3CR Cool Edit Training Notes

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Introduction

3CR has Cool Edit Pro 2.1 on its computers in Studio 2, Studio 3 and the control room. It is an excellent program for digital editing of interviews as a single track, and can also be used to produce multi track pieces using a range of sound sources. These notes are primarily designed for basic single track editing in 3CR studios.

First thing we need to do to be able to work with audio on the computer, is to record the piece of sound we want to edit on to the computer. You have different options as to where you can access audio to feed in to the computer: for example, **line in** is everything that comes through the panel, while CD is the **CD drive** on the actual computer. You will primarily need to use **line in** which will probably already be selected but if it isn't YOU will need to select it.

Playback levels

Cool Edit Pro does not automatically control the recording levels or playback levels or select the audio feed in to the computer. This is done by you setting the levels and making the selections. Most of the time the levels and sound sources are already set to a good level and **line in** is also selected, but if they're not you'll need to open up the controls and change them.

In the bottom right corner of your desktop you should have a yellow symbol for a speaker. Double click on this icon and a mixing panel will be displayed on

your screen. The mixing panel on the screen has faders similar to that on a real panel. The mixing panel that automatically opens on your screen contains the controls **only** for your **playback levels**. Here you can select the source of what you want to hear played back from the computer.

Any Cool Edit audio files are played through the **wave** channel and also controlled through the **play control** fader. On the actual studio panel the computer comes through the channel labeled **PC** (Studio 2) or **COMP** (Studio 3).

When you open the play controls you do not always see all the channels of the Volume Control such as CD Audio, Wave, etc. If you do not see them you have to choose **Options** and **Properties** and there you can select all the lines you would like to have included in the mixing desk.

Recording levels

To see the panel for recording controls, you need to click on **Options**, then on **Properties** and select **Recording** (having first double clicked on the yellow speaker icon). A panel with the recording controls will appear on your screen. Next you need to select the audio source you want to use, for example **line in** or **CD** etc. Again, everything that is played through the panel comes through the **line in**. You can select the source you want to record from and also move the faders up and down, to increase or decrease the recording levels.

In order not to get any **feedback when recording** you need to **mute** the **line in** on the **play controls** when recording on to the computer using the **line in** source.

PLEASE NOTE on 3CR computers with new sound cards the levels are set automatically and it is NOT possible to change them

Creating a New File

Now you can open a new file in Cool Edit Pro. To do this click on **File** and select **New**. A new screen appears. Within this screen you are asked what settings to give to your recording, or in other words, what quality and size your new audio piece will be.

Most likely the following settings will automatically come up as the last selected settings:
Sample Rate: 44,100
Channel: Mono
Resolution: 16 bit

You need to change the settings to the above if they do not come up automatically. However, here is some information for your general interest.

Sample Rate
The sample rate indicates how many times a sample of sound is taken over a specific time. For CD quality the sound card will take 44,100 samples per second.

8,000 Hz Telephone Quality
11,025 Hz Poor AM Radio Quality
16,000 Hz Reasonable compromise between 11 KHz and 22 KHz
22,050 Hz Near FM Radio Quality
32,075 Hz Better than FM Radio Quality
44,100 Hz CD Quality
48,000 Hz DAT Quality

Channels
Mono wave forms support one channel of information. Stereo files take twice the space because there are two channels of information represented. As 3CR broadcasts in mono it is adequate to record in mono. If you are creating a CD it is then best to record in stereo.

Resolution
This describes the number of bits to use for each sample on each channel. As an example, compact disc players have a 16-bit resolution.

When you have selected these options, click **OK** and you are ready to record.

Monitoring the Recording Levels
As you would do with any piece of equipment you use to record - minidisk or cassette - you need to check first your recording levels to make sure that your audio is loud enough, but not too loud and therefore distorted. There is

nothing worse than having recorded a really good interview and when you go to play it back it is either too low or is distorted from being too loud. This is a good habit you will have to learn. Most recording equipment will have different ways of monitoring and controlling the sound. You should check your recording levels each time you want to record something onto your minidisk or onto Cool Edit Pro.

To monitor the volume of your sound you need to see it. Click on **Options** and then on **Monitor Record Level**. It will activate the **VU meter** which is a unit that visually shows the level of the volume. If you continually talk into your microphone, or play another sound source through the panel, you can see the levels on the VU meter moving.

It is the red line (one if you are recording in mono and two if you do it in stereo) from the left to the right following the changes of your voice or sound source: the further right it goes the louder you are recording.

Suggested Recording Levels
Cool Edit Pro 2.1 suggests you should record as loud as possible without clipping. Clipping is when you record too loud. It shows up in red on your VU meter on the right hand side of the 0db. If you record too loud your sound will be distorted. The maximum level that you can record to before distortion is 0db. The best would be recording to a maximum level of –4 or preferably -6. At this level you allow yourself room to go slightly over but still not to peak and cause distortion. You cannot control the recording level from the Cool Edit programme. You need to go to the **Recording Control** mixing desk and slide the fader up or down to adjust the recording volume (as outlined above).

