Time spent planning the layout of a picture, or section of a picture, is time extremely well spent. If done well ard expeditiously, planning can allow the entire production, from layout to filming, to proceed smoothly. Here are a few suggestions on some specific areas for planning and preparation. Before any picture can be laid out, the layout artist will be provided with a set of models, rough or finished, which represent the main and incidental characters of the show. These should be carefully studied and analyzed, and the construction of the characters understood. In some cases (see Figures 1 and 2) the construction is presented on the model sheets. These should be studied and traced to understand just how each character is put together. In the cases where construction models are not provided, it is a good idea for the layout artist to discover the construction for him(her)self.

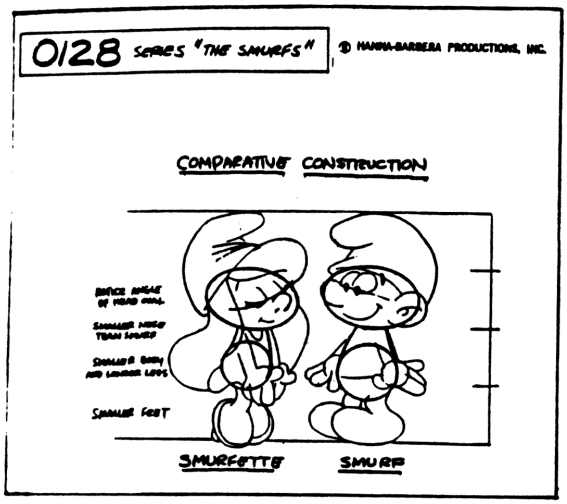


Figure 1

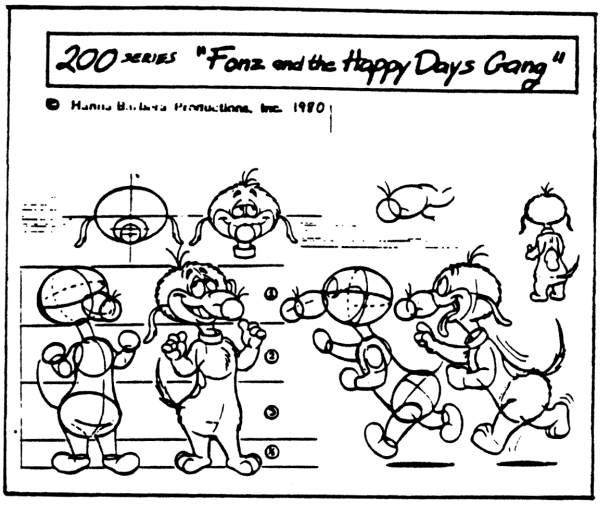


Figure 2

In Figures 3 and 4 the structures of Richie Rich and Daisy Duke have been analyzed into their basic shapes. (REMEMBER: all figures are made up of forms and volumes they are not a\ collection of lines.) It is necessary to discover what the volumes that make up a character are, and what proportions those volumes bear to one another. It is of particular value to know the character's height in terms of "heads‘. (e.g. Richie's 4 heads high, Daisy 7.) This helps keep the proportions accurate, which is all-important for keeping the characters "on model". Animators particularly appreciate accurately proportioned layouts.

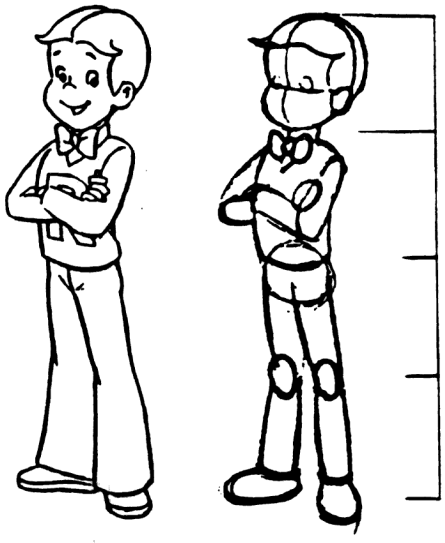


Figure 3

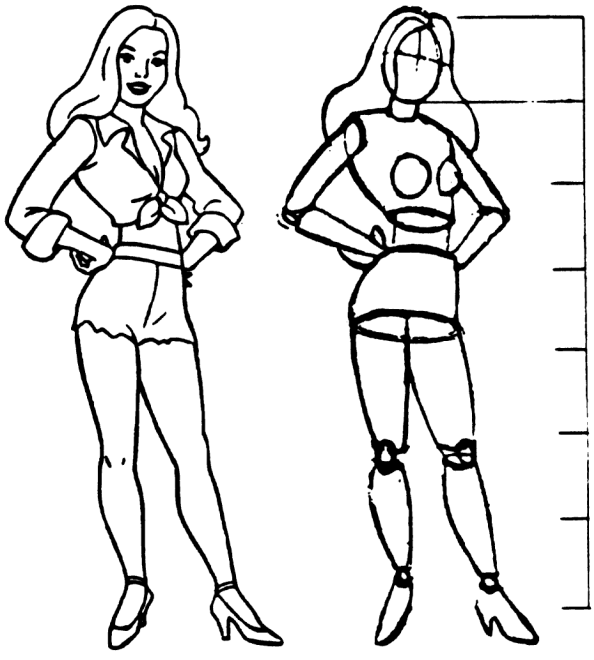


Figure 4

Once the characters have been studied and understood, preparation should begin on the specific show that is to be laid out. The layout artist will be provided with a storyboard (see Figures 5 and 6 for sample pages), which represents one artist's visualization of a writer's script. THE STORYBOARD SHOULD BE READ IN ITS ENTIRETY. Very often mistakes are made by artists who read merely pieces of the board, and important story points are overlooked or misrepresented in their layouts.

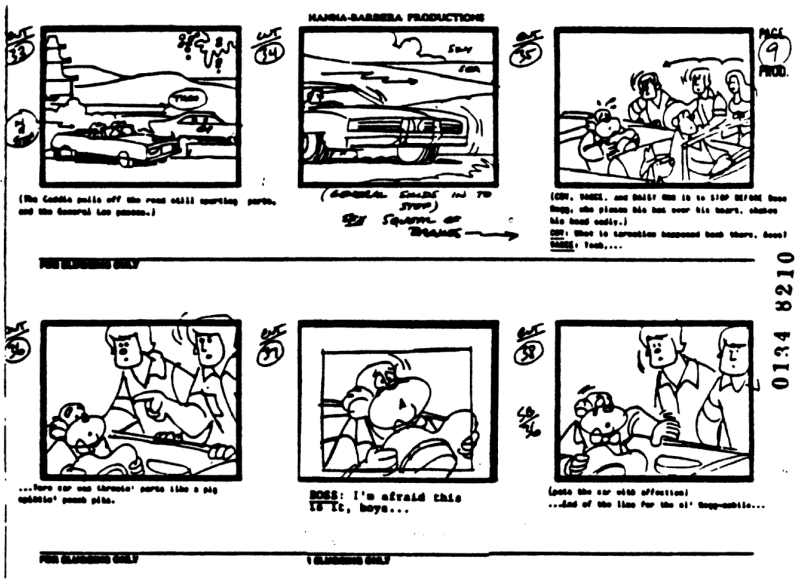


Figure 5: A page from a storyboard as it leaves the hand of board artist.

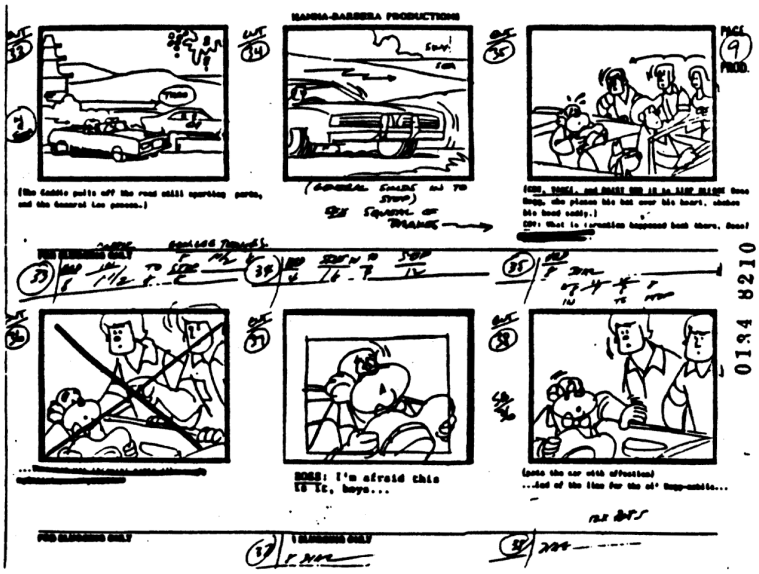


Figure 6: The same page "slugged", or roughly timed. Slugging allows the layout artist to better understand the director's wishes and save valuable time by not laying out scenes (like 36) that will be edited from the picture.

After the entire storyboard has been read, the layout artist should pay special attention to the section of the picture assigned to him or her by the Key Layout person. The section should be analyzed, and the librarian notified as to what research will be needed to design the sequence. (With enough lead time the librarian can have all the material needed by the time actual layout begins.) The sequence should be analyzed for (1) how it fits into the picture as a whole and (2) how it directly relates to sequences preceding
and following it.

*** CONTINUITY IS EXTREMELY IMPORTANT. There should be both communication and co-operation between layout artists to keep sections continuous. Story points should be noted and examined as to just how they will be handled when the sequence is laid out.**

*** * Poor storyboarding should also be recognized in the planning stages. This is an area often overlooked by the layout artist, and it is vitally important. The storyboard is not etched in stone, and errors in screen direction, continuity, and bad cutting should be caught and corrected. Figure 7 is an example of poor continuity. In SC 28 the cars are shown as if moving right to left: the camera has been firmly planted on one very specific side of the roadway. However, in SC 29 the camera has crossed the road -- and thus the "axis of action" -- to get the view indicated, and the car now seems to move left to right. In Sc 30 the switch occurs again, back to the original orientation of Sc 28. That is bad filmmaking. It serves to confuse the viewer.**

* For example, suppose one layout artist has a section entitled TBarn InteriorsY, beginning at scene 100 (abbreviated Sc 100). In Sc 99 a car with three passengers is seen hurtling down a road towards the barn. It crashes through the barn door at the end of the scene. The direct transition of locales necessitates that special attention be paid to continuity. Most importantly, the charactersX positions in the car (e.g. who is driving) must be continuous between Sc 99 and SC 100, and the hole in the barn door, if seen ~ both scenes, must match.

* * To recognize bad boarding and understand ways in which to strengthen layouts, artists would be well-advised to read Joseph MascelliXs The Five C's of Cinematography (The H-B library has a copy.). The book gives a wonderful explanation of basic filmCmaking concepts, from composing scenes to maintaining a sense of continuity, and it would greatly enhance a layout artistXs value to be familiar with it.

Solutions to such problems (such as the one indicated in Figure 8) should be arrived at before the scene is laid out.

Bad cutting should also be corrected by the layout artist. In Figure 9 there is no need for the indicated cut: the two scenes should be combined into one.

Artists should also be able to recognize overly elaborate and expensive set-ups on the storyboard. Animating backgrounds and characters moving in perspective are examples of two techniques used rarely in Saturday Morning TV: they are expensive and often visually unconvincing. When such setups appear in a a board it is best to consult with a key layout person to determine if the scene cannot use an alternate solution. (The layout key will then most probably check with the producer.)

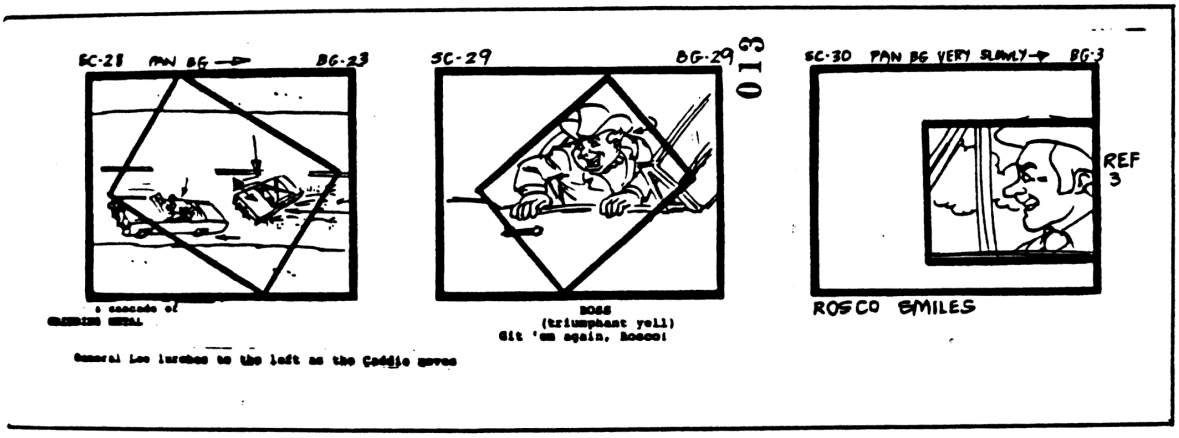


Figure 7: A sequence of scenes from a storyboard illustrating bad screen direction. SC 29 causes confusion.

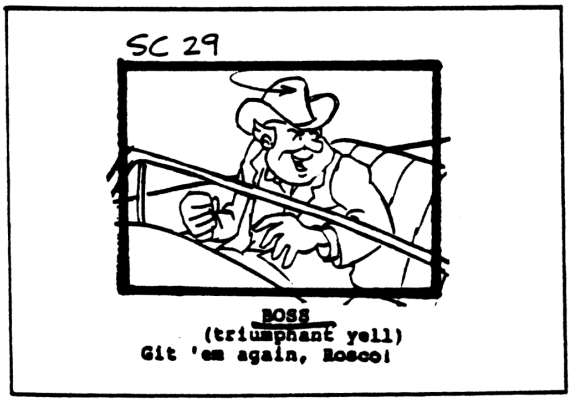


Figure 8: A possible solution to the screen direction problem of SC 29.

