The Soundtrack in Nontheatrical Motion Pictures

By FRANK LEWIN

The functions of the three components of the soundtrack—voice, music, sound effects—were delineated in Part I. Part II considered in detail the editing of the components. Parts III and IV follow. **See Notes on p. 488.**

PART III – PREPARING WORK PRINT AND SOUND TRACKS FOR RE-RECORDING

Conditions are outlined which govern the division of the work picture into reels, arising from the difference between editor's and printer's sync and its effect on the joining of sound across reel breaks. The physical condition of the work print for use in sound editing and at the re-recording is described. Details are given regarding the treatment of opticals in the soundtrack, sync markings, leaders, and the shipping and storing of tracks.

By the time the work print of the film is ready for music and effects it must be assumed that it has been edited to its exact length. Only in unusual cases is it justified to make changes affecting the film's length after work on the editing of music and effects has started. Physically cutting the work print is a simple operation: a snip of the scissors and a splice — the change is made; when narration has been edited, one sound track becomes involved in the picture cut and must be resynchronized. When, however, music and effects tracks have been edited as well, one cut in the picture means the resplicing, and keeping in sync, of from one to seven additional tracks (or more). Furthermore, all logs and cue sheets indicating what takes place on these tracks must be altered with each change. The chances of emerging from the process without some mixup are slim indeed, especially when time presses. It is preferable to delay the start of editing the sound tracks until the picture has its final shape and length.

Division of Work Picture Into Reels

The completed work print of the film reaches the sound editor on one or more reels. With 35mm films the length of the reel is most commonly 975 ft or less, for that is the maximum length of usable negative out of a standard roll of 1000 ft to which the mixed soundtrack can be transferred. Occasionally a reel of 35mm film may exceed 1000 ft; in such a case an end sync mark — visible on the work print and audible on the track so that it will be visibly reproduced on the negative — is helpful. The mixed soundtrack in excess of 1000 ft will then be transferred to the beginning of a second roll of negative (generally so as to provide an overlap with the end of the first roll of negative). The second section of negative will be synchronized from the end mark, and the negative cutter splices the two parts together to form the complete soundtrack.

With 16mm films the restriction as to reel length is not dependent on the length of the negative stock (it comes in 1200-ft lengths, the equivalent of 3000 ft of 35mm). Theoretically a full 1200 ft (approximately 33 minutes) can be re-recorded at one swoop, but that is very rarely done in practice. Most sound is edited on 35mm magnetic film (and for optimum quality 35mm is mandatory) even though the picture work print is 16mm; this would mean that for a film up to 33 minutes in duration the tracks would be as long as 3000 ft. While most dubbers can accommodate oversize reels, assembling and handling these units create problems in the cutting room. More important, however, is the fact that in any but the simplest jobs it is difficult for the mixer to remain alert to the requirements of the mix for so long a period. Repeated rehearsing is as a rule necessary to balance successfully all the elements of the soundtrack for even a relatively short stretch of film. The chances of achieving a successful take are thus diminished the longer the section of film to be mixed in one go. Where it is known that few technical problems exist in the various tracks and the layout of the tracks is extremely simple, it may safely be ventured to mix fairly long sections of film at one time. In the case of an intricate array of tracks, however, the length of the reel must be kept to a reasonable norm (12 minutes or less).

The advantage of mixing fairly long reels lies mainly in preserving a certain feeling of continuity, both in screenings and at the mix. A minor plus point might be that it is sometimes faster, and therefore cheaper, to mix a smaller number of reels as stopping between rehearsals and rewinding time is minimized. However this consideration will often be nullified by the fact that more runthroughs are needed to obtain a good take.

The splitting of the work print into reels ought to be dictated by considerations in the soundtrack. The only restriction the image imposes is the fact that in 35mm films the break cannot occur where an optical effect merges one scene into the other, i.e. any optical except a fade; 16mm films, being printed in one continuous length up to 1200 ft, are subject to this restriction only if the prints are reduced from 35mm. Primary consideration must be given to the fact that when sound and picture are eventually printed, the sound for each given frame is printed ahead of the picture. The reason for this condition is that whereas the motion of the image through the gate at the point of projection must be intermittent, that of the sound over its reproducing mechanism must be continuous — consequently the two elements of reproduction must be located a certain distance apart (Fig. 1).