Wave files
Now everything is ready to record. Just one hint before pressing the red recording button: if you wish to see how your audio appears in the form of a wave in the screen while it is being recorded, you have to click **Options**, **Settings** and then select **Live update during record.** It is likely that this has already been selected. When you begin to record you can see the wave appearing on the Cool Edit Pro screen. Use the control buttons in the left hand side at the bottom of the screen. They work as in any other sound device.

Just click on the **Record** button and speak or start your sound source playing.

When you have finished click on the **Stop** button. Your voice or sound source is now represented on the screen by a wave. The next job is to save. It is very important to save as frequently as possible when using Cool Edit Pro or any digital editing package. To save your recording click on **File**, scroll to and click on **Save As** ... It's best to create yourself a folder to store all your audio files. This should be done on the Main Data D: drive in Studio 3 and the Main C: drive in Studio 2. But remember! 3CR computers have limited space and are regularly cleared so don't store too much on the computer and save completed pieces to CD for archiving (see below).

Listening to a wave
You probably want to listen to what you have recorded. If you want to hear what you have recorded you need to slide up the fader of the **Wave** channel in the **Playback Controls** – it is likely that this is already set up correctly. If not you'll need to change them (refer above, Playback Levels). If you fade down or mute the rest of the channels you will be able to hear the sound coming from the Wave channel even better.

Now click on **Play** in the control buttons of Cool Edit Pro.

The wave forms
By listening and looking at different waves carefully you will learn a lot about how the sound is represented on the screen. The first thing to notice is that that when the recording is too loud and therefore distorted the top and bottom edges are unnaturally flat, as if they were cut with scissors. There is no way to fix this and it should be avoided at all costs. When the recording is too soft it is represented by a small wave in the center of the screen. This can be corrected (see below) but is not ideal. Over time you will also learn to recognize certain words, ummms and silence just by looking at the wave.

Basic Editing
Now that we have some audio files or waves stored on our computer we can start learning the basics of digital sound editing. The main functions you will

use for most of your editing are **Cut, Copy** and **Paste**. You will find these by clicking on **Edit** and scrolling down to the one you want and clicking on it. You can also do it more directly with the buttons of the tool bar at the top of the screen.

The Undo option

Before you start editing it is very important that you have activated the option **Undo**. It means that every time you edit something, if you are not happy with the result you have the option of deleting your last action. So you can feel more relaxed about cutting parts of your wave if you know that you can still change your mind and recover the wave like it was before your last step or cut. You can go back undoing the actions you have made up to 80 times. To make sure this option is activated go to the **Edit** menu and select **Enable Undo**. Every time you want to undo your last move you go to **Undo** in the **Edit** menu or to the corresponding icon in the tool bar.

Making selections, cutting and pasting

While listening to a wave you must have noticed the yellow line that moves across your screen. If not, play your wave again and look carefully at the screen. This line is very important; it will mark your editing points.

Play the wave a few times to become familiar with the shapes and how they represent sounds. You can use the space bar on your keyboard to start and stop playing. Play the wave and pause the yellow line just at the beginning of the words you are going to delete. Click on the point of the wave where you want your selection to begin. Hold down the left button of the mouse dragging the mouse to the right until you reach the end of the words you are selecting - just as you do in any other Windows application. You can also do this in reverse if you want, that is, last words until first ones. When you release the button, the area you have selected is highlighted. To listen and check your selection, click on **Play**. It will only play the selected part of the wave.

If you want to make the same selection **bigger or smaller to be more precise**, you can click on either of the small yellow triangles at the two top corners of your highlighted selection – a hand will appear and you can drag to the left or right to increase or decrease your selection. You can modify the selection and play it as many times as you want until you are sure the correct

words and only the words are included in the selection. To erase the selection go to **Edit**, scroll to and click on **Delete Selection,** or simply press **delete** on your keyboard. Your selection has now been erased. Click on Play to listen. If you are not satisfied with the result remember you can always use **Undo**. **Undo** is the first option in the **Edit** menu!

The next step will be moving a selection to its correct place. Select some words you'd like to move. We will cut them from where they are and paste them in the right place. When you are satisfied with your selection choose **Cut** in the **Edit** menu. The selection has now gone from your recording but is stored to the clipboard in the computer waiting for you to paste it somewhere else. You need to find the exact point of the wave where you want to insert it. **(Note that there are keyboard short cuts for cutting and pasting just as in Windows).** Once you are sure you have found the point where your selection belongs, select **Paste** in the **Edit** menu.

The shape of your selection now appears again on the screen but in its new place. Listen to the result and decide if you are happy with it. When you have made your changes don't forget to **save**.

Using zoom and timer
As you may have seen the waves stretch and shrink to fit in the screen. It is not the same to have a few seconds or a 30 minutes wave on the screen. In the 30 minutes one the wave is tight in a small space. Like this it is difficult to make precise selections. However, we can change the view of the wave (bigger and smaller) to recognise the parts we want to select.