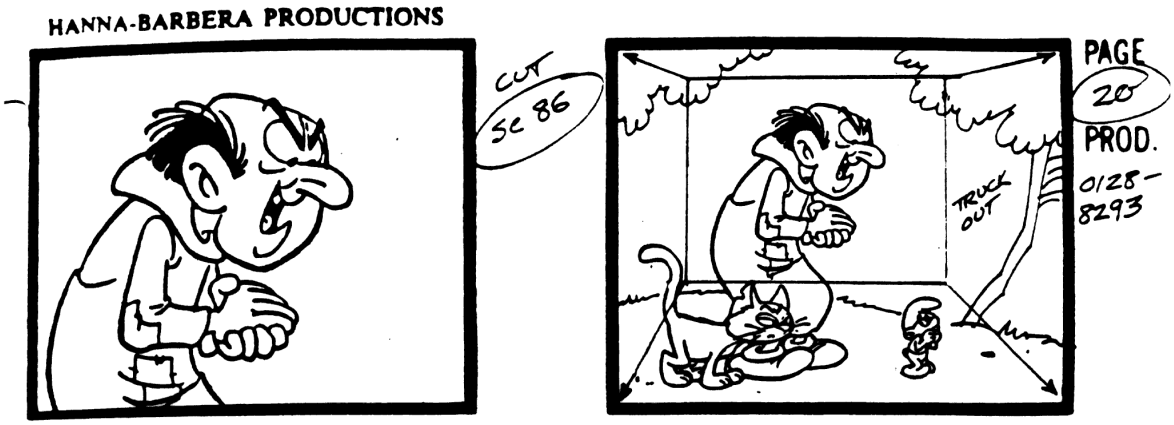


Figure 9: An unnecessary cut

The next step in planning should be the creation of a background (BG) chart. In the example below (Figure 10) the layout artist has analyzed his section and planned out which scenes will be played on which backgrounds. This is a highly useful tool. If well thought out, the layout artist will have fewer BGs to design, and the painter,

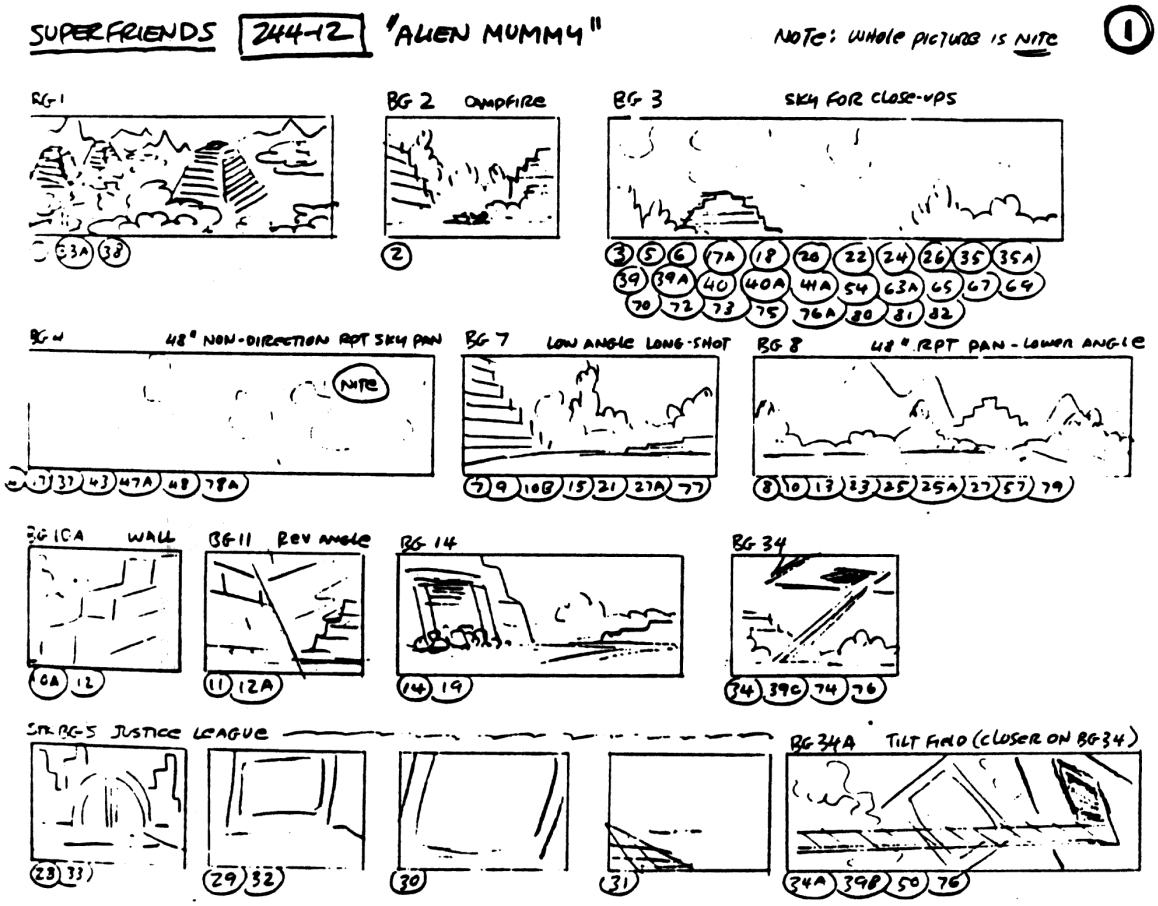


Figure 10: A BG Chart

with fewer fields * to paint, can expend more energy on making each BG look good It is a rough rule of thumb that shows should use approximately 8 BG fields per minute of animation. A twenty-two minute (half hour equivalent) show should therefore use in the neighborhood of 180 fields.)

Here are some suggestions on how to keep the number of BG fields down:

1. Use the stock BG system. Every series has stock BGs, if even just sky cards (see Figure 12). Some series, such as "The Smurfs", have stock systems so extensive that, unless an episode takes place in a completely new locale, the number of new BG fields should be extremely low. Layout artists should make full use of the stock BGs. (In some cases it may be necessary to examine the actual painted BGs rather than their xeroxed layouts. The BGs are kept in the Camera Department and may be examined at any time. Should it be necessary to remove the BG from the camera room it must be signed for.)

2. A well planned five field (A to G) repeat pan can be used over and over again for moving and still shots alike. This is particularly so in cave, city, forest! jungle, and countryside settings.

3. Overlays (OLs)) and Underlays (ULs) (see page 14) can be used to "disguise" previously used BGs and permit reuse.

4. Often the number of pans can be kept to a minimum by creative fielding. In the example on the next page (Figure 13) a five field (A to G) repeat pan has been used to serve a variety of scenes simply by fielding changes. (See page 26 for more on fielding.)

5. New BGs should not be made so slightly different from one another that they cannot be distinguished on the screen. Often, roughly similar storyboard panels can be laid out using the same BG.

* An aside about "fields". While a layout artist works in terms of scenes, a BG painter works in terms of fields. A single panel, still BG, obviously represents one field. A long "A to G pan BG", while having seven peg holes, translates to five fields, and "A to D pan" to three.

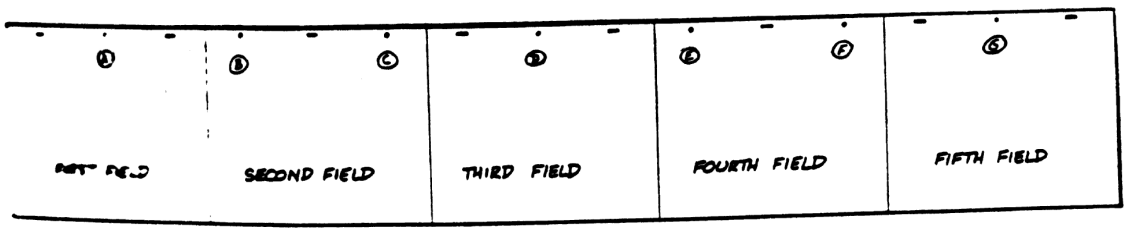


Figure 11: Field breakdown in a pan BG

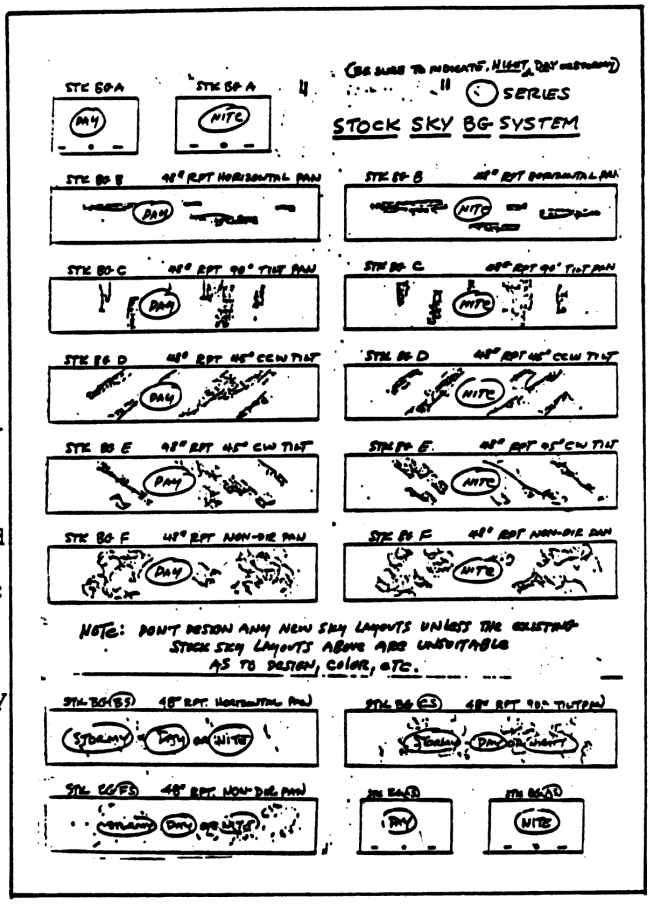


Figure 12: The standard H-B stock sky BG system. Layout artists should call for these BGs according to need and with full identification. (i.e. prefixed by the series number and ended with the time of day. For example:

9134 STK SKY BG "A" (DAY)
↑ ↑
Series number Time of day

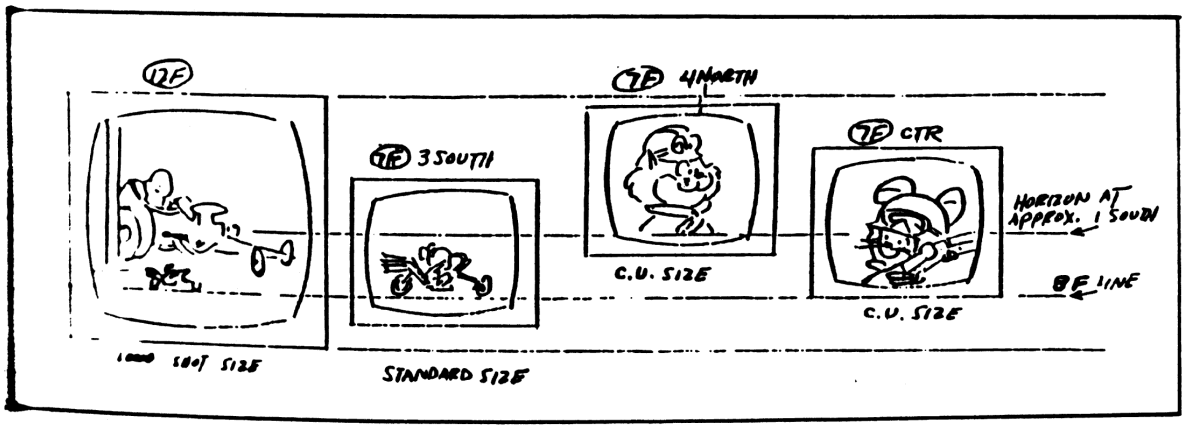


Figure 13: An illustration of how well planned fielding can cut down on the number of pan backgrounds painted for a picture. Note that whenever close-ups have been played against this BG the fielding has been shifted North. It is a good idea to always keep in mind this "Field in, field up" rule when planning BG re-use.

Animation planning is also very important. While the stock BG system can cut down on the number of fields that BG artists must paint, use of the stock animation system will cut back on the footage of new material that an animator must draw. Layout artists should check the stock animation directories before laying out a section.(And if used in a scene, a full size xerox of the stock animation, fully identified, should be included in the scenefolder.) It should be kept in mind, too, that stock animation is more versatile than are stock BGs: it can be flopped, reduced, repositioned, and/or used as a guide for new animation. Use of Stock animation, like the use of stock BGs, will speed the work of artists who follow layout.

By this time in the planning process, the librarian will most likely have reference material ready. Layout artists should mark the material, as well as the BG reference file. Sometimes or she can use the reference material by immersing . him/herself in it, putting it aside, and then designing with the “flavor" of the material in mind. Final details can be added later directly from the "scrap" as a final touch. This, of course, is only a suggestion to explore, since each layout artist must find the way to use scrap that works best for him/her. With proper preparation and planning accomplished, the execution of the layouts can begin and if proper groundwork been laid, the process should move ahead smoothly.

