

CHAPMAN FILM/TV PRODUCTION



HANDBOOK

4th Edition, Fall 2004

Production Sound: Step-by-Step

- 1- Listen through the headphones to the location's sound.
 - Is the Microphone close enough to the talent?
 - Are there any unwanted sounds? (AC, Traffic, etc...)
 - Try to get rid or attenuate these noises.
 - Is the space too reverberant?
 - Is there any way to lessen the level of reverberation by hanging blankets or shifting the shot away from the walls.
- 2- Clearly label your tapes.
- 3- Make sure to set proper levels during rehearsal.
 - Give feedback about levels and sound quality to the dir..
 - Make sure the boom op. is getting the mic as close as possible to the talent and is staying on-axis.
- 4- Make sure the director gives you 2 sec. of silence before calling "action" at the beginning of the take.
 - This will give the sound editor "room-tone" to work with when dialogue editing.

During Production:

- 5- Make sure you are getting good levels!
 - Average levels on DAT/FR-2 should be around -12DB!!!!
 - Average levels on NAGRA should be around -8DB!!!!
- 6- Fill out production sound reports.
 - Make sure to note any "problems" such as bad slates, tail slates, camera noise, etc...
- 7- Rewind tape and listen to the sound.
 - Watch the meters. How are the levels?
 - How is the quality of the sound?
 - Is this what you would want your film to sound like?
 - Communicate any sound problems to the director.

If there is no way to avoid bad sound do WILD LINES!

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Why is good production sound important?

Because "fixing it in post" involves large amounts of money, time, labor and expertise which most student filmmakers don't have.

No matter how good your cinematography, story and actors are, if the sound in your film is not good, the final product will not be good.

Good sound design begins in production.

Your post-production sound work will become easier and your final film will sound much better if you begin with clean production dialogue.

Besides a few special cases, there is no excuse for not getting good production sound.

All it takes is an understanding of a few basic concepts (outlined in this book): attentive ears, common sense, and the cooperation of the film crew.

In a student film situation a cooperative crew is especially important. The reality is that production sound students often lack experience. It is therefore that much more vital that everyone lend a helping hand with the prod. sound (especially the director).

So, P.S.: Please don't automatically blame your sound person if you end up with bad production sound.

Remember, filmmaking is a collaborative art form and this should extend to the realm of sound.

**FRANK'S 15 RULES FOR GOOD
PRODUCTION SOUND:**

1-Scout locations.

2-Check to make sure the equipment is in working order.

If you are not familiar with the equipment, practice using it!

3-During the shoot use the dry runs/rehearsals to set levels and figure out boom placement and movement.

4-Boom overhead if possible, and get the microphone as close as possible to the talent.

This will reduce reverb and background noise.

5-It is important to focus on the dialogue at the exclusion of all the other sounds.

The dialogue tells the story and is the hardest sound element to replace in post.

6-Don't hesitate to notify the director if you feel that the sound is in any way problematic.

(Have her/him listen to the sound on the headphones.)

7-The same way one would make set-up adjustments for picture, one should also consider making set-up adjustments to get good sound,

8-Make sure one can clearly read the information on the slate (white slates with black writing are best) and make sure to voice slate all the shots. (This is vital for synching dailies!)

9- Have the director wait a few seconds before calling "action" so that you can have some clean usable room tone for dialogue editing at the head of each shot.

10- Monitor levels from meter not headphones, and make sure you have good levels.

Average dialogue levels should read between -8 and -4 on the Nagra, and -10 on Dat and Mini-Disc.

11- No matter how wide the shot is you should place microphone as close as possible to the talent. Any sense of perspective (reverb and lower levels) should be added in post during the mix.

12- No matter what the crew says, always record sound.

Even if it sounds terrible it can be used as a valuable guide track in post-production sound work. NO MOS!!!!!!

13- Whenever possible, rewind tape and listen to the sound. This applies both to the production sound mixer and the director.

14- If you have no choice but to record in a noisy or reverberant space, make sure you get "wild lines" from the actors in a quiet location.

This will help you avoid time consuming studio ADR.

15- Label all your tapes clearly and fill out your sound reports.

Remember: there is no miracle "fix it all" pink button in ProTools!

- GARBAGE IN, GARBAGE OUT

SOUND IS A MESSY THING!

WHAT YOUR EAR HEARS IS NOT WHAT YOUR
MICROPHONE GETS!

The human ear is selective; it filters out what it does not want to hear while focusing on what it wants to hear.

It is easy for you to focus on a conversation at a party while tuning out the background noise

Unfortunately the microphone does not have that capability.

While it might be more sensitive to sound coming from one direction, it still picks up other sounds.

