

# the TAPE RECORDER

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By Daphne Oram\*

# HOW TO MAKE THIS "NEW MUSIC"

SO you're all set for a handsome prize! Just think of it. A postman's knock, a weighty box and a glorious day of installing still more Hi Fi tape equipment right there in your home. But whoa . . . just a minute, you know you need all that imagination of yours for creating and building up this tape which happens to be between you and that beautiful day in the autumn. How are you going to set about it?

Quite apart from having those five subjects to choose from, the range and potentialities of this whole field of *Musique Concrète* are just a little bewildering when one is starting out with a new tape and endless enthusiasm. Sound is bombarding us from all sides, all day long. Any of it can be recorded and made into a "sound subject" for your purpose. But you must pick and choose carefully and try to visualize what type of sound is really required as the raw material for your composition in tape music. To do this you need to know all the operations which you can perform on a piece of tape to produce new sounds. They will vary according to what equipment you have available, especially depending on whether you are a competitor in the one tape recorder class or the many machines class.

But let's have a look first at two important processes of manufacture, which we have to become expert at, and give ourselves a preliminary exercise or two.

## Make Yourself Expert at Splicing

A good knowledge of editing is essential in both Class A and B. Study I. W. Jarman's articles in the first three numbers of "*The Tape Recorder*". Put in as much practice as possible on splicing *before* you come to cutting your precious tape of *Concrète* sound subjects. If you have no editing block you could use postcard and paper clips as shown in the diagram. Practise editing music and sound effects as well as speech. Why not try editing alternate notes out of a chirruping bird call—it will keep you amused for hours besides helping your technique! No birds handy? Then try a dripping tap. It is necessary to become really accurate at this job, because some of the most interesting sounds can be obtained in this way—for example by cutting off the percussive attack from the front of a bell or piano note.

## Finding The Place

One of the greatest difficulties is to locate the exact position on the tape of the sound you wish to cut out and keep. The rev. indicator will give you an approximate idea. A small piece of jointing tape inserted perpendicularly at the exact spot where the tape winds on to the take up spool will enable you to go back to the same place quickly.

Play from this spot (which you know to be a little prior to your goal) counting the musical beats or sounds until you reach the wanted subject. Go back to the perpendicular tape setting and count again, this time stopping the machine just *before* the wanted sound. Mark the tape with soft yellow wax pencil at the playback head. If you can monitor whilst turning the tape past by hand, have the volume level high and check by ear that the pencil mark is just a fraction before the required sound. Mark the end of the modulation by this method too or by going back to the perpendicular tape and recounting. This time include the wanted sound in the count.

## What to do with the wanted sounds

Keep a spare spool handy marked "master" on which you can put this wanted material. It's worth it. The wind always blows if you lay the lengths out on a table! Short inserts of coloured leader between the sounds will help to identify them if you are leaving the sorting until later on. Put a wax pencil mark on each subject to show the suggested playback speed.

\*Daphne Oram has kindly consented to be one of the panel of judges of our "New Music" Competition.



In a previous "incarnation" 'the author operated the B.B.C. Radiophonic Workshop. She is seen here composing a piece of *New Music* from electronic oscillators, and has now set up her own studio in Kent for electronic composition and *Musique Concrète* under the name "Oramics".

If you have only *one* half track machine you will not usually be able to indulge in "backwards sounds". But should you have a full track machine you will be able to put these sounds straight on to the master tape in the backwards direction. When working with *several* half track machines it is preferable at this stage to keep these sounds to be played backwards on a separate spool—a heavy metal spool is best, for reasons we come to in a moment.

## Manipulations of Sound Subjects—1. Backwards

(Not usually possible for Class A, unless, as already said it is a full track machine.)

Class B—with two machines. Spool tape on to the right hand spool. Place left hand spool on turntable of gramophone. (Heavy spool will grip the best.) Hold back pressure pads a little, if they are tending to prevent the turntable from driving the tape properly. Half engaging the playback condition will very often allow the right hand spool to revolve freely without the motor starting (i.e. removes the brakes) and will at the same time operate the playback head and amplifier. Of course the tape speed using this system does not depend only on the gramophone turntable revolutions, but also on the amount of tape already wound on to the take up spool! However this enables you to get faster speeds, by using a well-filled spool when required. The "backward" sounds are recorded on your second machine.