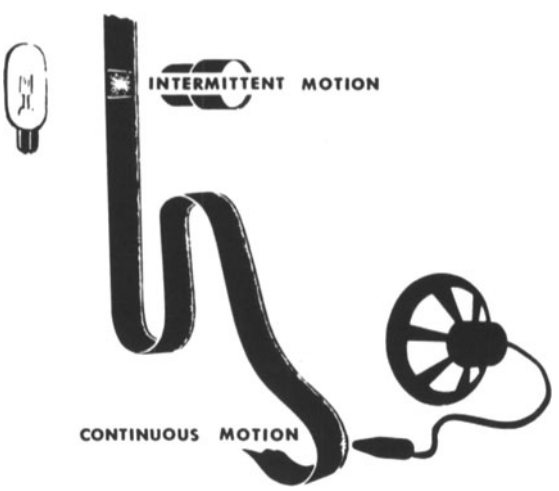

Figure 1

In the case of 35mm film this distance has been standardized to exactly 20 frames, with 16mm it is 26 frames (Fig. 2).

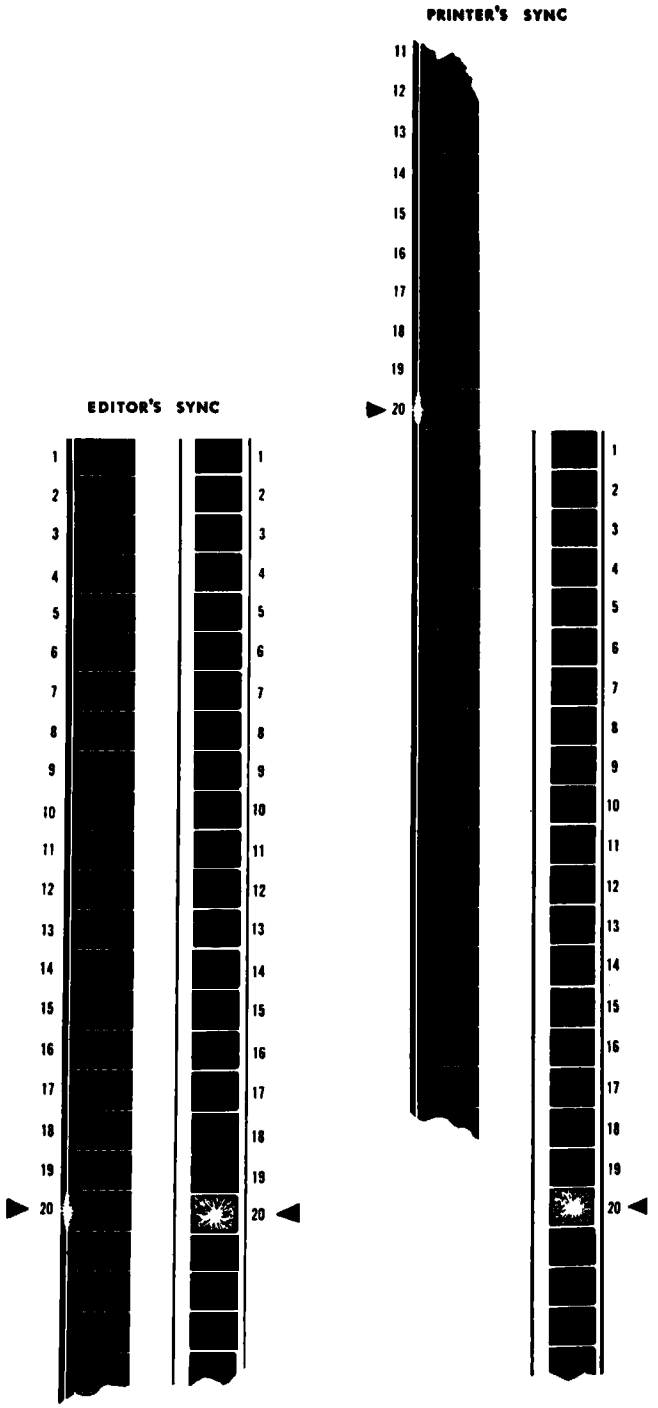

Figure 2

Before the negative of the soundtrack is wedded (printed together) to that of the image it is advanced the 20 frames necessary for 35mm, 26 frames for 16mm. This means that the first 20 (26) frames of Reel Two will in the final print appear physically next to the last few frames of Reel One. The only way this sound can be included on the track is to re-record it at the *end* of Reel One (Fig. 3).

From the above it will be plain that a physical splice occurs in the negative soundtrack between the 20th and 21st frame (26th and 27th frame in 16mm) of the first scene of Reel Two. Care must naturally be taken that no important sound (such as a word of the narration or music sensitive to interruption) is affected by this splice. It is best therefore not to start a reel on a cut which carries a well-defined sound within these first few frames. Continuous neutral sound effects lend themselves best to a joint of this kind as they can be spliced anywhere without being audibly affected. When such an effect is common to both scenes on either side of a reel break the sound may, as a matter of fact, be re-recorded with an overlap; when the negative is spliced together the superfluous sound may safely be snipped off the end of Reel One and the beginning of Reel Two.