One cannot completely frame out sound with a mic.

It is therefore important to have a relatively quiet location and the mic as close as possible to the talent.

The closer you are with the mic to the talent the more direct your sound will be, the less reverberant and noisy it will be!

SCOUT YOUR LOCATIONS

Scout the location at the same time and day that corresponds to when you are going to shoot.

1-Is it quiet enough for movie dialogue?

-Is there any kind of noise?

-Can one get rid of it?

Be aware of airline flight patterns, trains, buses.

Some days or times of day can have more than others.

Ask neighbors what their experience has been.

Are there windows that give onto a noisy street?

Can you seal the windows with sound blankets or plexiglass?

Air conditioning can be a big problem. It is impossible to get rid of in post. Turn the system off!

Listen to the sound environment through the headphones; whatever you hear will end up on the tape.

BEWARE OF:

- Refrigerator noise
- AC hum
- Traffic
- Camera noise
- Generator engine noise

To get rid of camera noise: cover the camera with a barney (you can rent one cheap at any camera supply store), or you can cover it with a leather jacket, etc...

2-Does your location have the right acoustic properties?

-Is the location too reverberant?

Reverberant sound is produced in spaces that have hard surfaces off which the sound is reflected. The multiple reflection cause a slight delay in the sound that is called reverberation.

Reverberation makes the dialogue sound tubby and hollow, and tends to make the dialogue harder to understand.

It is impossible to get rid of reverb in post.

Like with noise, microphones are much more sensitive to reverberation than the human ear.

How to detect reverberation:

Stand where your actors will be standing and hold some absorption material (a pillow, folded coat) 2 feet from your mouth. Say something loudly.

Take away the absorption material and repeat what you said loudly.

The difference in the quality of the sound is the reverb.

How to attenuate reverb.

If you are in a large room, move to the center of the room.

-The farther you are from the offending walls, the fewer the reflections.

Place sound absorption blankets (any thick blanket will do) on the wall facing the talent so that it will absorb the sound.

You can also place a blanket on a c-stand facing the actor.

Or, have them face drapes that are hanging in the room.

WHAT KIND OF MICROPHONE TECHNIQUE TO USE?

1- Overhead shotgun on a boom:

A clearer sound is captured when booming from overhead just out of camera range.-use a directional mic: hypercardioid or shotgun (longer reach: more rejection of reverb) mics.

Since the mouth is closest to the mic, voices are emphasized while the downward angle also picks up prop noises and footsteps.

2-cardioid or shotgun on boom from below

It is also effective but it requires more cooperation on the set.

Prop noises and footsteps will be louder, so lines have to be delivered without too much movement.

Try to have the actors sit in the scene.

3-Plant a cardioid or shotgun on the set, where it will cover the dialog.

The problem here is that your talent cannot move around.

4-Plant a wired lavalier on set.

It is small easily hidden, but is not very sensitive and therefore the actors need to be near it.

5-Plant a wireless mic on the set.

It is small easily hidden, but is not very sensitive and therefore the actors need to be near it. Also, there might be a problem with radio interference.

6-Put a wired plant on the actor, and run the cable through their pants leg.

Problem with cloth rustle and hiding the wire.

7-Use a wireless lavalier on actors.

Convenient but problematic:

- burying the mic: muffles it
- performers' movement causes noise
- sometimes you have interference of transmission

CUEING THE BOOM MICROPHONE

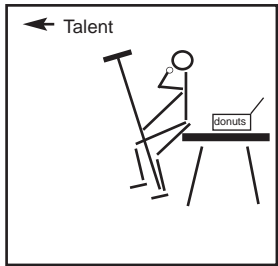
It is important when using a boom microphone to point it (cue it) correctly.

If it is not pointed properly your talent will be “**off-axis**”

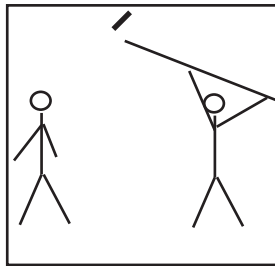
Off-axis sound tends to sound bassier, noisier, and more reverberant than “direct sound.”

Just aiming it in the general direction of the talent will not get you good sound.

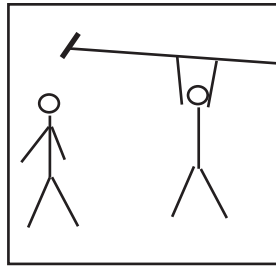
The more directional a mic is (ie., a shotgun) the easier it is to be off-axis.



BAD



BAD



GOOD

If you are booming in a quiet location that has good room acoustics, you might want to use a cardioid mic because it has a wider pick-up pattern. It is easier to cue.

