Chapter 5

POST-PRODUCTION

POST PRODUCTION

GENERAL

Being a computer based format, and a perfectly standard Broadcast wave FAT 16 or FAT 32 file format, post production, as we know it, will generally not be performed using the NAGRA V in any way.
Naturally the concept of the format means that the HDD is removed from the NAGRA V and is sent to post-production which is entirely performed using digital workstations etc. However, there may be certain circumstances where the NAGRA V is needed for the transfer process. This section explains how to use the NAGRA V in post-production, the necessary settings of the NAGRA V during production so that the post-production becomes as simple as possible and finally the principle post-production procedures concerning the NAGRA V audio material.

SYNCHRONISING WITH THE INTERNAL CHASE SYNCHRONISER

The NAGRA V is equipped with an internal time code chase synchroniser that allows the machine to chase and follow any external time code reference.
The external time code reference must be connected to the 5-pin LEMO socket on the right side of the machine.

ACTIVATING THE INTERNAL SYNCHRONISER

Pressing the SHIFT key while selecting the PLAY position of the main function selector activates the chase synchroniser.

SYNCHRONISER MODES (CHASE REFERENCE)

The synchroniser can operate in various different modes, which are chosen in the synchroniser part of the time code menu.

TC EXT In this mode the time code of the take on the HDD is locked perfectly to bit accuracy with the external time code fed to the LEMO connector. The machine will remain perfectly in sync and will copy the speed of the external signal perfectly.

TC INC In this mode the time code fed to the machine and that of the file to be synchronised are not the same. At the moment the synchroniser is activated the exact difference between the two values is calculated and stored in the offset register. This offset then remains constant until the next synchronisation command.

VIDEO This is the position which should be selected if the machine is to be locked to an external PAL or NTSC video signal. In this mode the “0” frame of the time code second is locked to the leading edge of the video frame pulse signal fed to the BNC connector.

CLOCK REFERENCES

Fix Clk In the FIX CLK mode the machine will always follow the external reference. Once the machine is in the LOCKED state the internal synchroniser will no longer influence the transport and the transport speed is controlled entirely by the reference frequency (REF FREQ menu). If however the synchroniser of the NAGRA V sees an error of more than 1 frame, it will re-engage itself to correct the synchronisation error. This is the recommended operating mode.

Var Clk This mode is designed to allow the machine to follow an external reference that is not the same as the REF FREQ using the internal synchroniser. This setting allows the internal synchroniser to modify the internal clocks in such a way as to follow this REF FREQ (for example NTSC / NTSC 60). In this mode, the digital output is not available and the quality of the analogue outputs may be slightly degraded. Such a situation arises when the take has 30FF time code and the external reference is NTSC (59.94). The machine will slow the audio down to 29.97fps.

POST PRODUCTION WITHOUT NAGRA V

Under normal circumstances the post production of the audio files recorded on the NAGRA V will performed entirely in the post production facility. In this case it is important to know how the post production is going to be done before starting the production, and thus the NAGRA V can be set in the correct manner from the start.

Important points to verify are the **Time Code frame rate** being used and the digital audio **sampling frequency** and **word length** that the post production facility is going to use.

If the frame rate is incorrectly set during the recording it may be impossible to sync up the audio afterwards. If the incorrect sampling frequency is used the signal will either need to be fed through a sample rate converter, or alternatively the audio will need to be taken out of the digital domain via a D/A converter during transfer. In both cases there will be an unnecessary lowering of the audio quality. Equally if the post production chain cannot deal with the full 24 bit word length, it may be advisable to make the initial recordings with the NAGRA V set to 16bit configuration. This avoids undesirable truncation during post production of the digital signal, or alternatively standard conversion.

In the ideal situation the recordings will be made at 48 kHz 24 bits with time code according to the standard frame rates. In this case the HDD is sent for post production and the user starts afresh with a new one the following day.The machine my require a spare drive or two in order to cycle the drives through Post.

HDD IN POST PRODUCTION

The post production house must be equipped with a HDD IDE adapter in order to be able to replay the HDD coming from the field that were recorded on the NAGRA V.

The HDD adapters are available in the following formats.

IDE/USB2 adapter	#2097 937 000
IDE/Fire Wire adapter	#2097 939 000
IDE/PCMCIA adapter	#2097 935 000

Each of the above is delivered with the necessary drivers on CD-ROM for the installation. Once installed, the HDD drive appears as an additional drive to the editing system. The audio can be downloaded directly from the master into the system. We have tested the HDD adapters with various different operating systems (Mac, Windows 98SE, 2000, XP and NT4) without any problems.