EXECUTION AND DESIGN

To begin with, the layout artist usually works on an animation disc (see Figure 14). The disc is provided with two sets of peg bars, a top and a bottom. Different elements of a scene are drawn on paper whose peg holes are either on the top or bottom of the page. Which elements are on which peg holes will be mentioned under the topic separations (see pages 14C15). The basic "frame" within which the layout artist works is the field guide (see Figure 15). The outer, rectangular frame of the guide is the academy line, while the inner, curved rectangle is the TV cut-off line. The academy line represents the area which the film in the animation camera actually records. The inner, cut-off line represents the more limited image that is seen during broadcast due to the restrictions of television picture tubes. Since Saturday morning programming is obviously broadcast over picture tubes it is necessary to compose layouts to the TV cut-off line. Repeat: Artists should ALWAYS compose their layouts to the cut-off dimensions. However, they should also always complete their animation drawings out to the academy line of the field size being used, their BG drawings out to the 12 field (abbreviated 12F) academy line. (For example, in a scene that would use a 9F the figures should be drawn out beyond the 9F academy line while the BG should be drawn out at least to the l2F academy line).

With the field guide frame in mind, composing the layout should begin. It is difficult to list out hard and fast rules of composition composing a pleasing image is an art, and different artists can find different, workable solutions to the same problem. However, there are some basic concepts that can assist the layout artist, and some of these may be found in Appendix I.

One of the basic illusions of animation, as well as of any representational painting or drawing, is one of depth. Film presents a two dimensional image that gives the illusion of a third. Artists can go a long way towards creating this illusion believably by designing layouts with depth in mind. Often, there is too little effort spent on getting convincing depth into layouts. Figure 16 is typical. Two characters, centered in interior setting, play their action out against a wall that is parallel to the picture plane. The result is extremely flat. In Figure 17 one solution to the problem is suggested. The characters have been moved slightly off center, and the wall behind them has been angled: immediately there is a greater sense of depth. From these bare bones of a layout props can be added to make the interior any sort of room in the case of Figure 18, a warehouse. The placement of props, besides defining the environment in which the action takes place helps to accentuate the action. Meanwhile, the action itself is kept legible by being played against a clear spot of the BG. The gestures of the character on the left in
Figure18 should read clearly in this situation.

Set-ups that help break down the illusion of depth should avoided. Tangent destroy depth in drawings, as illustrated in Figure 19. Tangents also, however, can appear in fielding. In Figure 20 a character walks too low in the field, right along the TV cut-off line. This should be avoided. Instead, it is better to walk characters well within the cut—off area: usually a good “walk line” is the 8 field line, as illustrated in Figure 21.

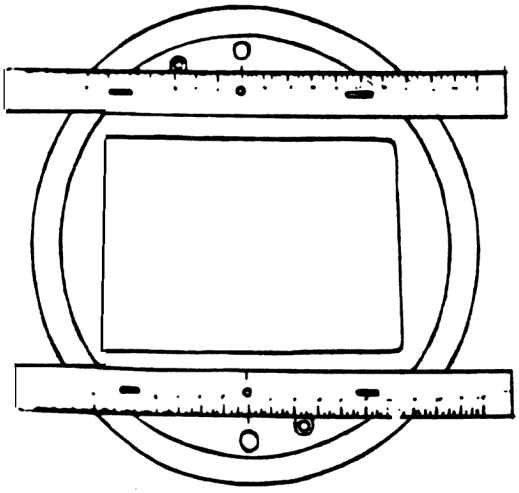


Figure 14 : animation disc

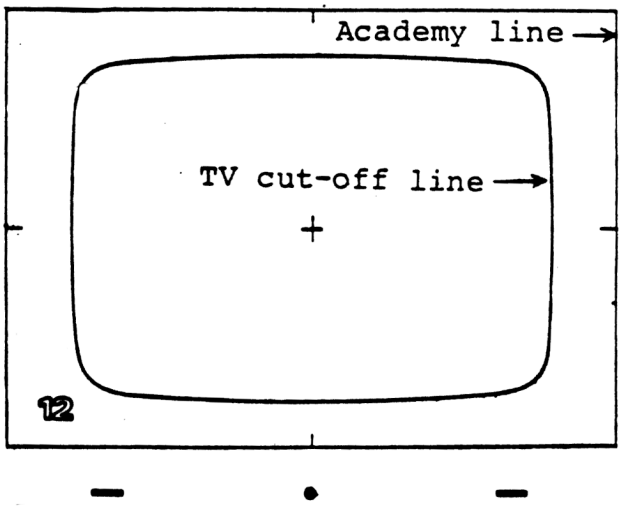


Figure 15: A filed guide

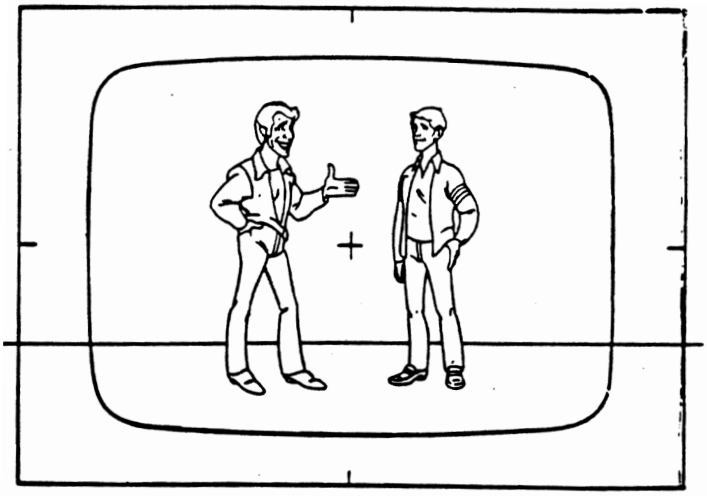


Figure 16: An uninteresting and flat set-up.

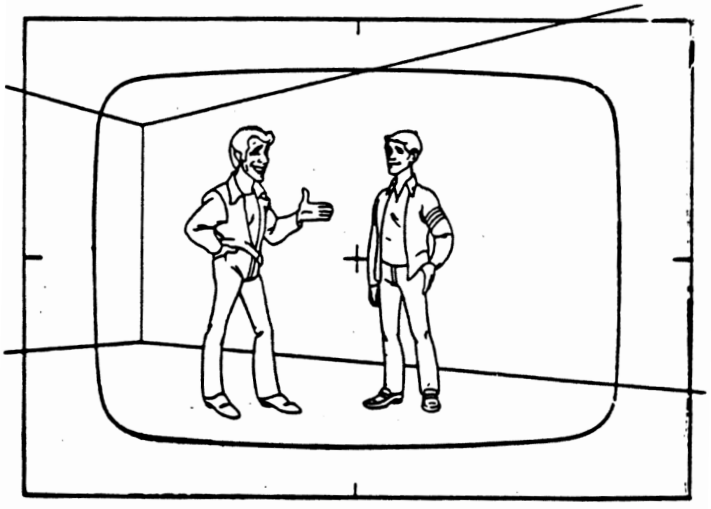


Figure 17: An angled floor and wall lines immediately give the environment a greater depth.

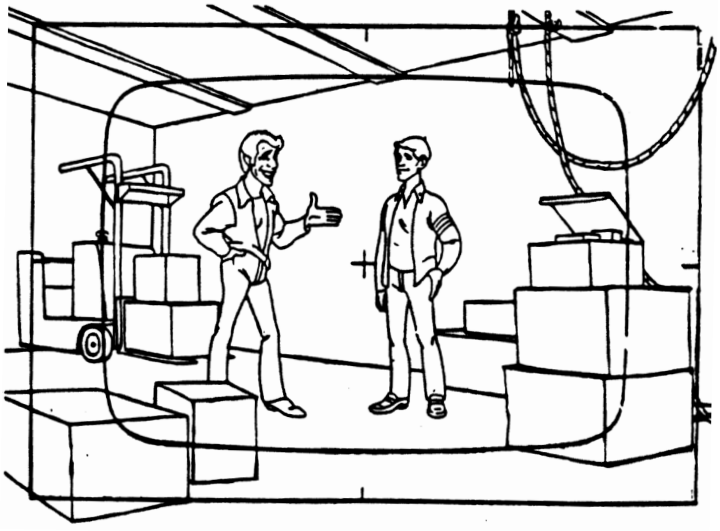
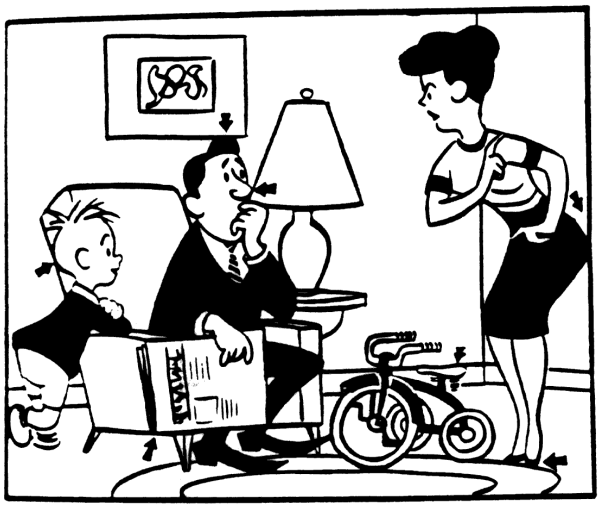


Figure 17: Props and details added to Figure 17 define the setting and help define the action.



Here the picture frame appears to rest on the man's head. His nose and finger seem to be attached to the lampshade, and the tangent formed by the chair bottom and the lower edge of the newspaper makes it difficult to tell where one form leaves off and the other begins. There are a dozen more of these "clinkers" than are indicated by the arrows.

Figure 19: Tangents in-a composition. They tend to destroy the illusion of depth.

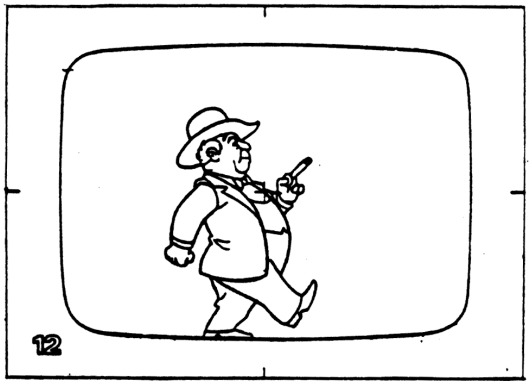


Figure 20

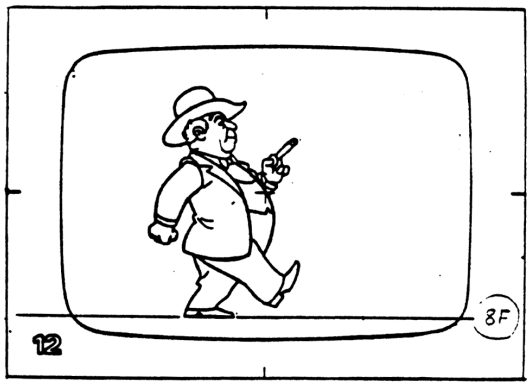


Figure 21

When composing a scene it is a good idea for the layout artist to think of the image being created as a single unit, con~posed of moving figures and a background. Quick, very rough, full—scale sketches of the figures and BG together usually help here. After a pleasing composition is attained, separation of the various elements can be done.

SEPARATING the elements of a scene is an important function o~ the layout artist. The difference between a background and animating figures is straightforward enough. These, obviously, must be drawn on separate sheets of paper. (Animator drawings are done on bottom pegs. Single field BGs also go on bottom pegs, but long, pan BGs go on top pegs.)

In some cases a figure may appear to move behind part of the BG. Separations may be used here. In this method the figures actually move behind (or on the camera platen, under) a object. The layout artist, on a separate sheet of paper, draws the object and identifies it as an overlay (OL). A BG 3;.it will then paint the OL on a clear cel which will physically overlay the animation. Overlays are always drawn . top pegs.

Another element, similar to an OL is the overlay-underlay, or OLUL. Like an OL it is painted by the BG Department, and like an OL it works over a level of animation. But an OLUL also works under a level of animation. The final element painted by BG artists is the underlay, or UL This element ALWAYS works under ALL animation (i.e. between the background and all animation). Underlays are used to alter the look of a background: either to disguise the BG for re-use or to show an alteration in the setting. For example, a UL of snow can be put over a Fall BG to indicate a seasonal change.) Underlays are also used at times to represent large objects, behind which a background will pan.

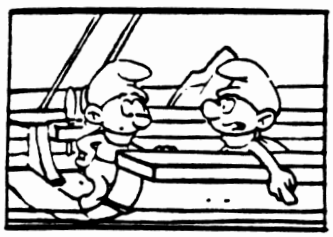
Overlays (OLs), overlay-under lays (OLULs), and underlays ULS all work on top pegs and all are painted by the BG Department. (On the next page a chart appears which gives a delineation of all of these elements more graphically.)

REGISTRATION

While OLs and OLULs physically overlay animation, registration is a technique that gives the illusion that characters are moving behind BG objects: it requires no separations. In this technique a portion of an animating figure is exactly aligned with a line on the BG (see Figure 22). This method requires a crisp red line to be drawn by the layout artist on BOTH the animation and background drawings. This allows the Animation and Background Departments to work independently knowing that their two products will match perfectly when put together under the camera.

Registration, however, has limited use. The registration line must be simple --- it cannot be complicated. Also, the technique should not be used for animation that can be cycled: e.g. a character walking through a doorway. In both of these cases overlays should be used instead.