You always want to get the mic as close to the talent as possible, angled down towards the mouth.

Don't boom from right in front of the actors with boom parallel to the floor.

Reverberation and noises from behind the actor will be picked up almost as loud as the voice.

Mouth noise and sibilance is usually projected forward, so a close frontal mic will pick up more of them.

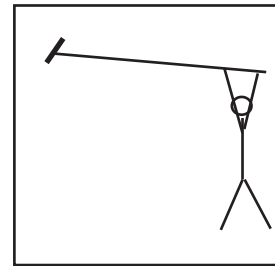
HOW TO HOLD THE BOOM

Hold the boom straight up in an "H" position, not the "Y" position.

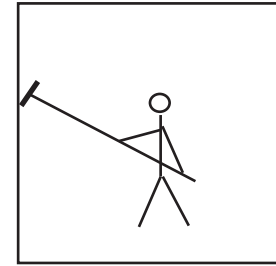
You want to support the boom with your whole body, not just your arm muscles.

It may be tempting to hold the boom like a "flagpole", but this you less control over how the mic is aimed.

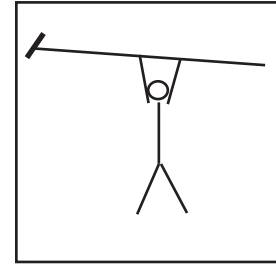
Since the boom itself will be at an angle, it likely that it will cross into a corner of the shot.



BAD



UGLY



GOOD

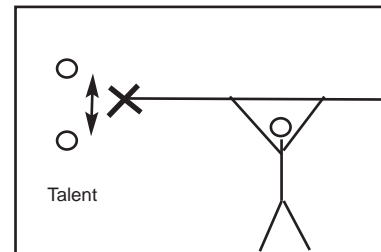
HOW TO MOVE THE BOOM

Do not rotate the boom with your wrist. (Unless you are dealing with a quiet location).

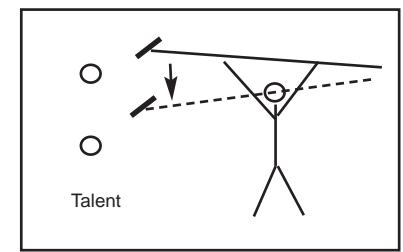
-this will change the angle of the mic in relationship to the background noise.

-You would have a shift in the background noise in the middle of your track.

Pan the boom while the mic at the same angle in relation to the background noise.



BAD



GOOD

CABLES

Make sure you secure all cables with tape so that they won't make noise when moving the boom.

ALWAYS USE A WINDSCREEN

Windscreens protect the mic in case it falls, and it also acts as a filter against some low background sounds.

If you are shooting outside try to use a Zeppelin or a Rycote windscreen. This will cut down on the wind sounds.

MIC /SOUND PERSPECTIVE

Perspective is the distance of the talent from the camera.

In production sound we always want to mic as closely as possible to the talent.

The levels of the talent should be as consistent as possible throughout the scene.

All shifts in sound perspective (both in terms of reverberation and levels) should be subtle and left to the post-production process.

The best way to record a scene in a reverberant space, such as a museum, is to record it all from a tight perspective, and then decide in post to add the reverb.

SETTING UP MIC ABOVE FRAMELINE:

Once the camera crew is done setting up the shot, lower the boom into the shot. The camera operator will then tell you to raise the boom until it just exits the frame.

The microphone should remain right above the frameline during shooting.

This should insure the cleanest and most direct production sound.

Gold Room Microphones

Microphone:	Mic. Type	Use:
AT 4071	Shotgun	Narrow pick-up pattern. Good for use with boom in a noisy/reverberant environment. Harder to cue.
AT 4073*	Short Shotgun	Wider pick-up than reg. shotgun. Good for use with boom in a relatively quiet environment. Easier to cue.
AT 4051*	Cardioid	Wide pick-up pattern. Good for use as a plant mic.
Senn 815	Long Shotgun	Very narrow pick-up pattern. Good for use with boom in a very noisy/reverberant environment. Harder to cue.
Senn 816	Long Shotgun	Very narrow pick-up pattern. Good for use with boom in a very noisy/reverberant environment. Harder to cue.
Senn 416	Short Shotgun	Wider pick-up than reg. shotgun. Good for use with boom in a relatively quiet environment. Easier to cue.
ECM 672	Short Shotgun	Wider pick-up than reg. shotgun. Good for use with boom in a relatively quiet environment. Easier to cue.
ECM 44*	Wired Lav.	Short pick-up range. Good for planting on actor's body.
ME 80	Short Shotgun	Wider pick-up than reg. shotgun. Good for use with boom in a relatively quiet environment. Easier to cue.
ME 88	Short Shotgun	Wider pick-up than reg. shotgun. Good for use with boom in a relatively quiet environment. Easier to cue.
AT 8533*	Wired Lav.	Broader pick-up range than ECM 44. Good for planting on set.
AT 841 PZM	Pressure Boundary Mic	Good for planting on flat surface (table) on set.