When a specific sound, especially music, occurs across a reel joint in a picture which is to be printed in both 35mm and 16-mm, provision must be made to accommodate both the 20-frame and the 26-frame advance. One method consists of using two identical prints of the music, creating an overlap. The sound will then be joined as described above in the case of indeterminate sound effects in which the superfluous sound is removed as the negative is joined. Where this method is not practicable an alternate solution may be resorted to: re-record Reel One allowing the music to run 26 frames past the last frame; this means, of course, that the sound is laid into Reel Two so as to start 26 frames late. After Reel One has been successfully mixed, physically remove the last six frames out of the music track and splice them ahead of the start of music in Reel Two (thus creating only a 20-frame delay). The result in actual practice is to create the desired overlap: when joining the 35mm negative the *last* six frames of Reel *One* can be cut off (as they have been re-recorded at the beginning of Reel Two); when joining the 16mm negative the *first* six frames of Reel *Two* will be cut off.

One way of avoiding trouble at the juncture of two reels is to end the first reel with a scene whose picture fades out, and start the next reel on the following fade-in. The black between fades may be extended at will so as to include the advanced soundtrack. Any fade-out/fade-in in which the joint of sound to sound is thus treated, whether it occurs at the points reels are joined or at any other point in the film, may be readily cut in the final composite print should this become necessary — the cut can be made at that point between fades where the black of the film and the juncture of the sound coincide (Fig. 4).

It is easy to come to regard the reels into which a film is divided as units. They are, however, purely mechanical conveniences; care must be taken always to envisage them joined together in the final product without any interruption in time. Consequently the joining of two sounds straddling a reel break must be subject to all the aesthetic conditions that prevail with the juxtaposition of sequences anywhere else in the film; especial care must be exercised not to disturb the overall pace of the soundtrack. To avoid falling into the trap of considering the end of a reel as a sharp division in the film (where this is not actually the case) it is often advisable to make the break *in the middle* of a sequence whose length and pace has been adjudged satisfactory prior to separating the reels. In such a situation the break does not coincide with a transition in the soundtrack — which may be subject to experimenting during the mix — but will be clearly recognized for what it is: a purely mechanical interruption of which no one viewing the finished print should be in the least aware.

Condition of the Work Picture

To avoid delays at the re-recording session the physical condition of the work print must be such that no hitch can occur in the projection. This means that splices hold firm, sprocket holes are undamaged, tears repaired, and creases that might catch in the projector are smoothed out. When in the editing the print has been subjected to a great deal of wear, it is often advisable to have a dupe printed for the sound editor's use — the cheapest process which does not impair the recognizability of the image too seriously will do. Editing sound entails running a print back and forth repeatedly on the editing machine. If the print when thus used requires frequent repair, the danger exists that frames to which a sound effect is to be synchronized will have been discarded; the scene then must be

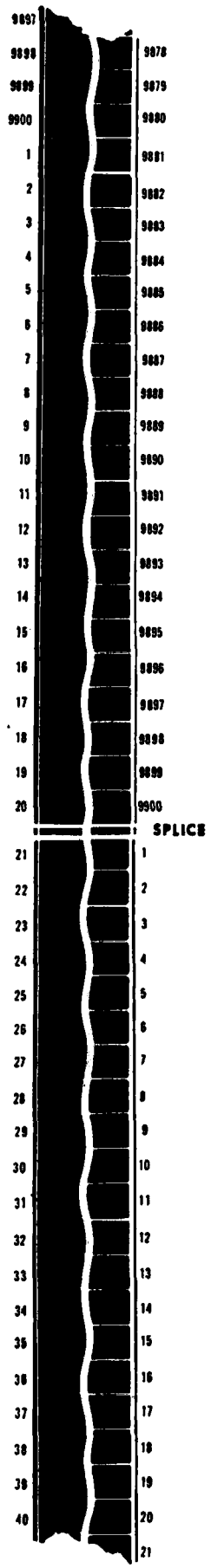

Figure 3

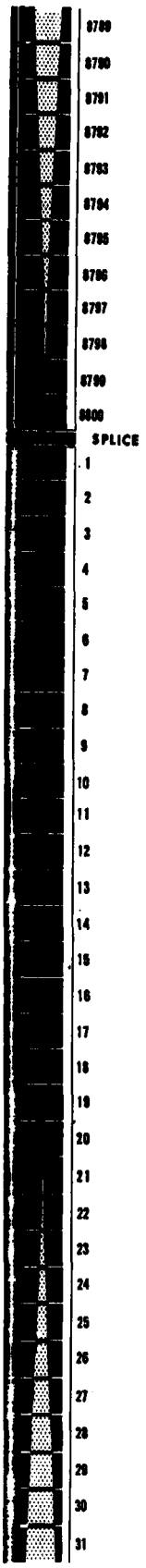

Figure 4

reprinted or the effect will be edited by guesswork. At least *once* before the music or sound effects editor buckles down to editing the details to a duplicate print, he ought to have seen a decent print of the film. It is especially important to anyone responsible for the composition or selecting of music to know the "feel" of a scene — an impression generally conveyed through lighting or color. A dupe will often obliterate all shadings and leave only the physical shapes.