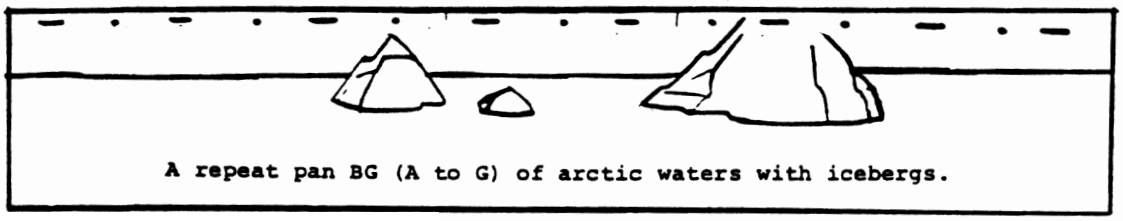
In sketching the animated elements of a scene several things should be kept in mind. First, the groupings, if there happens to be more than one figure, should be interestingly arranged. Often the storyboard artist composes his/her panels quick]., and the figure groupings are less than ideal. Layout artists should find an interesting arrangement. If the rough combined figure/BG sketches have been done successfully this should already be accomplished. Second, the characters should be posed according to the mood of the scene. Often a strict repetition of the model sheet is inappropriate. Layout artists should be sure the poses they have created fit the intent of the scene. And third, the posing and positioning of the characters must allow them to move legibly and naturally in their setting. The action in a scene should not be cramped.



This is a sample scene as it would appear on the screen. Two smurfs sail a boat through arctic waters laden with icebergs. Below is one possible way to execute the separations.

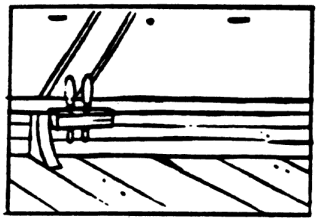
SEPARATIONS

Pan BG
TOP PEGS



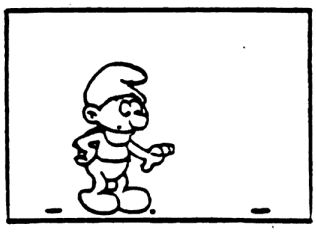
A repeat pan BG (A to G) of arctic waters with icebergs.

Underlay
TOP PEGS



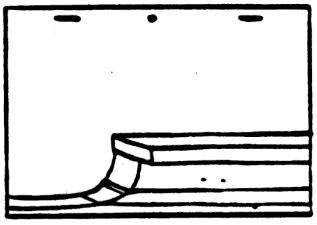
An underlay (UL). This level, representing part of the smurf boat, works under ALL animation. The BG pans behind it.

Animation
BOTTOM PEGS



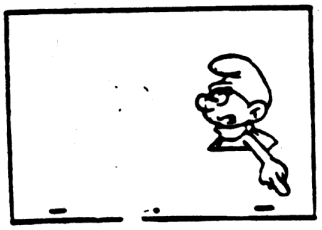
Animation. One of the smurf figures that will animate.

Overlay-underlay
TOP PEGS



An overlay-under;ay (OLUL). This level, which represents the foreground part of the smurf boat, works over one smurf figure, but under another.

Animation
BOTTOM PEGS



Animation. Another smurf figure. This one works over the foreground level of the boat, registering to the OLUL.

Note: An overlay of foreground ice could be employed in this scene, but not without some mechanical comsequences. An overlay, which would normally go on top pegs, would have to go on botttom pegs in this scnes and other elements would have to be shifted as well. So to maintain a certain degree of simplicity and not get into any high;y specialized, “rule-bending” set-ups, an overlay was not employed in this example.

Some time should be spent on the establishing scene of a section. It should be well thought out and interesting to look at. Subsequent scenes can then be executed with greater speed. Continuity should be kept in mind on those scenes, with the layout artist being sure to maintain similar positioning of characters in relation to one another from scene to scene. Background designs for scenes after the establishing shot need not be totally, scientifically accurate in terms of the exact positioning of BG props, but they should be believably close. Viewers will be concentrating on character action more than backgrounds, so there is always some lee-way to accomodate good design.

It should be kept in mind while laying out a sequence that layout artists should constantly refer to three separate sources of information on the storyboard: (1) the panel drawn by the board artist, (2) the script beneath the panel, executed by the writer, and (3) the slugging notes, timed out by the director. A fourth, and also very important source is the previous layout --- what the layout artist has done in preceding scenes has a definite bearing on subsequent storyboard panels. Layout artists should NEVER base their work solely on the drawn storyboard panel.

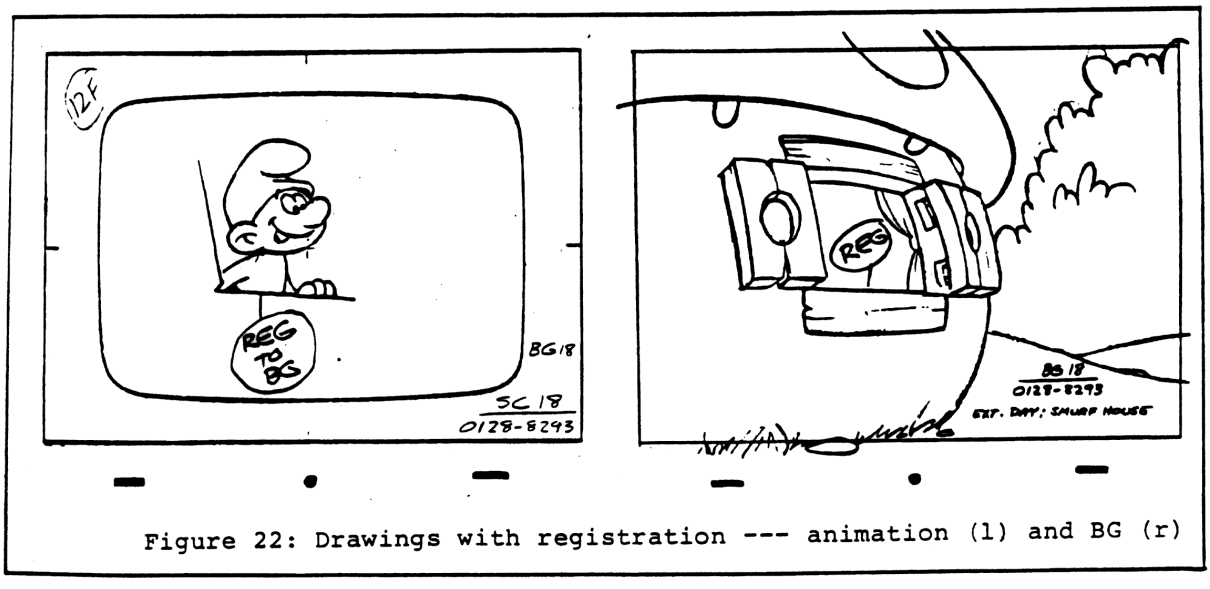


Figure 22: Drawings with registration --- animation (l) and BG (r)

Figure 22A:
The registering elements from the previous page (Figure 22) combined.

After layouts have been completed and turned in to a Key Layout artist, they are processed. A scene list (see Figure 23) is prepared, and the animation and BG drawings are separated. The BGs are copied, for animators' reference, which is why they MUST be executed in black pencil --- blue being invisible to the eye of the xerox machine. In certain cases (i.e. specials and layouts shipped to other studios for animation) the animation drawings, too, are xeroxed. It is therefore a good idea to use black pencil for animation drawings as well. After the layouts are processed, they proceed, in separate pieces, to the Animation and Background Departments. Artists in each of these departments need some qualities and information in layouts to allow them to do their jobs well.

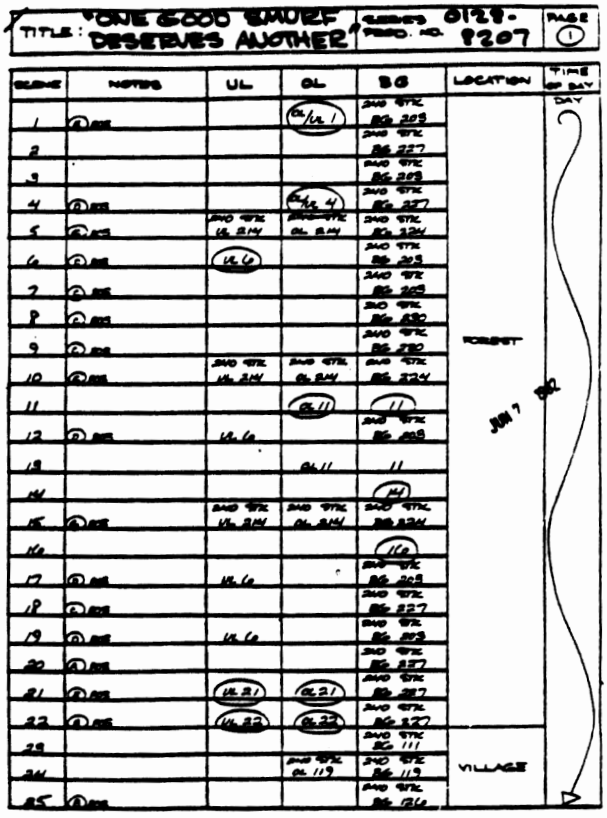


Figure 23:
A scene list. The circled elements indicate those elements' first appearance in a picture.

ANIMATION DRAWING REQUIREMENTS

When animators pick up a section of work they receive

(1) exposure sheets (see Figure 25 on the next page) ,
(2) a storyboard,
(3) a cassette recording of the soundtrack, and
(4) layouts of the scenes they are to animate.

Also, they have access to registered xeroxes of the BG layouts. The best thing a layout artist can provide an animator is a good, comprehensive figure drawing with a solid attitude and pose. A good point for layout artists to remember when posing characters is the “line of action”. In Figure 24 page of **Preston Blair’s Animation** * illustrated, in which the author discusses the line of action. After a good line of action has been obtained the figure can be constructed over it, using the character’s basic geometric shapes.

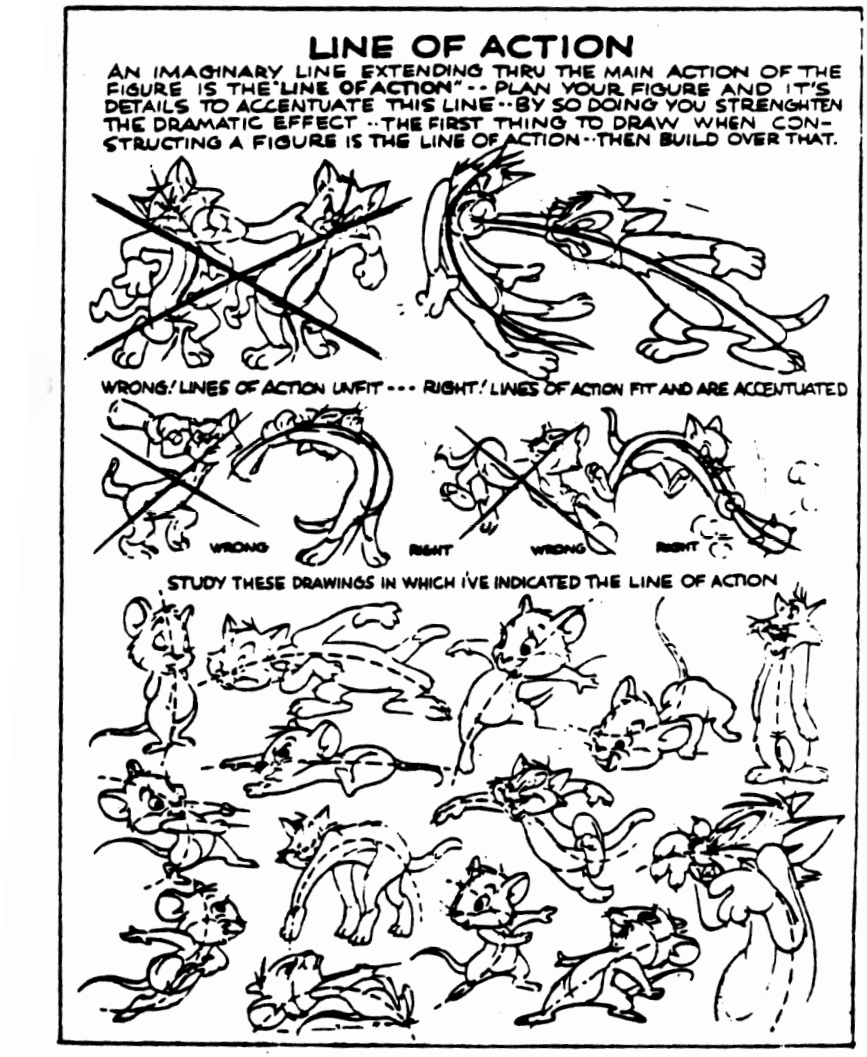


Figure 24:
Page 5 from
Preston Blair’s Animation

*This book, and Blair’s **How to Animate Film Cartoons** are invaluable to artists in the animation field. Each layout artist should have copies of both books.