(*-Included in sound kit.)

Note: All these microphones require batteries, some of which can be exotic. Please make sure you have extra batteries during production.

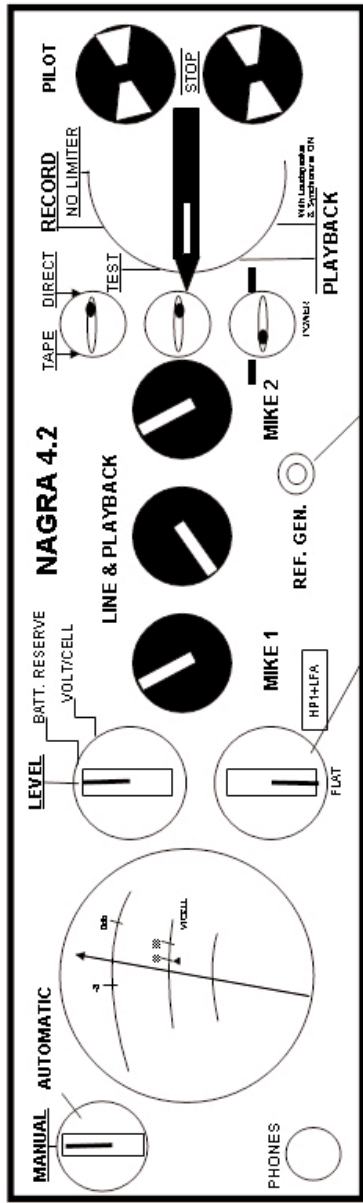
Where to get audio related supplies?:

Edgewise Media
917 E. Katella Ave.
Anaheim, CA 92805
Toll Free - 1- 800-959-5156

Edgewise Media (Hollywood)
1215 Highland Ave (Btw Santa Monica/Sunset)
Hollywood, CA
323 466-8101

Location Sound Corp(They've got everything you've ever wanted for sound, but tends to be expensive):
10639 Riverside Drive
North Hollywood, CA 91602
818 980-9891

THE NAGRA: Quick Start Guide



By Dan Pavelin

TEST TONE
 Lay down at least 30 sec. of test tone at head of each new reel by holding down this button. (Should appear at -8 or -10 dB on Nagra's meter.)
 Don't see the button? Some NAGRA's produce tone by turning this selector switch to "REF" setting.
 Lay down two beeps of tone at end of every take, right before shutting off NAGRA.

STANDARD OPERATION
 • Turn main selector switch to TEST and set input levels using MIKE 1 and/or MIKE 2.
 • Turn main selector switch to 11 o'clock to RECORD
 • Turn main selector switch to 7 o'clock to PLAYBACK
 • To FF/REW, NAGRA must first be in PLAYBACK.
 Then, on top of NAGRA, not the faceplate, move toggle switch in lower left corner . . .
 o to your right to FF.
 o to your left to REW - when REW, you also need to bring down front lever; when finished rewinding, move toggle switch back to center to stop tape, before moving lever back up to its normal position

TAPE
 • Any brand of 1/4" tape will work, but AMPEX 406 is best.
 • Tape speed should be 7 1/2 IPS.
 • AT 7 1/2 IPS: small reel (5") holds 15 min. of recording time
 • large reel (7") holds 30 min. of recording time
 • \$7-10 per 7" reel (30 min.) Cheaper in bulk - don't be afraid to overbuy - for any shoot you will need at least 50% more audio tape than you will film stock, since NAGRA starts before camera, stops after camera, plus you need extra tape for room tone and sounds that have no picture equivalent. You can always sell leftover reels to other film students!

BATTERIES
 • Nagra uses 12 "D" batteries - will last 1.5 - 2 days of shooting
 • Check batteries' remaining power using VOLT/CELL setting, not BATT. RESERVE! Change at 1.2 v or slightly before.
 • Save used batteries - they still have enough juice left to power flashlights, appliances, etc.

The DAT: Quick Start Guide

Check to make sure all the equipment is in the case.

Make sure you have charged some or all of the batteries.

The batteries last about an hour and a half or less.