To do that we use the **Zoom** options. The most useful ones are the three at the top and the one in the left bottom corner of the Zoom menu. Here is an explanation of how these options work:
Zoom to centre: It stretches the wave. However, to show a wave in more detail means that not all of it is shown on the screen, but just a part of it. This button enlarges the whole wave but shows just a part in the centre of the wave. If you want to see a part that is not shown on the screen you can move along the wave using the green bar at the top of the screen just under the toolbar.
Zoom out: This option does the opposite. It makes the wave smaller or it shrinks it and therefore shows all or more of it on the screen.

Zoom out full: This option goes back to the original size showing the whole wave fitting in the screen.

Zoom to selection: It shows the whole of a selection fitting in the screen.

The bar at the top of the screen just under the tool bar shows the part you are viewing in the screen in proportion to the whole wave. The green part is the part you are viewing. If the whole bar is in green it means that you are seeing the whole wave. You can move along the wave when it is zoomed. If you point your cursor on the green bar it becomes a hand. If you hold the left button of the mouse and drag it you can move through the wave right and left. Now try to click the right button of your mouse when your cursor is on the green bar. Dragging it you can make the area of the wave that you are viewing bigger or smaller to your wish.

The timer

This is another useful tool to help you editing. The timer is a clock that shows the length of your audio works. By default it shows the time in decimal format - minutes, seconds and milliseconds (mm:ss.dd). You can choose what format you like at **Display, Time Format** in the **View** menu. The time that appears at the left shows the length of the track until the particular point of the yellow line in the wave. The table at the right side shows the beginning, end and total length of the selection (the upper file) and of the whole wave (bottom file).

You can use the timer as a control to adjust your selection or your piece to a particular length of time or to be very precise when choosing the point where you start cutting, pasting or whatever editing you want to do.

Transforming waves

Cool Edit Pro allows you to transform the wave in different ways, reducing noise, amplifying or creating effects with the voice or music you have previously recorded. This can be very useful, e.g. when you have recorded an interview too low in volume.

These notes will not go very deeply into the possibilities of these options. There will be just two examples, so as to give you an idea of what the possibilities are. You can experiment and learn about it yourself.

To transform we first need to open a wave. Choose one with a voice. Go to the menu **Effects** and choose **Amplitude**. You will see different options. We are just using the **Amplify** option. If you click on **Amplify** you will see a window where you can choose two ways of setting the level of amplification:
- Manually, sliding the fader right and left to the percentage you wish.
- Using the presets that appear in the right hand of the screen. You can choose Boost or Cut, and in what level.

The best way to learn about the effects is trying them. If you press **Preview** you can pre-hear the result without actually modifying the wave. You can also press OK and see how the wave transforms graphically. Remember that you can always **Undo** the amplification if you don't like the result. The **Amplify** option is used to adjust the sound of your waves to a certain level (lower or higher than your original recording). This tool is quite useful if you want to make sure that different waves you have recorded all have the same volume. By selected a section you can also use the **fade in** and **fade out** tools which can also be useful. Try them. Now try the **effects**. There are a lot of different effects to modify the sound in Cool Edit Pro.

Open **Delay Effects** in the **Transform** menu and a list is displayed: Chorus, Delay, Echo, Flanger, Reverb etc. Choose one of them, for instance Chorus. As with the **Amplify** option you can work manually or with the pre-sets. As we are just starting to use these options it is easier to play around with the pre-sets to become more familiar with the effects and what can be done with them. The great thing here is that you can select any option and preview to hear what it sounds like. If you do not like it, try another one. Each of the **Delay Effects** options has a list of pre-sets.

Transferring Your Audio File to Another Source

Once you have completed editing your audio file and done a final save you will need to transfer it to a tape, mini-disc or CD in order to play it on air. Also, as there is limited space on the 3CR computers it is important that you regularly clear your folder of audio files – otherwise they may be deleted for you! **(Regular clearing of audio files currently happens on the first Monday of the month).**

Burning to CD

You may wish to do this by burning files to a CD. You can save either audio or data files on CD. Audio files can be played on any CD player while data files must be opened on a computer that has Cool Edit Pro 2.1 on it.

Close Cool Edit and any other programs and return to the desktop. Double click on the **Expressburn** icon. Choose your recording options – **music** for a simple audio file or **data** for data files. On the hard drive find your audio/wave file. Left click on it and drag it down to the space below. Here your audio file will be listed as a track with details of length, name etc. Once you have selected all your audio files you can click on the **Record** icon. Follow the pre-sets to start recording.

Recording back to tape, mini-disc, cassette etc.

Alternatively, you may wish to record to reel to reel tape, mini-disc or cassette. Simply play your audio file through the panel (channel labelled PC or COMP) and set up your tape, mini-disc or cassette to record. Set the levels correctly on the panel and then check them on the recording machine. Remember, if nothing is coming through or the levels are incorrect you should also set them through the **Play Levels** on the computer with the **Wave** channel (see above).

Deleting Your Audio Files off the Computer

Once you have copied your files off the computer you should go back and delete it off the hard drive. Close all programs on the computer and return to the desktop. Double click on the **My Computer** icon and locate your file on either C or D drive. Select both the wav. file and the pk. file and delete them.