Opticals

The sound editor — music or effects — is directly concerned with the opticals which connect or separate scenes. If at all possible the music and the effects should be edited to a print that contains whatever opticals will be in the film. At the least they must be clearly marked on the print the editor is working with, and they are indispensable to an accurate re-recording. It is not enough to write "diss." on the print and leave it to the sharp eyes of the sound editor to discern the writing as it speeds through his machine. The conventionally accepted markings for opticals should be cleanly drawn on the film, with great care given to indicating the exact length of the transition. From a purely technical standpoint a cut or fade is treated differently from a dissolve when editing sound effects (and to a large extent music as well). It is pity enough that in the course of editing the image optical transitions are frequently treated haphazardly and mechanically without testing their effectiveness or feasibility (many are not even screened until the answer print is viewed — and then the surprises are many, some quite unpleasant); to leave the audible transitions to chance as well merely compounds the injury and does not seem worthy of a production whose cost may be thousands or tens of thousands of dollars.

Sync Marking

It is assumed that when the work print reaches the sound editor it will have enough leader (clearly, cleanly and explicitly identified) to permit threading up (approximately 9 ft), and that it will have an unequivocally identifiable start mark whose distance from the first frame of picture is at least 12 ft (35mm footage). If this is not so, getting these chores done constitutes a prerequisite to doing any work at all on the soundtrack.

At some point between start mark and the first frame of picture (or sound) a sync mark should be indicated on the leader of the work print, preferably scratched or punched in — grease pencil markings can get rubbed off; an audible mark on the mixed track (reproduced visibly once the track has been transferred to negative) must correspond to this sync mark so that negative picture and track can eventually be lined up. Commonly this sync mark will occur 3 ft (35mm footage) before the first frame of picture; at any rate it must be far enough down in the leader so that projector and dubbers will have attained full speed by the time the mark goes through. It does not matter greatly into which of the tracks the audible "bloop" (one frame of any loud tone will do) is cut, just so long as the mixer is advised which one it is. Where simultaneously with the mixed track a music and effects track is being recorded, i.e. all channels excepting those carrying the voice track(s) are being fed to a separate tape, it is advisable to place this bloop on one of the music or effects tracks, rather than on one of the voice tracks. The bloop then reproduces on both mixed tapes.

Leaders

The individual tracks must each carry their identity clearly visible at the head of the leader, including name of production, reel number, the designation under which the track will be listed on the mixer's cue sheet, and possibly a notation that this is the head of the reel. Sample:

PRODUCTION #510, "THE WILD OATS" — REEL 2 — EFFECTS A — HEAD

The start mark must be clearly indicated, preferably in indelible ink. In equipment such as magnetic dubbers the film is in constant contact with the reproducing head; therefore grease pencil or other marking media which readily come off should not be used on the sound area of the magnetic film as they can easily clog the reproducing mechanism and produce faulty sound reproduction. This caution applies to any marking over the entire length of the track, naturally. In this connection a strong word may be inserted against the practice of fastening the end of the track to its reel with masking tape. The damage the adhesive causes if it becomes wedged in the reproducing head can be a source of considerable annoyance at the mix. The apertures of slots in reels are large enough to accommodate any strip of film; why not put them to the use for which they were designed: threading up the film. (Projectionists will confirm that the same conditions apply to picture reels.)

At the end of a reel of sound there must be sufficient leader (10 ft or more) to keep the track firmly in the dubber until all sound has passed the reproducing head; short leader is a frequent cause of wow at the end of a reel and can effectively nullify at the last moment an otherwise flawless take. The very end of the leader should be as explicitly marked as the start of the track, with the addition of the word "TAIL" or "END." With clearly marked leaders a lot of guesswork can be eliminated when the tracks need to be handled before, during, and after the mix.

Theoretically anything having sprocket holes in the proper position may be used as leader for a magnetic sound track. In practice the cheapest stock to be found is waste picture footage. Very great caution must be used in making certain that the emulsion side of the film used as leader never comes into contact with the head of a sound-reproducing mechanism. This means that whereas magnetic film runs through the dubber with *emulsion* toward the head, the leader must always pass with its *base* over the head. Disregarding this rule will result in the emulsion getting scraped off by being in physical contact with the reproducing head, thus blocking the gap which is instrumental in reproducing the sound. When a normally clean track sounds in the studio as if its high frequencies have been cut off, the cause will generally be some length of leader which was spliced in upside down.

Shipping and Storing Tracks

Before a track is shipped to the mixing studio it ought to be wiped free from dirt and other foreign matter adhering to it.