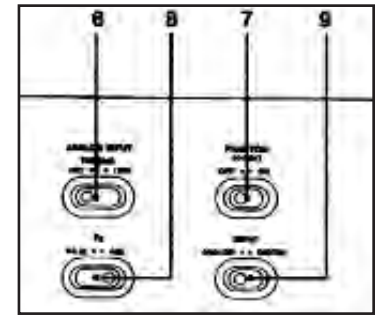
There is an extra charger that comes with the kit so that you can charge while using the DAT.

It takes about 3 hours to charge a battery

On the left side of the DAT make sure the switch is on "operate" unless you are first using the DAT to charge a battery, then it should be on "charge" mode.

On top panel of DAT, make sure that the following switches are set:

#7 If you are using the small mic. power pack the "phantom" power should be "OFF". If you are not using the power pack, and you want to power the mic. directly from the Dat "phantom" power should be "on" (this will use up more of your Dat's battery power).



WARNING: You should not be using the phantom power from the Dat and the power pack at the same time!

#6 Analog input is on "mic"

WARNING: If your sound distorts even though your levels don't go above "0" then you should turn the "-20 pad" on.

#8 "Fs" is on 44.1

#9 "Input" is on "analog"

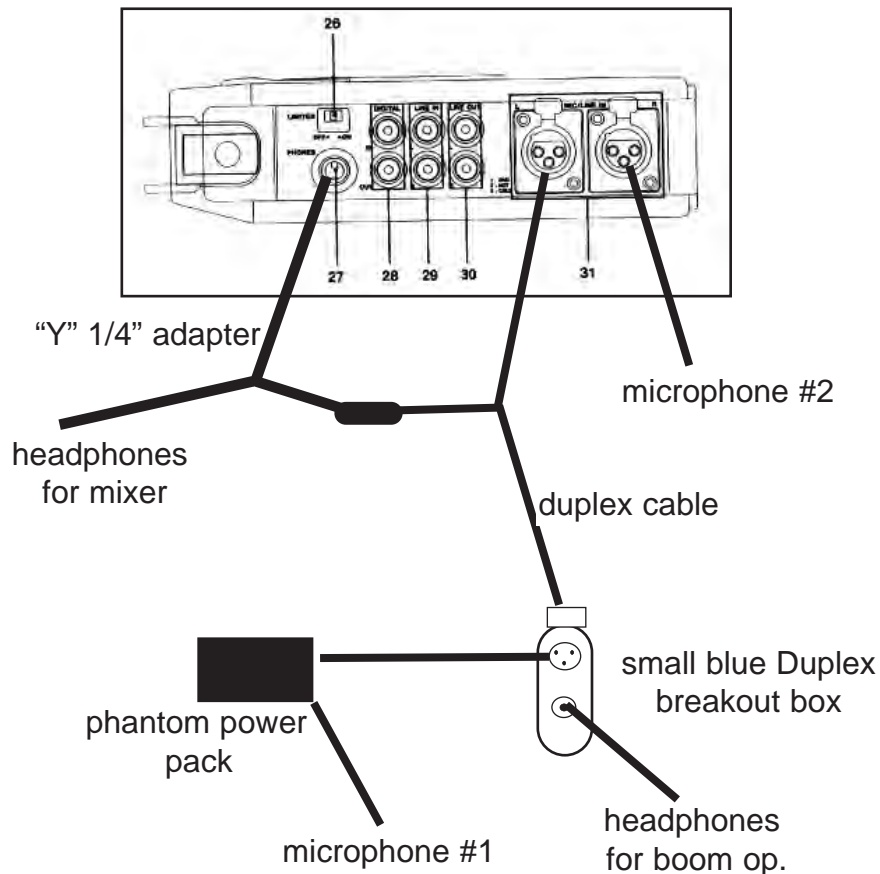
Plug the small "y" 1/4 inch adapter (found in the top compartment of the Dat kit) into the headphone jack (see #27 on top of next page).

Plug one set of headphones into one of the 1/4" jacks on the "y".

Plug the quarter inch plug from the Duplex cable into the other plug on the "y" adapter. (The Duplex cable is the long thick cable that has a 1/4" and XLR connectors at one end and has a thick multi pronged connector at the other end.)

Plug the XLR from the Duplex cable into the XLR Mic. left "line in" #31
 Take the other end of the Duplex cable and connect it to the small blue headphone/mic break out box.

Plug the 2nd pair of headphones and the boom into the break-out box.
 The break-out box can be clipped onto the boom ops. belt.