Class B—with three machines. Place the two machines close together (as shown in diagram). Thread tape from right hand spool of right hand machine past playback head and then over to second machine past its capstan only and so on to its right hand spool. Half engage playback condition on right hand machine and fully engage drive on left hand machine. Record on third machine.

With a stereo machine, you simply spool tape on to right hand spool, change over position of spools and record from other track.

## 2. Filtering

Many readers will possess some form of tone controls, or a high fidelity control unit. These are excellent for making small changes in quality. But in this field we often want more drastic filtering, which may call for a bit of "fiddling".

If a muffled sound is required, try filtering out the top frequencies by playing the tape through the wrong side (shiny surface to playback head). But remember, with half track machines this means playing it backwards, so use the techniques given in the previous paragraphs to

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get it the right way round again. A  $0.1 \mu\text{F}$  condenser used in series will cut the bass or you can experiment with other values. Use a condenser in parallel to filter out the top frequencies.

Class A competitors will have to introduce any filtering in the input circuit to the recorder. But another approach is to try different microphone positions—inside a cardboard wastepaper basket or a metal box, at the other end of a resonant passage or hemmed in by rugs.

### 3. Varying the Speed

Innumerable new effects can be obtained by means of changing speed. The hand lightly applied to the fly wheel of the drive capstan will give you a glissando but do be CAREFUL about ELECTRIC SHOCKS when inserting the hand into the machine. The capstan itself can be increased in size by winding sellotape round it but this usually produces wow. Instead try running the right hand spool on a gramophone turntable as described in "backwards technique". Most old 78 turntables have variable speed controls, and you will be able to tune your sounds to almost any desired pitch.

### 4. Making Tape Loops

Cut out two interesting rhythmic patterns. Make each one into a loop so that the rhythmic pattern never stops. Play both loops at once and record on third machine until all the permutations have occurred. Very complex and intriguing rhythms can be obtained this way. Size of loops can vary. Lace the long ones round a music stand or standard lamp but not round the best vase—if the tape catches suddenly it can exert quite enough pull to remove ornaments off the mantelpiece.

### 5. Superimposing

Record the first sound at high level. Then lace up the same piece of tape so that it does not pass the erase head (or else put a piece of card between the erase head and the tape). Now record the second sound over the first. You will find that the dynamic level of the first one will have been somewhat reduced (due to the bias introducing partial erasure) so that you may have to experiment with levels if you require both sounds to be equal.

### 6. Mixing

A mixer such as John Berridge described in the May "Tape Recorder" is a great help. I might go so far as to say that mixing is a whole art in itself, and after a bit of practice you will be able to fade in and out individual sounds so as to build up a highly professional montage. If you have no mixer, you can make up a jack strip all in parallel (very convenient ex G.P.O. jack strips with twenty jack sockets can sometimes be picked up for a few shillings). For a difficult mix

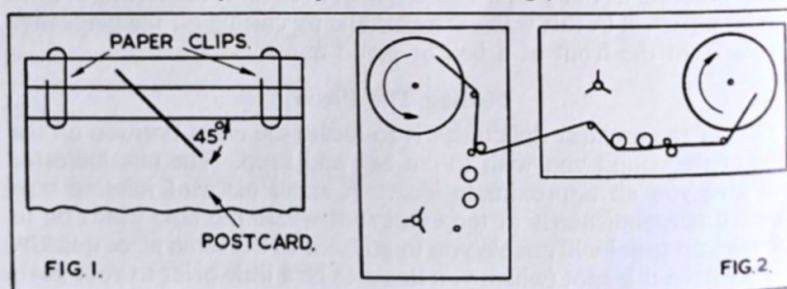


Fig. 1 An improvised editing block. Fig. 2 Running Backwards.

it is often easiest to make each sound into a loop with just a short piece of leader tape between beginning and end. You can then try the mix over and over again without any spooling backwards to locate the start.

I find that I am using all of the above techniques and ideas continually in my work, and I am not above using them *all at once*, if necessary, or trying out new ideas on the spur of the moment. So my best advice is do try all these techniques before you embark on choosing the raw material for your competition entry. Do not record a sound just because it interests you as it stands—that's just a straight forward sound effect. Try to imagine the sound as it will be *after* you have played around with it. First, built up in your imagination the complete composition of sounds that you require. Then sally forth to find material which, when you've manipulated it by the techniques outlined here, will give you those exciting new sounds which your imagination has already enabled your inner ear to hear.

Oh, yes, that postman's knock and that weighty parcel may not be so far off after all!