Each track should be provided with a clean can in which it is stored and transported. The outside of the can must have a marking identical to that of the leader at the head of the track which it contains. Tracks so enclosed are protected from dirt and dust; they may also be easily stacked and handled in transit. Anyone who has had to suffer from the effects of bent metal reels or chipped plastic ones (faulty tracking on a dubber, tearing of film through uncontrollable tension, trouble during rewinding) — generally resulting from a stack of unprotected reels that were dropped at some time or otherwise mishandled — can testify to the value of using cans. Loops should be treated with equal care as to marking and storing.

Before all the material is shipped to a screening or mixing studio it is advisable to make out an inventory of all tracks, loops and picture work prints. This is of especial value when the number of units is large. It is helpful to the attendant in the dubbing room to receive a copy of this list — a lot of telephoning back and forth between mixing studio and dubbing room can thus be avoided. Checking the units against this list before they are shipped will also guard against the danger of leaving part of the material behind in the cutting room.

PART IV – RE-RECORDING

The physical make-up of the sound tracks is described. The re-recording engineer's functions are outlined, together with a discussion of the cue sheet which provides him with the information necessary for mixing the tracks. Some points regarding etiquette at the re-recording session are suggested.

IT MUST again be emphasized that the effectiveness of the final soundtrack is largely governed by how intelligently the component tracks are laid out for re-recording. The re-recording engineer (mixer) generally has not heard voice, music and effects nor seen the picture until he makes his first runthrough; he is therefore acquainting himself with his material as he goes along. Anything that helps him to minimize his technical problems will free his time and attention for concentrating on aesthetic points. This is especially true as mixing time is frequently quite limited. When the mixer must devote most of his time to straightening out technical problems, there comes a point at which the customer begins to watch the clock and cares little about having the subtler touches of the track carried into reality in his rush to get the job done any which way.

Physical Make-up of Sound Tracks

One way of helping to expedite a mix is to avoid leaving extraneous sounds on the individual tracks. The best way to prevent a sound from being heard is not to put it into the track in the first place. Ideally each track ought to contain musical sections or sound effects which are clean at either end. This is especially true of the start of the sound. The track should be cut as close to the modulation as is possible without chopping off soft attacks. In this way the mixer may leave any channel open without having to worry about unwanted noises entering ahead of music or sound effects. A bonus with this procedure consists of being able to have a rough runthrough with all channels left open and thus get a fair idea of what the overall soundtrack is like. It is evident that this also facilitates preliminary screenings prior to the actual re-recording session. Another advantage to be derived from starting sounds clean and tight before modulation: it is possible to perform emergency operations on the synchronizer during a mix without having to run the track through a sound reader or editing machine — any piece starts clean (even the B of a track laid out on A and B), ergo it may be moved mechanically if it is needed in another spot (or different reel) and pinpointed to the frame.

Tracks must be laid out so that an operation for which the mixer needs two hands does not coincide with any other operation that requires his manual attention at that precise moment, voice track(s) included. In practice this means that a crossfade, for example, cannot coincide with a fade-in, or another crossfade, at the same instant. If at the time a crossfade takes place another track enters automatically, the editor should make sure that the track really does enter clean. When, for instance, a traffic effect is preset at the same time a musical crossfade takes place, it must be ascertained beforehand that the traffic does not chip in with an auto horn that is clipped at its start. In this connection it may be mentioned that not all picture opticals call necessarily for crossfades (in the case of dissolves or wipes) or fade-ins (with optical fade-out, fade-in) in the track. A quiet background sound which is preset to enter in the middle or slightly ahead of the center of an optical dissolve works as