TO SET LEVELS:

- Press the “rec” #16 button. This will put you in “ record pause” mode. You are not recording but you will be able to hear the sound picked up by the mic. and set your levels.
- Set your headphone levels #18 (Remember these are your headphone levels not your record levels!!!!)
- Set your record levels during rehearsal by setting your average levels on the peak meter (#19) between -12 and -6.
- You can adjust your record levels with the level control dial #17. The inner ring is for the Left mic. and the outer ring is for the Right mic. Line up the “0” together and now you can adjust both sets of levels by turning the outer ring.

TO RECORD

As you hold down the “rec” button press the “ play” button. The little red light should be on next to the “rec” button and a “play” triangle should appear on the display. You can also visually make sure the tape is turning.

After the director yells “cut” wait a few seconds and then press the “stop” button.

Rewind the tape and listen back to make sure the sound is ok.

SETTING AN ID # :

You can mark the head of each shot with an ID # (Track number) by following these steps:

This procedure only seems to work if you do it from the beginning of the tape.

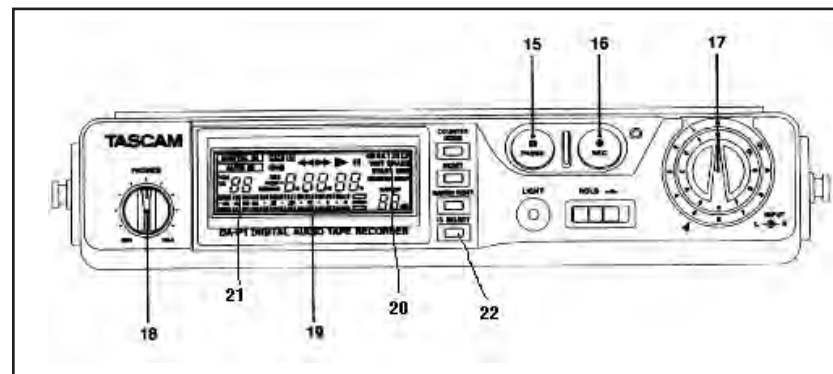
Before going into “record” mode press on the “ID SELECT” (#22) button until “WRT START” (usually you have to press it twice) appears in the upper right hand corner of display (#20)

After they “roll sound” begin “recording”, wait a few seconds, and press the “rec” button again.

An ID # should appear on the left hand side of the display (#21).

At the head of every shot repeat the procedure.

Write these numbers down in the Sound Report.



THE FOSTEX FR-2 QUICKSTART GUIDE

by Prof. Dan Pavelin – first edition, 9/15/04

WHAT IS THE FOSTEX FR-2?

The Fostex FR-2 lets you digitally record your production sound on-location onto CompactFlash memory cards (CFC), where it is stored as a series of Windows-based audio files (wave files). After recording, these files can be easily exported off the FR-2 directly onto a PC hard drive via a USB connection.

HOOKING UP POWER

Use the power supply provided in the Fostex kit whenever possible. DC plug goes into the jack on left side of unit, towards the back.

If you must use batteries, the unit takes 8 AA – insert them into the back of unit by using a coin to turn the silver latchscrew 90 degrees counter-clockwise, then press down on the two black tabs to release battery panel.

A fresh set of 8 AA batteries will last 90 minutes or less; the battery icon in bottom right corner of the front panel LCD display will be solid black at full power and will decrease as batteries lose their juice.

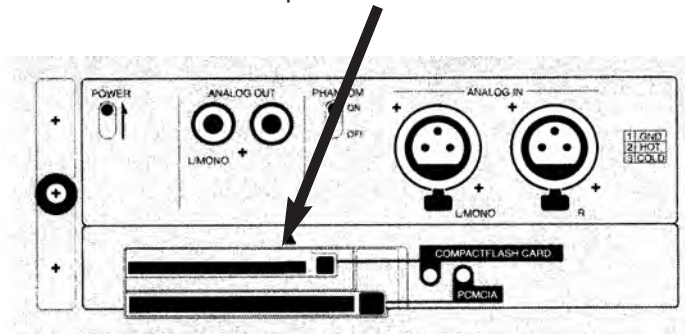
TURNING THE UNIT ON

The power switch is on right side of unit – lift up once, and LCD display on front panel will light up. (Lift up again to turn unit off.)

INSERTING A COMPACTFLASH CARD

Your Fostex kit contains two 512MB CompactFlash cards for you to use during your shoot. Each 512MB card will hold approx. 90 minutes of mono audio (if you are recording production sound using one mic only), or 45 minutes of stereo audio (if you are recording using two mics at once).

On the right side of the unit, you'll see two horizontal slots. The smaller one on top is where the CFC will be placed.



On the right side of the unit, you'll see two horizontal slots. The smaller one on top is where the CFC will be placed.

(Note: The slot may currently be filled by a gray plastic "dummy" plug. If so, push the eject button to the right of the slot to remove the gray dummy plug.)