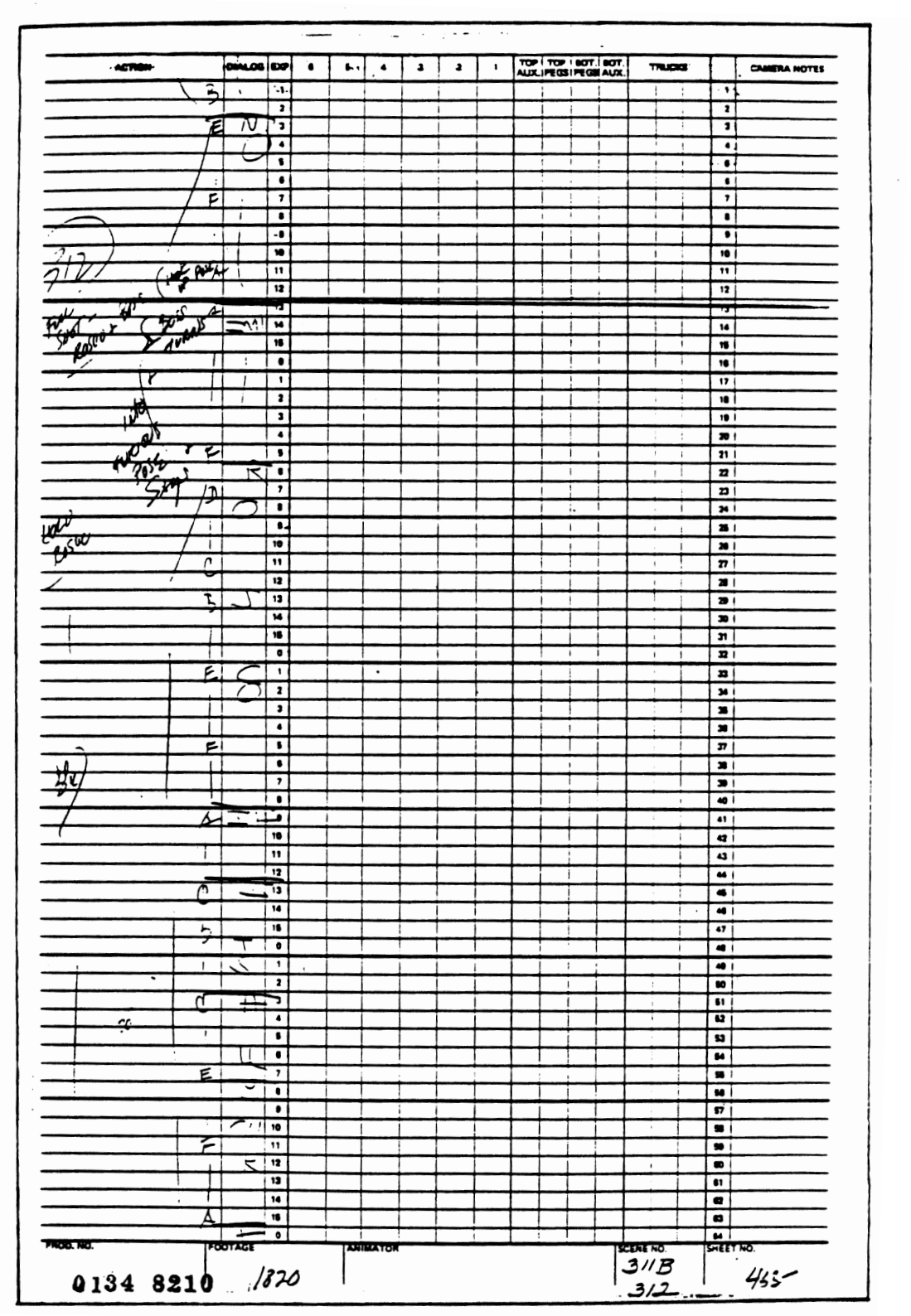


Figure 25: A typical H-B exposure sheet, as it is when an animator picks it up. This sheet delineates four feet, or two and two thirds seconds, of animation.

Proportions are all-important here. If the layout artist has properly analyzed the character models into their basic shapes it should not be too difficult to maintain the proper proportions. Also, care should be taken to insure that all characters are their proper heights: they must relate correctly to each other.

The animation layouts need not be clean, polished drawings. Figure 26 shows three fine animation layouts for a scene. The characters are rough, but the proportions, attitudes and poses are strong. Animators find it much more inspiring to work over drawings such as these than poorly posed and proportioned drawings that are “wire line” clean.

Animators, and particularly their assistants, appreciate Layout’s use of the established “size” system. Most model sheets include characters set up in standard, waist-shot, close-up, and long shot sizes. It would be helpful for Layout artists to use these sizes whenever possible.

The staging of conversing characters is important. Characters should not be posed in a way that would necessitate profile dialogue. (It is difficult for animators to make separations if a character is so posed, and profile dialogue usually looks terrible on the screen.) Also, it is necessary to keep good eye direction on the characters: they should be looking **at** each other or **at** what they are talking about.

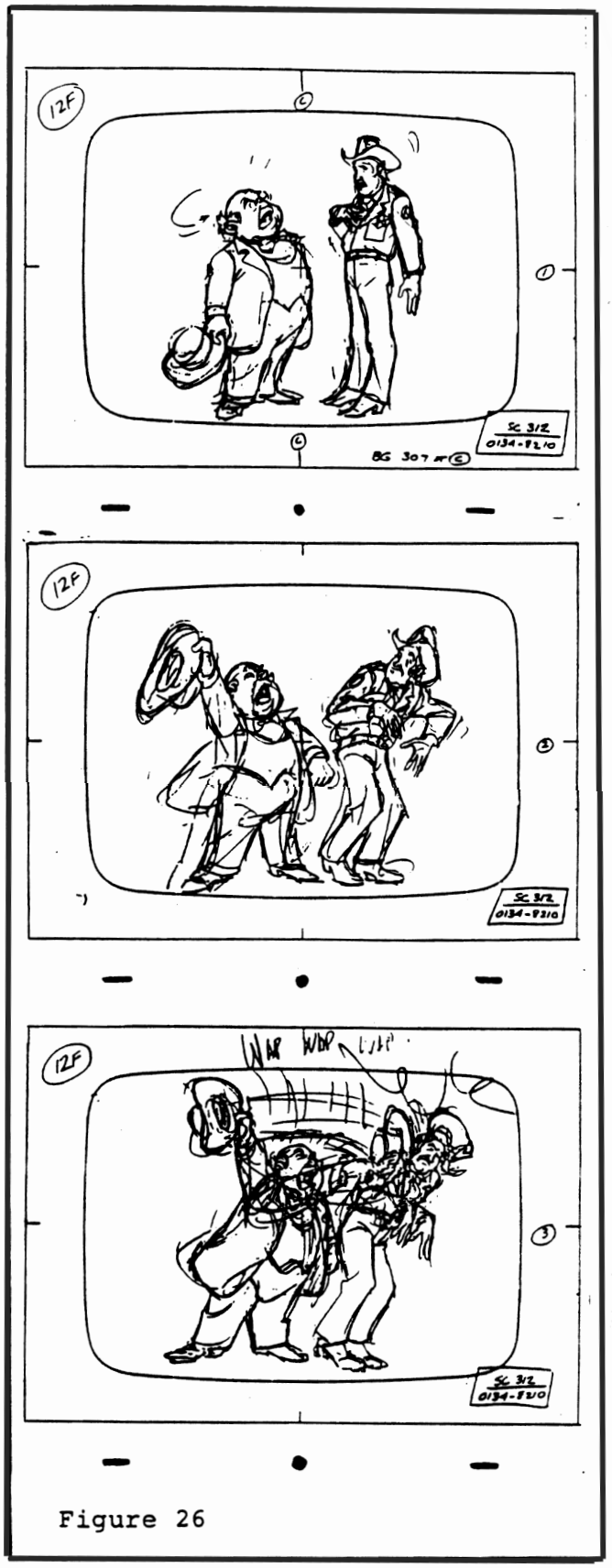


Figure 26

HELD CELS

Held cels are objects or props which will animate in a later scene , but for whatever reason are still in the scene in which they are “held”. Also, to maintain a consistent “look” certain props --- such as cars --- are invariably held cels. Held cels are xeroxed onto cels and painted by the Ink-and-Paint Department, NOT the BG Department. They should be properly separated as necessary, and they should be **cleanly** drawn --- with NO shading. Held cels are really the only pieces of artwork created in Layout that eventually make it to the screen without other artists working over them.

SAME AS SCENES

“Same as” (S.A.) or “works out of” (W/O) scenes are those scenes based on previous material. Since there are usually more animators working on a picture than layout artists, it is quite possible that different animators will get S.A. or W/O scenes to animate. Therefore, it is necessary for layout artists to xerox ANY re-used animation (not BG) material and place it in the scene folder.

CUTTING IN

Many times it is possible, simply by using a smaller field, to re-use animation for subsequent scenes. (See Figure 27) While this practice is certainly economical it has its limitations. In Figure 28 the two situations illustrate incorrect uses of cutting in, and their more proper solutions. Certainly layout artists should use the concept of cutting in --- but with care.

REGISTRATION

In terms of registration, animators need a clean red line marked “REG TO BG” to properly register their animation to backgrounds, as in Figure 22.

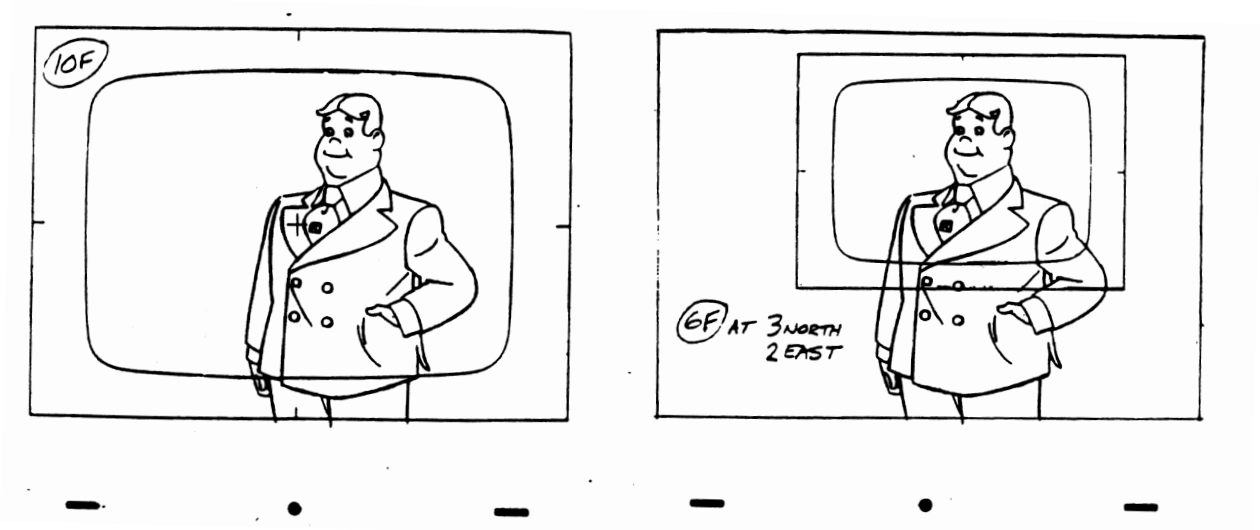


Figure 27: An example of acceptable “cutting in”.

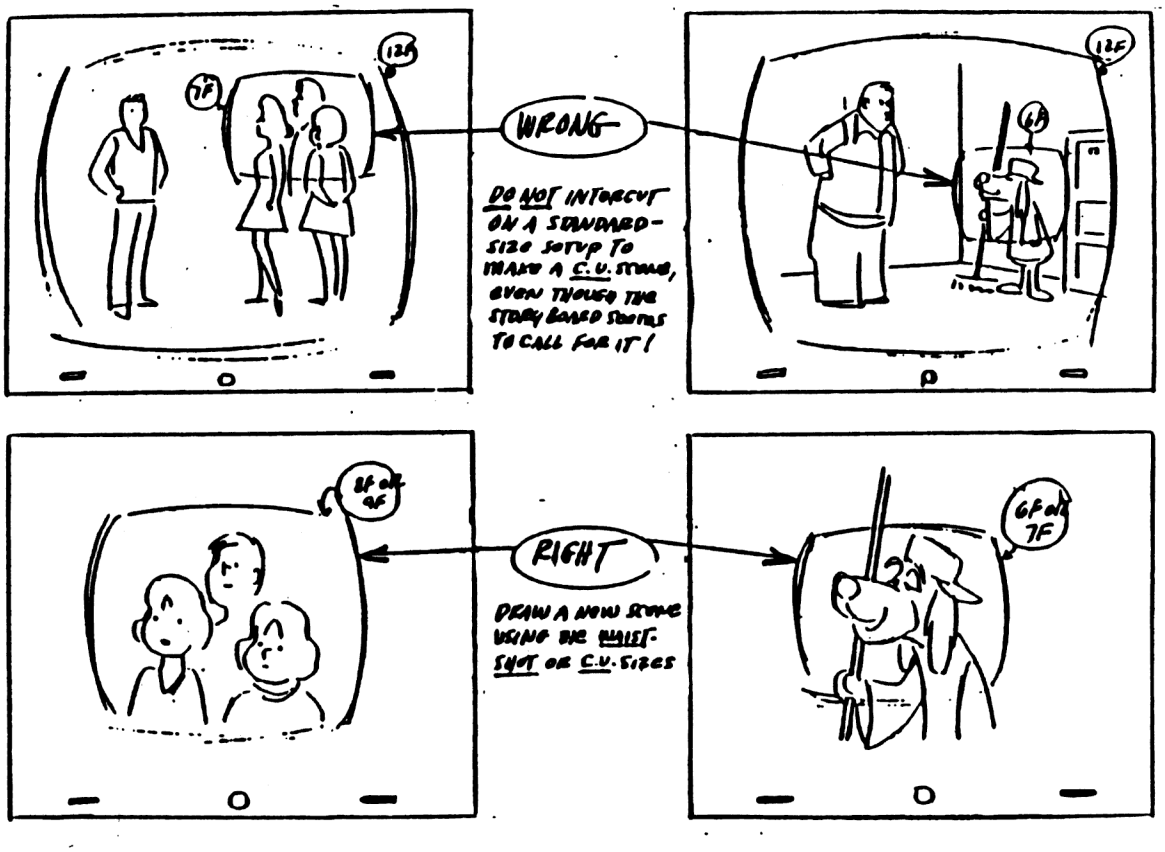


Figure 28: Incorrect uses of “cutting in” and their solutions.

BACKGROUND DRAWING REQUIREMENTS

Background painters, too, look to certain qualities in layout drawings which help them perform their jobs.

Besides being well designed, BG layouts MUST display a workable perspective. Whether the perspective is one point, two point, exaggerated, cheated, realistic, or cartoony, it MUST work within the framework of the series it is being designed for. Background painters cannot take time to correct drawings with poor perspective. For some hints on cartoon perspective see Appendix II. Other information is available from the library.