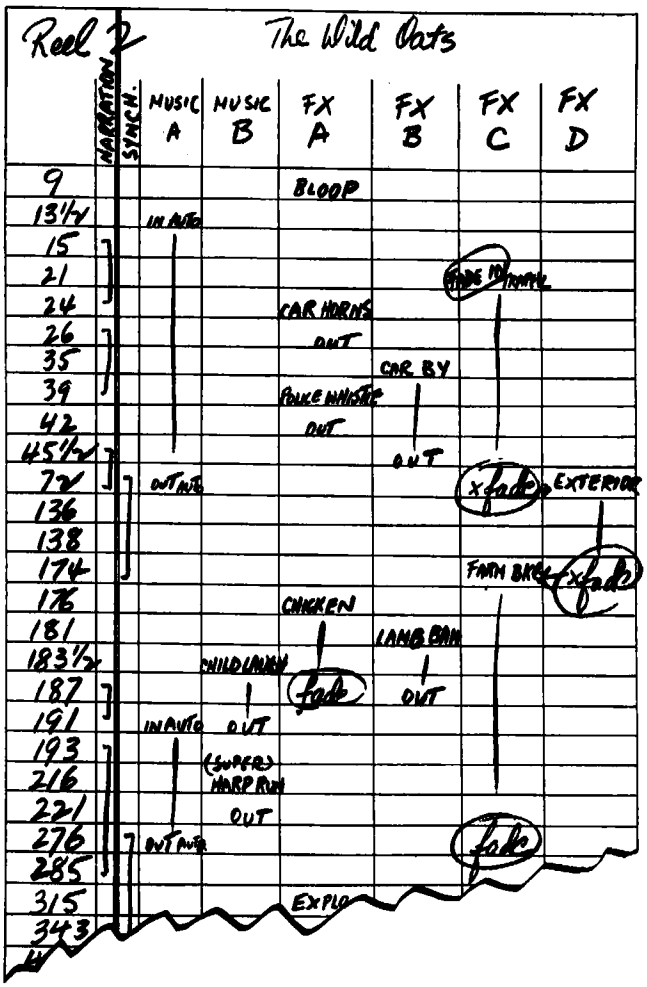

Fig. 5. Excerpt from sample cue sheet.

well as one that is faded in at this point. The same goes, in a more restricted way, for exits. It is sometimes good practice to have the fade-in or fade-out built into the track by having it transferred that way before the sound is cut into the track. It is not advisable, however, to abuse this method. Unless real problems exist at these juncture points, it is better to let the mixer have control over fades: until all tracks are heard simultaneously it is not always obvious at which point a faded in sound is to achieve full level in order to be most effective.

It is impossible to expect a mixer to pinpoint a fade-in to the frame, unless the picture is marked or punched to give him a visible cue. In the case of a complicated assortment of tracks even visible cues do little good as the mixer will have to watch the footage counter more than he will be able to watch the picture. This is especially true in studios where the footage counter is located on the control panel rather than projected near the screen. Consequently, if a sound is to start precisely on cue with the picture it should be laid into the track so that it can be preset to hit clean. This applies with even greater force where one sound joins another on cue. The two sounds should never be cut together on one track if any mechanical change has to be effected involving either sound. When placed on two tracks, the outgoing sound need not necessarily be cut at the point where the incoming one starts — it may be faded out when the latter hits. The incoming sound, however, must be preset — it cannot be faded in if it is to hit on cue.

It is futile to expect the mixer to do the work that should have been done at the time the track was cut: he cannot, for instance, be expected to fade into a piece of music precisely on a beat. He also cannot be expected to provide a piece of music with a good beginning, or end, when the piece does not lend itself to this treatment. It is likewise beyond the call of a mixer's duty to salvage bad cuts. If a cut involves violent level changes; if it joins two pieces (or sound effects) equalized differently and out of proportion to each other; if it tries to connect wildly divergent orchestrations; and especially if it is musically unsatisfying — it had better not be attempted in the first place. Separating the joining pieces onto two tracks will often do wonders in smoothing out technical problems. If, for some reason (sometimes a good one), this is not practical, the problem may be circumvented by superimposing at the problem point another sound (on another track) which will mask the defective cut, as described in Part II in the section devoted to superimpositions.

In all cases of covered up cuts, however, it is well to remember that they are crutches only. When used too frequently the devices will become obvious. A good cut can't be beat, that's about it.

Cue Sheet

Most of the information necessary for acquainting himself with the tracks before him is conveyed to the mixer from the cue sheet. An excerpt from a sample cue sheet is reproduced in Fig. 5.

The maxim of avoiding the unnecessary applies to the cue sheet as it does to the individual sound tracks. What the mixer needs to know is

(a) the footage at which a sound starts;
(b) what the sound is;
(c) how the sound starts;
(d) how long the sound runs;
(e) the footage at which the sound is to end; and
(f) how the sound ends.

(*a*) *The Footage at Which a Sound Starts*

Films are most commonly mixed according to 35mm footages, whether the work print is 16mm or 35mm. Consequently the footages listed on the cue sheet must be in 35mm. It is overoptimistic to expect the mixer to react to footages smaller than half a foot; to expect him to hit frames is, of course, impractical. Figures rounded off to the nearest foot are, therefore, adequate. It is quite helpful to write the footages so that the figures are legible. Cue sheets that furnish figures and information unclear or inexact lead to much unnecessary conversation at mixes.

It may be found of advantage to divide the cue sheet into columns, each representing one of the tracks running synchronously. If at any given footage more than one track enters simultaneously, it may be advisable to write down the footage only once, say all the way over on the lefthand side of the sheet, and on the same line, horizontally, list the activity in the separate tracks. Mixers' preferences in the making up of cue sheets vary and it may be well to find out beforehand how the mixer would like to receive his information, especially in the case of a complicated job.