To insert the CFC, hold the card so that the side with the Chapman University Gold Room barcode is on top; the edge of the card with pinholes should be facing away from you. Insert card in slot and gently push into place.

If the CFC is brand-new, the LCD display will say "Warning: Illegal Format!" and prompt you to push the MENU/ENTER knob on the front panel. It will then guide you through formatting the card. Follow all instructions given onscreen, and when formatting is completed (about 5 sec.), the LCD screen will return to its normal display.

If the CFC is previously-used, the display will say "Loading: CFC?" Highlight "YES" and press the MENU/ENTER knob on the front panel. LCD display will go to normal.

You may now wish to format and wipe the data from the previously-used card so that you can start fresh, as if it were a new card.

- Press the MENU/ENTER knob
- Turn the knob until "Disk" is highlighted and press knob
- Turn the knob until "Format" is highlighted and press knob
- You'll get a warning screen saying it's going to erase the data, but press knob anyway. After formatting is finished (about 5 sec.), LCD display will return to normal.

SETTING UP FILE NAMES

Every time you record with the FR-2, you are going to be recording a new "file" on the CFC. These files can be named very precisely by setting a Default File Name. Your first recording will automatically be called "Your Default File Name_001," the second will be "Your Default File Name_002," etc.

- Press the MENU/ENTER knob
- Turn the knob until "Setup" is highlighted and press knob
- Turn the knob until "Default File Name" is highlighted and press knob
- You'll probably see a collection of possible file names you can choose from – "Scene01," "Scene02," etc.
- If one of the existing Scene #'s matches yours and you want to use it as your Default File Name, turn knob to highlight it and press knob; turn knob until "Select" is highlighted and press knob. Press HOME button on front panel to exit menu.

- If you want to create a new Scene # as the Default File Name, turn knob to highlight any file name and press knob; turn knob to highlight "Rename" and press knob; by turning and pressing around the alphanumeric characters on the display, you will be able to spell out your new Default File Name. When finished, highlight "OK" and press knob a final time. Press HOME button on front panel to exit menu.

Your first recording will now be "SceneXX_001," your second will be "SceneXX_002," etc. When you change Scene #'s or letters, set a new Default File Name by repeating the steps above.

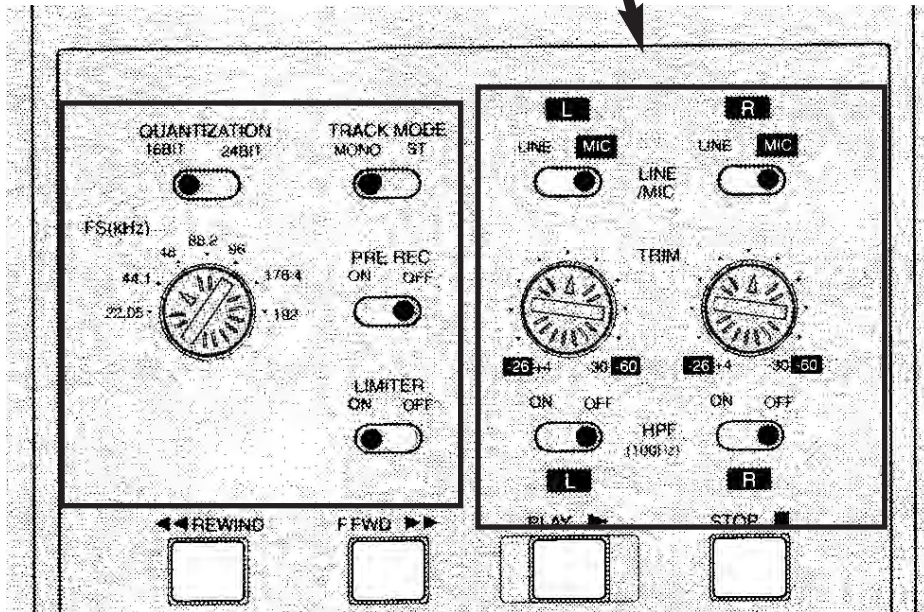
SETTING UP THE TOP PANEL

Verify that your top panel controls match the diagram below.