It is important for the background painter to know where, when, and what the layout drawing represents. A brief note suffices here (e.g. “English countryside / Day”, or “Castle Hallway / Night”, etc.). Also, if the BG layout is a detail of an earlier establishing BG the layout artist should note it (e.g. “Match to BG 19”), for this helps the painter maintain a consistency in his/her work. And, as in the case of any notes, they should be written in black within the 12F academy line.

Usually, it is neither necessary nor advisable to draw the field guide cut-off on the BG layout --- all BGs are painted out to a full 12F anyway. The exception is when the BG is to be a tilt field of any kind (see pp. 26-28 for more on tilt field set-ups). In this case a tracing of the field should be made on the BG layout in blue. If a layout artist has designed a background to work at a 25° clockwise (CW) tilt, the painter must know that in order to keep verticals (e.g. trees) tilted at the proper angle. In a properly executed layout the verticals should be tilted correctly anyway, but a tracing of the field guide is always helpful. (And again, the degree of the tilt should be distinctly noted on the layouts.)

The style of a layout BG drawing should reflect the style of its series. Flintstone houses should look like they belong in Bedrock, and Smurf houses should look like they belong in the Smurf Forest. In every case it is the specific shapes that make the houses (or whatever) unique and give a series a particular look. Layout artists should familiarize themselves with background shapes just as they learned the volumes of the characters.

Since backgrounds are in essence stages upon which the animated characters act, the BG painters should know how each scene is choreographed. A very quick blue sketch of the figures on the BG is of great value. (See Figure 29.) Such a sketch (1) tells the painter the precise scale of the BG layout, and (2) makes the painter aware of the area in which action takes place --- an area he or she can then keep both simply painted and free of obstructing props.

Registration. To indicate an area of registration it is necessary, as mentioned earlier, to mark the animation mdrawing with a crisp red line. But it is equally necessary to mark a similar line on the BG, as indicated in Figure 22. It is important to note that use of registration lines also requires that BG layouts are drawn properly. In Figure 30 a door frame has been drawn improperly: it is neither in the Smurf style nor correct according to the contour of the house. However, the background painter cannot totally correct the frame (as it should appear in Figure (31) because animation is already underway to the registration line. Therefore, it is imperative that registration lines be accurate, both in matching the animation and in fitting the style of the show.

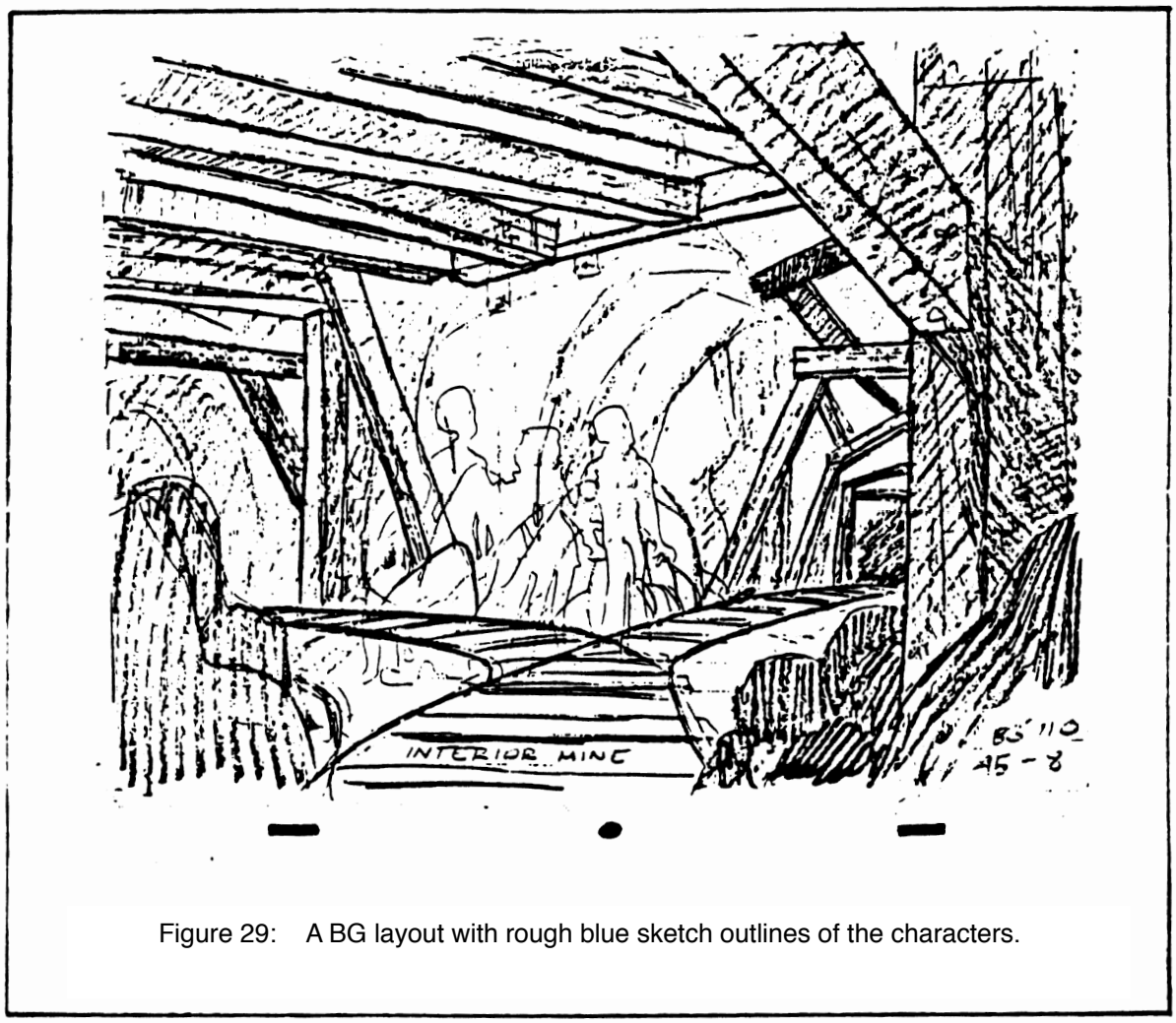


Figure 29: A BG layout with rough blue sketch outlines of the characters.

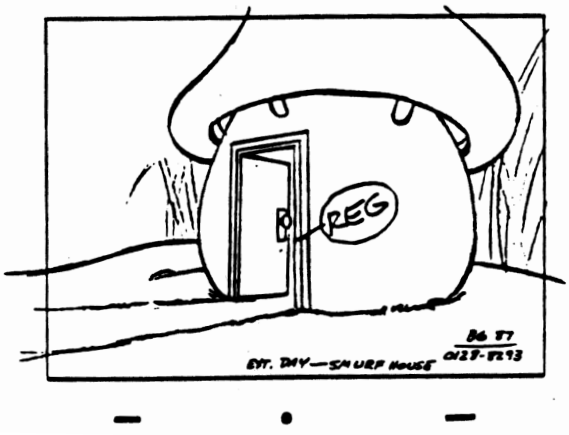


Figure 30: An improperly drawn door that is difficult to repair.

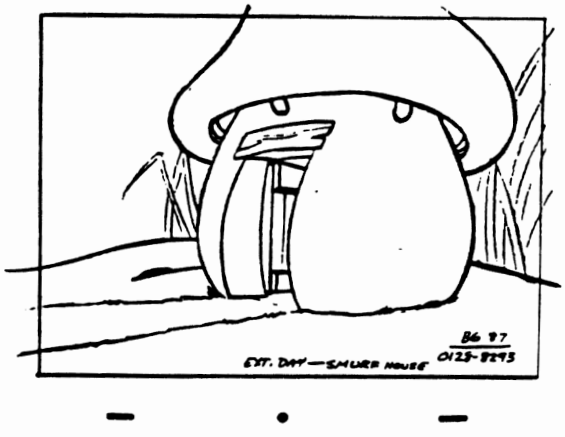
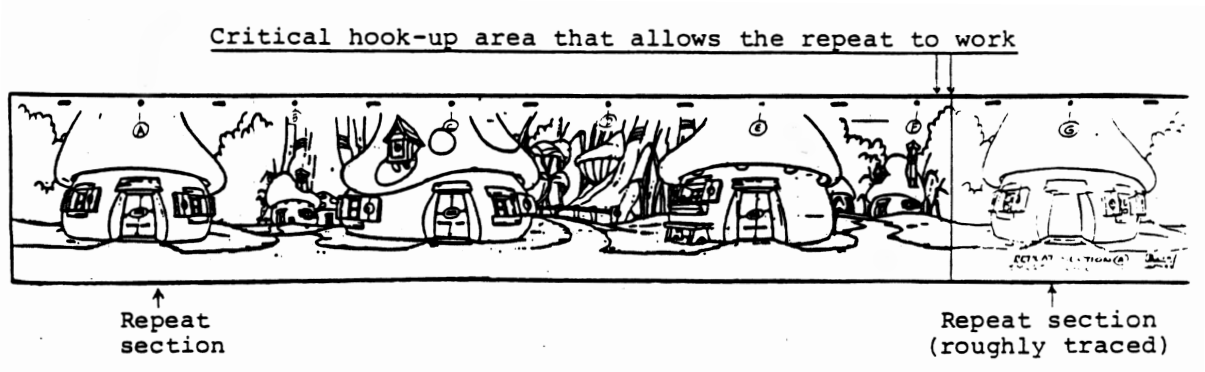


Figure 31: The proper drawn door design for Figure 30.

In the area of pan backgrounds, a number of points should be kept in mind. First, in the case of repeat pans, the length should always be A to G, or five fields. (A to D, or 3 field, repeat pans are hard to make successfully hook up, and they appear quite uninteresting on the screen.) The repeat fields (at A and G, the first and fifth fields) are painted identically. Hence, the simpler the design in those areas, the easier it is for the painter to make them match. Second, thought should be given to make sure that the lead-in to the hook up section is correct. It is a good idea when the A section of a repeat pan has been designed, to xerox it and roughly trace it at the G position. (See Figure 32.) This makes it easier to draw a proper hook up at F position. And third, layout artists should use some common sense in designing repeat pans. Putting the sun or moon in the sky or labelling a storefront “Harvey’s Diner” is foolish: the repetition of such objects or signs when filmed emphasizes the basic cheat involved in a repeat pan. It is a good idea NOT to put the sun, moon, or lettering in repeat pan backgrounds.

One final note on BG layout paperwork. Often layout artists will design a daytime background and number it, say 17. Later, perhaps at SC 53, the same design can be used, but it is now night-time. Too often the layout artist will call for BG 17 with a note saying it should now be night. Instead, a xerox of BG 17 should be made, the xerox re-numbered as 53, and an indication that it is now to be painted for night should be made.