At this stage it may be appropriate to comment on the best point, in the process of setting up a cue sheet, at which the 16mm footage should be converted to 35mm. It is of advantage to let this conversion be the last step before making up a final cue sheet for the mixer. As the work print is in 16mm, any changes, corrections or questions that come up will generally have to be referred back to the picture. If the conversion to 35mm has been done at an earlier stage (that applies also to narration and dialogue cues) the figures may have to be changed back to 16-mm footages. As any step in the conversion not only consumes time but may lead to errors as well, the opportunities for confusion are thus greatly encouraged. It is advisable that the editor have his original 16mm footages at the re-recording for reference so that last-minute adjustments can be made in picture and track with the least delay possible.

(*b*) *Identification of the Sound*

Any sound entering should be clearly identified. In the case of a narration track it is recommended to let the mixer know

of changes within the voice track which may create problems (change of narrator, differences in equalization or level). Many of these spots the mixer will, of course, note by himself after a runthrough, and some mixers may prefer to find out for themselves rather than get possibly imprecise comments beforehand. In general it may be assumed, however, that the more useful information can be given to the mixer the better.

It is of little value to describe the character of the music when a cue enters, unless that has some bearing on its mode of entering (starting a very loud cue softly or vice versa). In the case of sound effects it is of importance, on the other hand, to identify each effect, especially when several occur simultaneously, so that the mixer can sort out the ones that are to predominate. When similar effects run parallel on two or more tracks it is of value to show in what respects the sounds differ: whether they are staggered; whether they complement each other and in which way they do this; whether they are included so that they can be tried separately under the optimum conditions available at the studio to find which one is most effective with the picture; or maybe because the editor wasn't sure and figured that two are better than one — they seldom are.

(c) How the Sound Starts

It may generally be assumed that unless specific instructions are given, a cue enters clean — the track having been preset previous to its entry. If the cue is to be faded in or arrived at via a crossfade from another track, this fact should be clearly stated on the cue sheet. The decision as to how a track is to start should be made before the mix — experimenting during the mix can be quite frustrating, especially for the mixer who, if he does not get the information from the sheet, has to try to get it verbally from the editor or whoever else has a say at the mix (frequently a surprisingly great number of rarely well informed persons).

(d) How Long the Sound Runs

Once a cue has entered, some visible way of indicating its duration is helpful. A simple straight line, terminating at the footage at which the cue ends, will do to denote a cue's length. In this connection it may be apropos to mention the frequent evidences of artistic talent encountered on cue sheets. They should be universally discouraged. Anything that does not convey specific information impedes the mixer's attempt to fathom the mysteries of the sound tracks entrusted to his care. Colored inks or pencils; doodles; aimless arrows; single or multiple underscores; meaningless circles — they all take time to prepare as well as to decipher. A clean cue sheet written in pencil has the advantage over an inked one in that changes can be made by simple erasure.

To go back further in the process: it is entirely possible to make out a cue sheet at the time the sound is cut by the editor which will serve all along the line until the mixer receives it. All the essential information can generally be put down at the time the track is laid out, including voice cues — the less copying out from rough sheets, the less typewriting, the less dressing up, the fewer chances for errors.

In the case of narration cues, how short a break in the track is it worth while to take into account? Generally, any hole less than three feet in duration (35mm footage) is not effectively vitalized by bringing up music or continuous sound effects. Exceptions to this abound, naturally, when a soundtrack is treated in great detail and noticeable changes in music occur or interesting sound effects are to be brought to the fore in relatively small interstices in the voice track. In these cases it is well to advise the mixer that a sound on one of the tracks hits in a clear spot, even if the breathing space is not more than 12 frames or so.

(e) Footage at Which the Sound Is to End

It is important to give a precise footage at which the sound is to end, insofar as this can be determined beforehand (it generally can be — quite accurately). It is often helpful to denote on the cue sheet how long the sound continues on the track past the point where it is to be terminated mechanically. In the case of crossfades this gives the mixer an indication as to the latitude he has for varying the exact point of the sounds' changeover. Listing the "out" footage also tells him how much clearance the track has before a following cue enters — of especial importance when the next cue is to be preset.

(f) How Does the Track End?

Any track that ends clean, i.e. without a mechanical operation on the mixer's part, should be thus identified. This may be done by marking it "out auto(matically)" or any other clear indication such as a definite conclusion of the line (or other symbol) used for showing the duration of the sound. If the track is to be faded out, or crossfaded to another track, this should be plainly indicated. The question arises as to where precisely a fade-out becomes final or at what point a crossfade becomes established, and how should it be indicated in terms of footage? The practice of trying to indicate on the cue sheet the point at which the fade is to start mechanically can be justified if at the same time a footage is also given at which the fade becomes final and the sound is to be out altogether. It is probably simpler to list only one footage, and make that one stand for the cessation of sound. How the mixer gets there and how early he starts to fade would then be dictated by circumstances either on the screen or in the track itself. In the case of a crossfade, it is likewise difficult to give a precise instruction. If the footage listed stands for the center of the crossfade, the exact execution may then be left to the discretion of the mixer — it is anyhow often a question of "feel" and cannot be pinned down exactly.