Figure 32: A five field (A to G) repeat pan



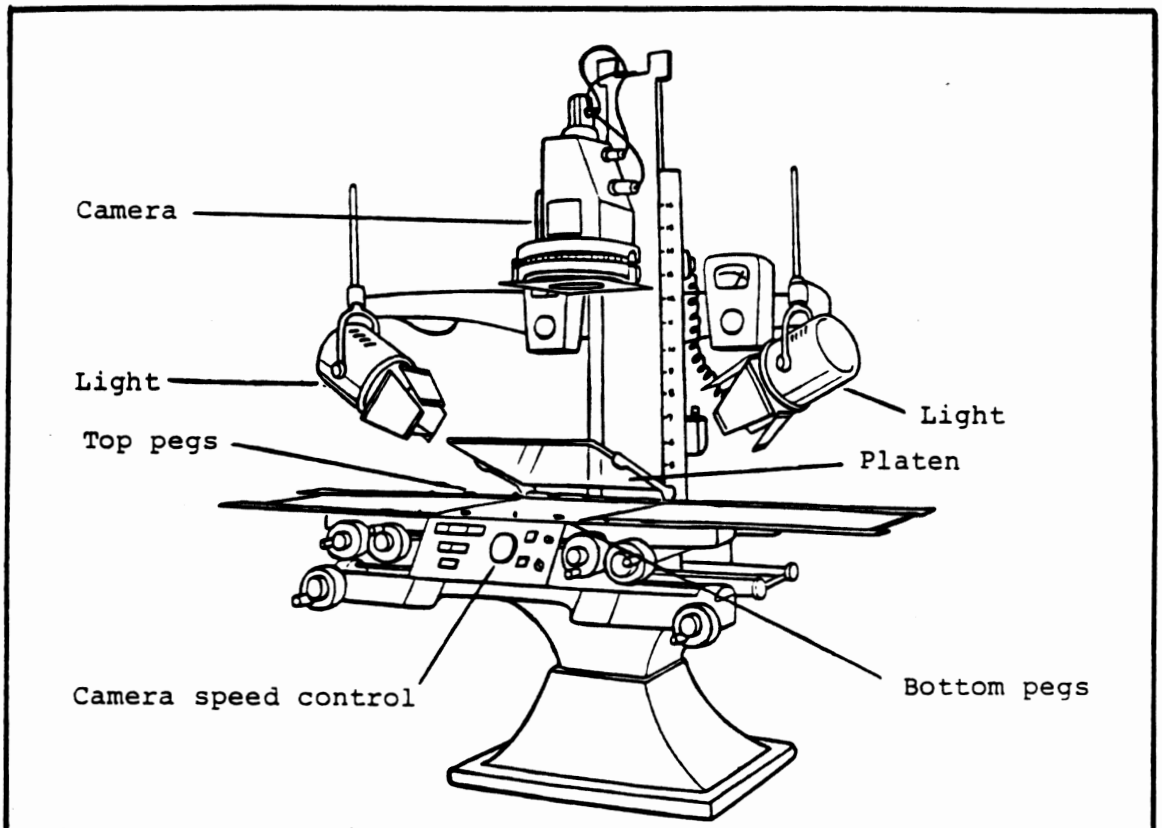


Figure 33: A generalized diagram of an H-B animation camera

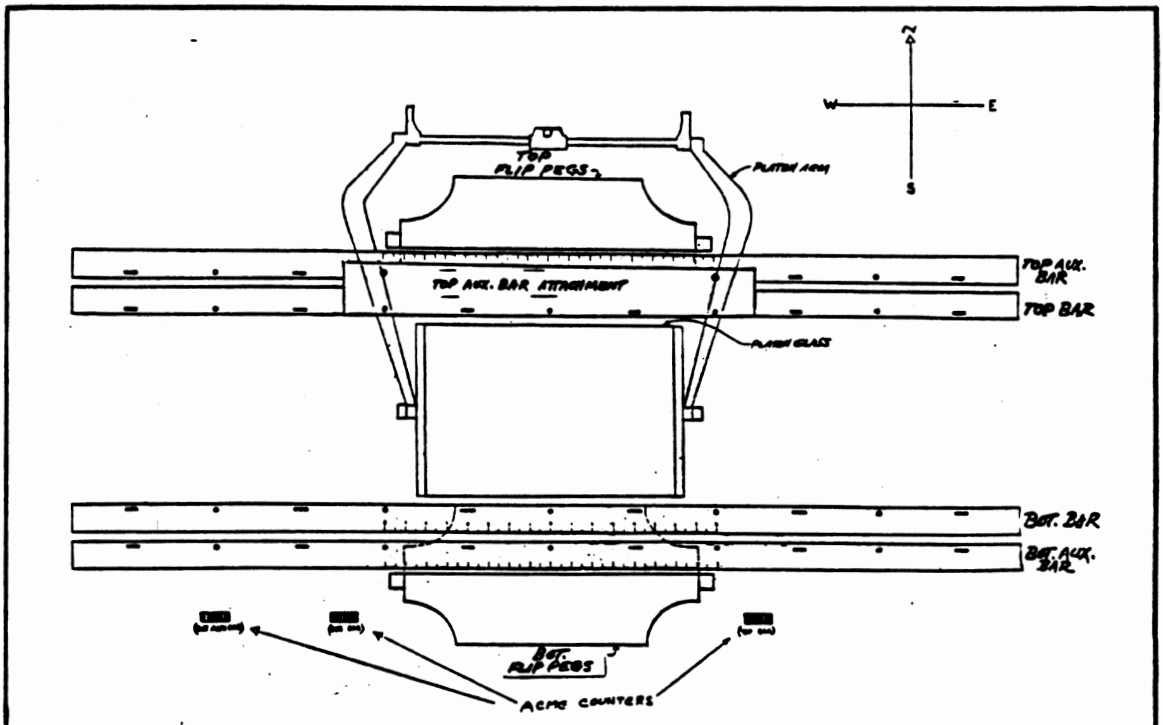


Figure 34: The camera table.

MECHANICAL REQUIREMENTS AND NOTATIONS

A layout artist can be the world's greatest draughtsman and designer, but if his (her) layouts do not reflect an understanding of the animation camera (see Figures 33 and 34) and mechanics, his (her) drawings are worthless. Several aspects of mechanics are important to mention here.

SEPARATIONS. These (discussed earlier on pp. 13-15) should be done carefully and with some thought. The only further point that should be made here is that, above the BG, animators have only 6 cel levels on which to work. The separations of animated figures is the responsibility of the animator, but layout artists should keep the 6 cel level figure in mind when planning their scenes.

FIELDING. As mentioned earlier, layout artists must always compose their layouts to the TV cut-off line the area between the cut-off and academy lines being very easily lost during TV broadcast. But fielding has other restrictions as well.

Due to the nature of the xerox line, very small fields (since they in effect blow-up the animation image) produce overly granular lines. An aesthetic limit was therefore established: no field smaller than 6F should be used on animation. Layout artists would do well to burn their 5 and 4 fields.

Consideration in fielding must also be given to the Ink-and-Paint Department. Close-ups can. easily be drawn on a 6F , 7F , or 8F . Larger fields (and thus larger drawings) give inkers a larger area to paint, and thus slow down their production.

There are also limitations when it comes to shifting fields North, South, East, or West. The grid chart illustrated in Figure 35 can help emphasize those limitations. In shifting a field an any direction (for a truck, cutting in, etc.) the maximum allowable shift can easily be determined. The academy line of the field being used can never be positioned beyond the outer border of the grid-guide. For example, a 7F can never be shifted more than 5 units in any one direction: North, South, East, or West. A l2F cannot be shifted at all.

TILT FIELDS. These are angled set-ups which allow either (1) the illusion of characters moving through a scene on a line that is not parallel to the bottom of the picture frame, or (2) the illusion of movement up or down in altitude. (See Figure 36.) Either illusion is created by calling for the camera to be rotated, either clockwise (CW) or counterclockwise (CCW), to match up to an angled field guide on the layout. Tilt field mechanics are really rather simple, but layout artists must think carefully and design them properly for them to work convincingly on thescreen. Three pointers might be of value here...

1 Vertical set-ups (900 tilt fields) should always call for a counterclockise (CCW) rotation of the camera. Due to the way in which the animation camera is built, a 90° clockwise rotation is very difficult. Layout artists should understand that to simulate a counterclockwise tilt of the camera they should rotate their animation disc clockwise For example, once a piece of pan paper has been properly positioned (on top pegs) on the disc, the artist would rotate his/her disc clockwise to view the set-up in its proper visual orientation. The peg holes in a vertical set-up should always be to the right.

2 A common error in fielding arises in tilt field scenes. Figure 37 is a maximum tilt field guide. For example, a 1OF can be, at most, tilted 90° clockwise or counter-clockwise, an 8F 25°. Note, however, that theseare maximums An 8F does not always have to be tilted at 25°. Often, layout artists will design a set-up for 10F at a 9° tilt and later re-use the set-up at an 8F 25° tilt. That is impossible. The verticals in a tilt field BG are fixed and obviously cannot be accurate for both, in this case, 9° and 25°. Here an 8F should also be tilted at 9°. Layout artists should be aware of proper techniques of fielding tilt set-ups. The guide illustrated in Figure 38 (a protractor) can be very useful in this regard. This device is more versatile than the maximum tilt guide, and it can be used to check any tilt set-ups.

3 Again, it should be emphasized that tilt fields should be plainly marked on the BG to assist the painter.

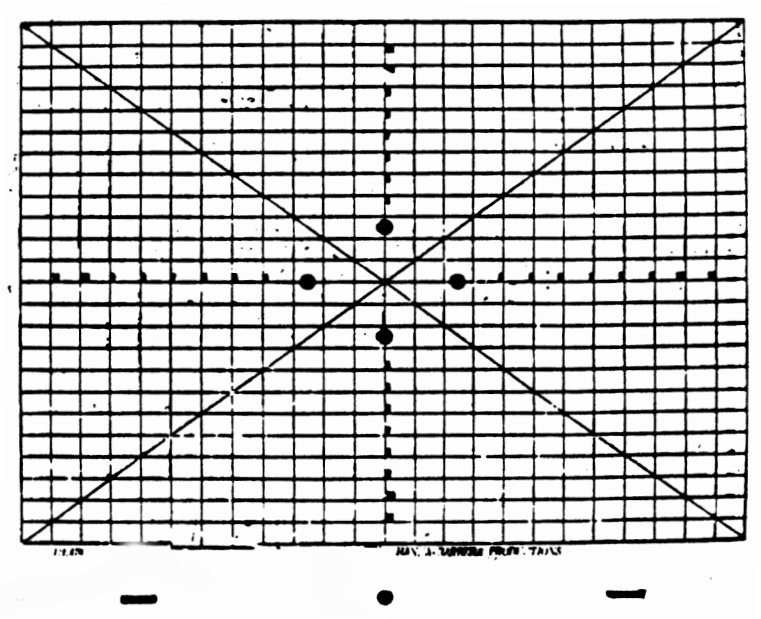


Figure 35: A grid chart to determine field guide shifts.

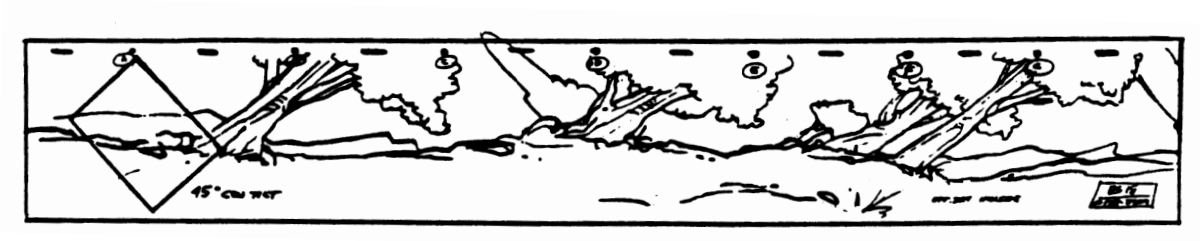


Figure 36: A tilt field background, in this case, a pan.

PAN BACKGROUNDS. The mechanics of the pan BG is another area that Layout should thoroughly understand.

To facilitate their movement through the camera platen, pan BGs are usually put on top pegs. This allows the camera operator to change the cels of animation (which are on bottom pegs) and shift the position of a BG independently. In some cases, however, it is necessary for. pan BGs to shift to the bottom pegs. For example, if a character is seated in the A section of a pan EG and the camera pans to another seated figure at the C position, the BG should shift to bottom pegs. It is extremely difficult for camera operators to match pans of top and bottom pegs exactly, and as a result the seated figureswould appear to “jitter”. However, if both the animation and background are positioned on bottom pegs, they can pan smoothly together. (When panning characters with a BG it is best to make the start and stop positions of the move 8” (or a multiple of 8”) apart. In other words, from one peg hole to another. This facilitates both the computation of the camera moves and the use of commonly punched animation cels.)

A word should also be said about pans and the “strobing effect”. In certain cases repetitive vertical images, such as fence posts, can appear to “back up” during pan moves. This is caused by an overly regular, close placement of the verticals. Layout artists should be aware of this effect and avoid designs in their BGs that produce it. Staggering the verticals or angling one occasionally should help.

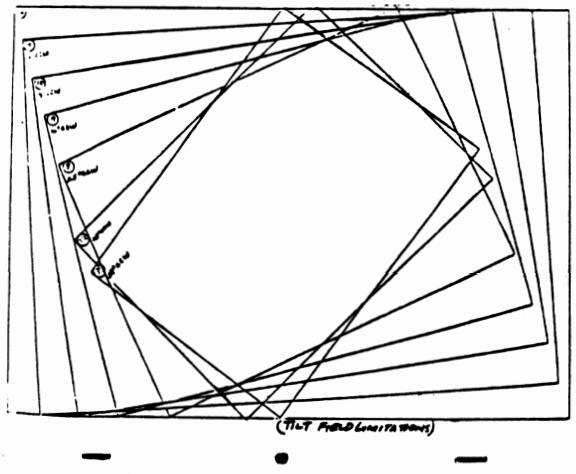


Figure 37: A maximum tilt field guide

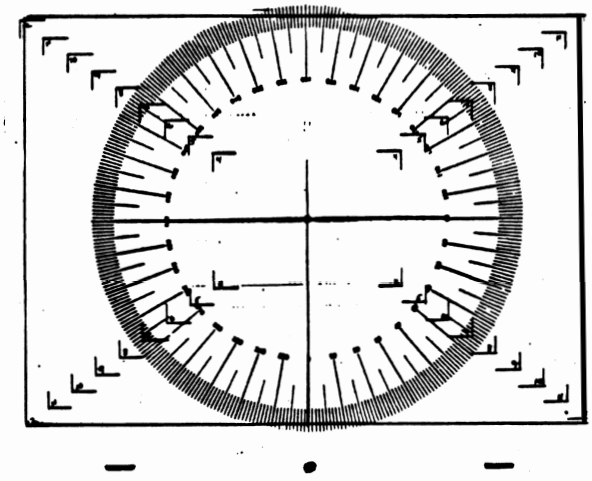


Figure 38: A protractor

Pan backgrounds are also often used in still setups. In this case the layout artist must pick the specific spot on the BG he/she intends to use and so note it on the layout's animation drawing. (e.g. "BG 17 at E"). It is a good idea to avoid calling for repeat BGs to be positioned at A or G for a still shot. As mentioned earlier, these areas are painted simply, to allow for their duplication, and still shots usually do not look good on them.

At times, the position desired on a pan BG is not directly at a peg mark: it might be preferable to use a spot on the BG between pegs. In this case the position desired should be requested accurately. On the camera stand the CENTER is ALWAYS FIXED. The peg bars move. Hence, in shifting a BG the camera operator will first position the BG on a specific peg and then shift it left or right of center. The amount the BG is shifted for a particular scene should be indicated --- e.g. "BG 17 at E 3" right of center", or, in abbreviation, "BG 17 at E 3" ROC".

A layout artist should NEVER call for a BG at A position right of center. If a BG is shifted right of center when at A, the camera stand is revealed to the camera: it is similar to calling for a 7F at 6 West. It cannot be done.

And finally, on folding pans. The method to be used is illustrated in Figure 39. Layout artists should use only this method --- for it makes life easier for checkers and xerox people alike.

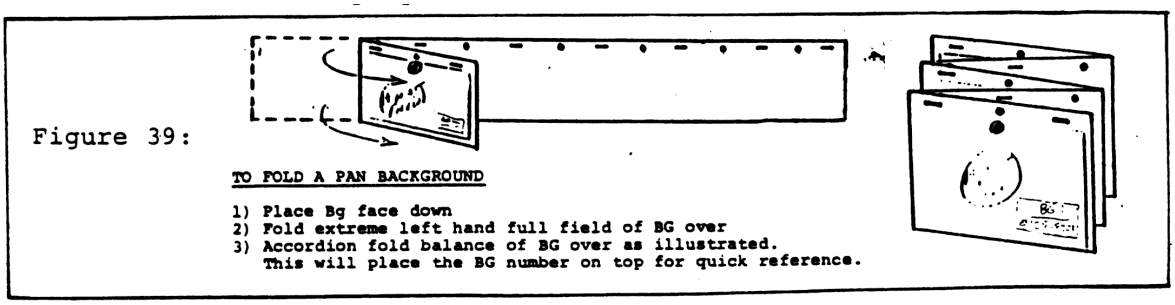


Figure 39:

CAMERA MOVES. Trucks, or camera zooms, should be indicated by the layout artist on the animation sheet of the layout. Using the grid illustrated in Figure 35 the artist should draw both the start and stop field guides on the animation sheet and indicate the direction of the truck with arrows as indicated in Figure 40. The usual limits of fielding, of course, apply in calculating any trucks.

Other camera moves should simply be called for by the layout artist and not calculated. Camera shakes should be indicated as in Figure 41. The camera operator has more knowledge of how to tilt the fields to create the desired visual effect.

Similarly, slight up and down movements of the camera for example, to simulate a car bouncing down a bumpy road should be called for as in Figure 42. The camera operator will calculate the necessary movements on the North/South pegs.

NOTATIONS. Once scenes leave the hands of layout artists they go through several rounds of checking, either as layouts (checked by Key Layout artists) or as finished animation (checked by animation and final checkers.). Since the scenes go through so many hands it is important that the layout artist's notes are legible and accurate.

Registration lines,as mentioned earlier, should b' done cleanly in red on both animation and background layouts.

Field guides should be traced in 1ue on the animation layouts. The size of that field should then be written, in black, somewhere on the scene within the 12F academy line. They are unnecessary on BG layouts unless there is a special reason --- particularly to indicate a tilt field.

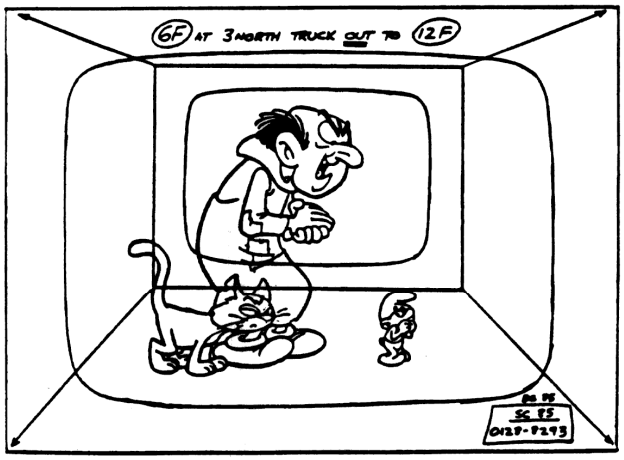


Figure 40: Indication of a camera truck

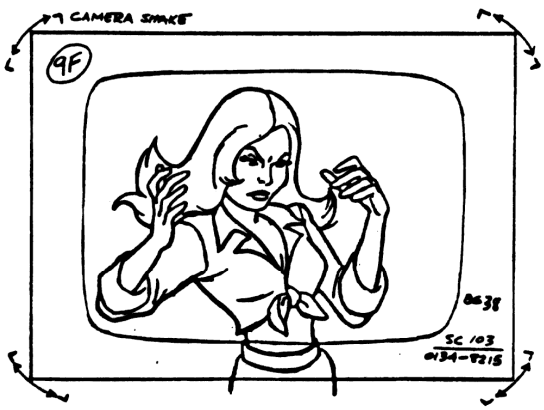


Figure 41: Indication of a camera shake

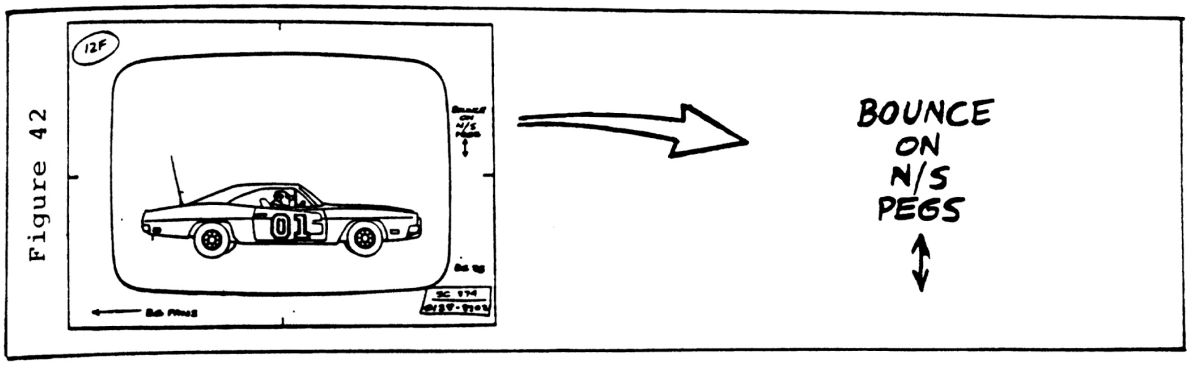


Figure 42

Identification of different elements in a scene should be clear and complete. On the first animation drawing of a scene, all of the elements of that scene should be listed.
For example:

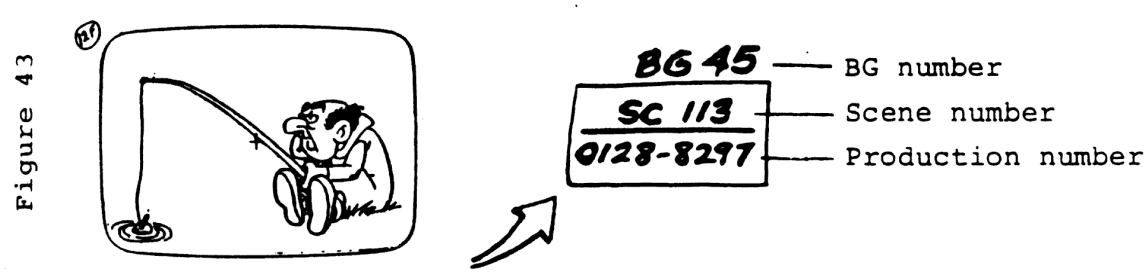


Figure 43

If there are more than one animation drawings, subsequent drawings should be numbered 1 , 2 , etc. (as illustrated in Figure 26). It is only necessary on these drawings to indicate the scene number and production.

Backgrounds are numbered according to the number of the scene in which they first appear. Their production number should appear immediately below. For example..

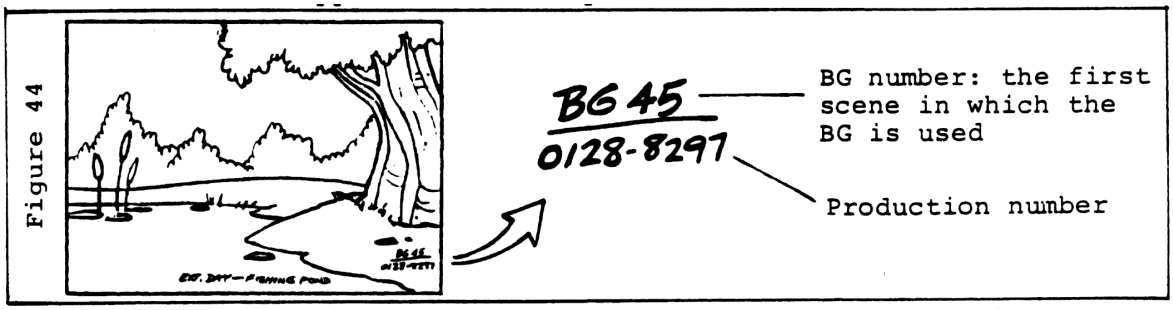


Figure 44

These identifying numbers on both animation and background drawings --- should always be placed in the lower right corner of the sheet of paper --- and ALWAYS within the 12F academy line. Information outside the academy line is not guaranteed to pick up when xeroxed.

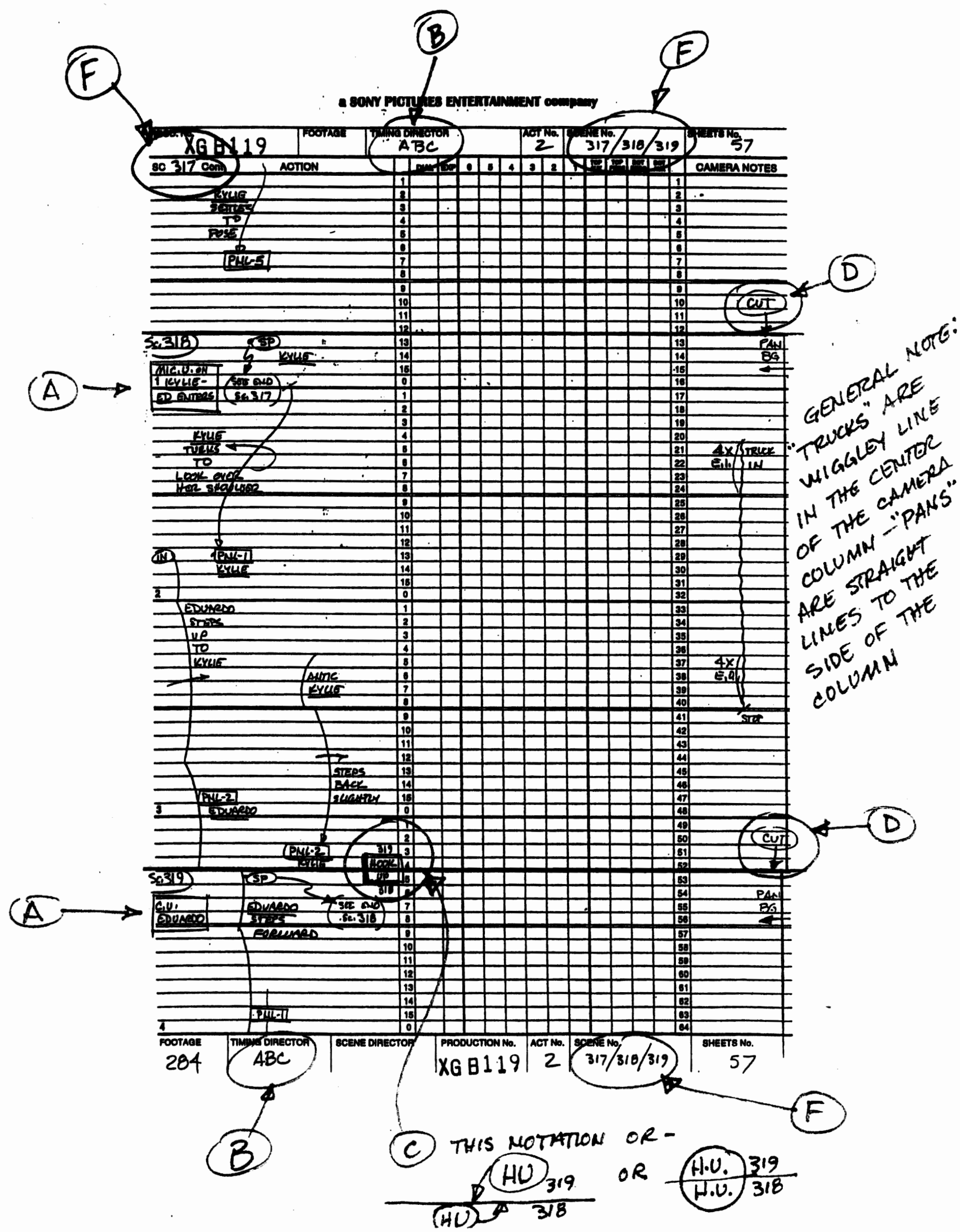
If a scene uses fog, rain, or other such effects (abbreviated FX) it is only necessary to write “FOG FX” (or whatever) near the scene number. Checkers will then select the appropriate effect and keep it consistent throughout the picture.

FINAL NOTE

I hope that the information in this booklet proves of some value. Ideally, it will serve as a springboard from which layout artists will seek further information on both layout, animation, and film-making in general. The more knowledge a layout artist has, the better and speedier he or she can perform the job at hand: and the more valuable and versatile he or she will be.

I have compiled the notes of the preceding pages not only from my experience and that of my co-workers, but also from the notes, memos, and comments of my predecessors: Iwao Takamoto, Bob Singer, John Ahern, Don Morgan, and Gary Hoffman. All of these artists knew and practised their craft with great ability and efficiency.

-Charles Grosvenor


a SONY PICTURES ENTERTAINMENT company
XG B119
ABC
2
317/318/319
57
SC 317 Cont
ACTION
CAMERA NOTES
KYLIE SETTLES TO POSE
PHL-5
CUT
PAN BG
Sc.318
SP
KYLIE
MIC.U. ON 1 KYLIE- ED ENTERS
SEE END Sc.317
KYLIE TURNS TO LOOK OVER HER SHOULDER
4X E.I.
TRUCK IN
PHL-11 KYLIE
EDUARDO STEPS UP TO KYLIE
ANTIC KYLIE
4X E.O.
STOP
STEPS BACK SLIGHTLY
PHL-2 EDUARDO
PHL-2 KYLIE
319 HOOK UP 318
CUT
Sc.319
SP
C.U. EDUARDO
EDUARDO STEPS FORWARD
SEE END Sc.318
PAN BG
PHL-11
FOOTAGE 284
TIMING DIRECTOR ABC
SCENE DIRECTOR
PRODUCTION No. XG B119
ACT No. 2
SCENE No. 317/318/319
SHEETS No. 57
A
B
C
D
F
GENERAL NOTE: "TRUCKS" ARE WIGGLEY LINE IN THE CENTER OF THE CAMERA COLUMN — "PANS" ARE STRAIGHT LINES TO THE SIDE OF THE COLUMN
THIS NOTATION OR - HU 319 / HU 318 OR H.U. 319 / H.U. 318