Re-recording Session (Mix)

A mixer is a human being — a fact often overlooked by people at the re-recording session. The strain to which he is subjected is frequently greater than it seems advisable to burden a human being with. While this dissertation has attempted to confine itself to technical information, the human element in a mix is so closely related to what the finished print sounds like that it should not be neglected.

It is patently unfair to expect the first runthrough of a reel to come up to the expectations of director, editors and others who have spent the preceding weeks or months in intimate contact with their creation. They know — or think they know — what the track is supposed to do and should sound like — the mixer has to feel his way and must find out through trial and error. The less said after the first runthrough by all concerned, except the mixer asking questions, the better. He is assimilating and trying to integrate a complex assemblage of sounds; he hears many things which he would like to balance out or correct, if he is given enough time; he appreciates a few moments to make notes, repatch connections, and generally sort out what is important on the sound tracks from what is secondary.

The re-recording engineer has a further function — often felt, seldom expressed. He must perform a role similar to that of a host at a social gathering, and depending on how many clients and clients' clients, and clients' clients' representatives there are assembled in the studio, this role is correspondingly onerous — all this on top of doing the technical job required of him.

Once the question-and-answer period of the mix really gets under way, the mixer is constantly called upon to render judgments — often on subjects irrelevant to his work: "Does the film hold up?"; "How do you like the cutting (directing, casting, color, props, focus . . . integrity, showmanship, message) of the film?"; "Why is the studio so hot (cold)?"; "How much longer will it take us?" Getting all the sounds balanced is a delicate operation, calling for taste, experience, nimbleness of hand and mind, a sense of timing, and physical stamina. Whatever is helpful ought to be discussed; whatever is perti-

nent needs to be settled; whatever problems occur must be solved. Anything tending to be unpertinent and impertinent has no place at a mix; and a special anathema should be reserved for unnecessary telephone calls, made or received.

How to prevent waste at a mix and avoid the unproductive? Primarily, it is important to keep perspective. The film in the process of being mixed has progressed through several stages from its embryonic form in the script. It is futile to make the soundtrack conform to an idea implicit in an earlier stage of the film if, in the meantine, the thought has been watered down or has evaporated in the shooting or in the cutting. A scene that is weak will only rarely be improved by playing the music louder, especially if the narrator is going an average of 85 ft out of 90. A sound effect that is not satisfactorily established by the visual will not lend credibility to an improbable scene. A narrator whose delivery lacks conviction cannot be infused with energy by a boost in level or a change of equalization. A music or sound-effects track that is improperly laid out cannot be made to sound graceful and lifelike; a musical recording that sounds thin is only minutely improved by the liberal use of echo; an effect that sounds poor to start with can only partially be rejuvenated electronically — all these things the mixer knows before he even starts in, and the editor (director, producer) should know before he gets to the mix. Clients, when they are aware of what is going on, should be advised tactfully of derogatory conditions, and under no circumstances should they be led in at 2:15, for a mix that started at 2:00, with the expectation of hearing something faithfully representing what the finished film will sound like.

There is no question that the more runthroughs a mixer is able to perform in the time allotted to him, the better he will be able to realize the potential inherent in the tracks. There is one sure recipe for getting the most out of a re-recording: being thoroughly prepared. As suggested above, at least one interlock screening should precede any fairly complex re-recording session. Enough time must be allowed between this screening and the date of the mix to enable the sound editor to perform changes where necessary. The sound editor should come to the mix having listened to *every frame* of the sound tracks that he has cut in. The mixer gets many surprises in the course of his first runthrough; when the surprise is shared by the editor, the re-recording session is likely to turn into a quite lengthy affair.

Summation

The possibilities of the soundtrack for a film are virtually limitless. It is true that a certain amount of time is necessary to create an effective soundtrack — this must be included in the production schedule from the very beginning; a good result can be achieved only with skilled technicians and experienced artists — provisions for their employment must be considered in the budget. The realization of all of a track's potential necessitates using first-class studios and equipment — that takes a tight rein on the temptation to save pennies. Above all, a truly effective soundtrack requires imagination and the patience to experiment — conditions which are frequently discouraged by the climate in which business films are sold and produced. The rewards of a soundtrack, however, which in addition to conveying a message enhances the picture and is viable in its own right are personal as well as practical: the film will wind up as a genuinely creative *sound* motion picture and the audience will respond to it.

Note: The term "soundtrack" refers either to the sound of a motion picture in general, or to the mixed track physically reproduced on the print. The term "sound track" refers to the individual track (*Voice*, *Music* or *Effects Track*) as described in editing and re-recording procedures.

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