QUANTIZATION: Set to 16BIT
 TRACK MODE: Set to MONO if recording with one mic, STEREO if you have two mics
 FS(kHz): Set to 44.1
 PRE REC: Set to OFF

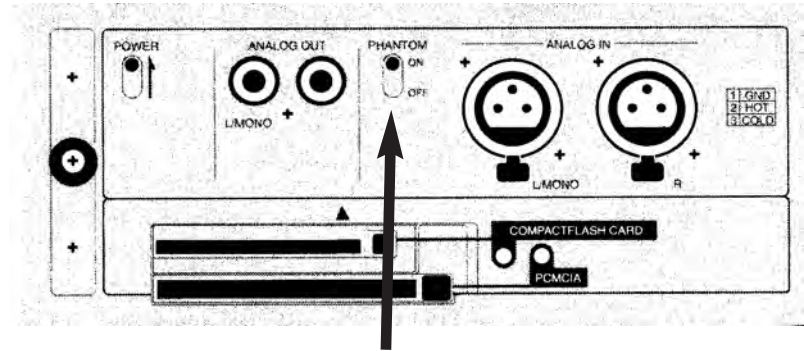
MIC SETTINGS, L & R

- Set LINE/MIC settings to MIC
- Turn TRIM controls to approx. 12 o'clock
- Set HPF to OFF



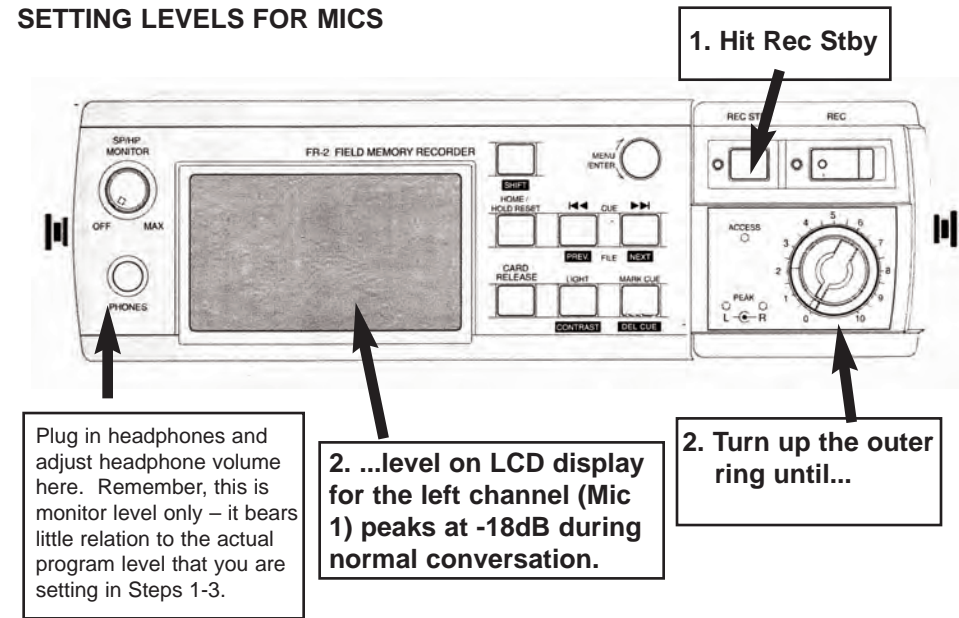
HOOKING UP MICS

On the right side of the unit, plug in the cable for your mic into the ANALOG IN – L jack. (If using two mics, plug the second mic into the ANALOG IN – R jack.)



You will also want to make sure PHANTOM power is ON. Do not turn on the Phantom power on the FR-2 if you are using the mic power supply!

SETTING LEVELS FOR MICS



Got two mics rather than one? The outer ring controls the input level for Mic 1, the inner ring is for Mic 2. You'll see two levels in the LCD display, one for left (Mic 1) and one for right (Mic 2). Adjust input controls accordingly until you achieve an average of -18dB for each mic.

Hearing distortion? It's probably not the input level you just set. Try turning down the TRIM control for the mic on the top panel as necessary.

RECORDING

Levels all set? Make sure you're still in REC STBY (green light) and then move the red REC switch on front panel to the right (red light). Hit REC STBY to stop recording.

PLAYBACK

To listen to the last file you recorded:

- On the front panel, press the I<< CUE button.
- On the top panel, press PLAY.

To listen to a previous file you recorded:

- On the front panel, press the I<< CUE button while holding down the SHIFT button until you see the name of the Scene#_Take# you wish to listen to listed on the LCD display.
- On the top panel, hit PLAY.
- If you wish to go to a later take, press the CUE >>I button while holding down the SHIFT button until you see the name of the Scene#_Take# you wish to listen to listed on the LCD display.

Regardless of what you've just listened to, you cannot accidentally record a new file over any of this previous material; every time you enter REC STBY and move the red REC switch, the unit will place a new file onto the CFC after the end of the last file you recorded. (Great feature!!)

REVIEW OF LCD DISPLAY

File #: this advances sequentially on the CFC every time you make a new recording (i.e., a new file)

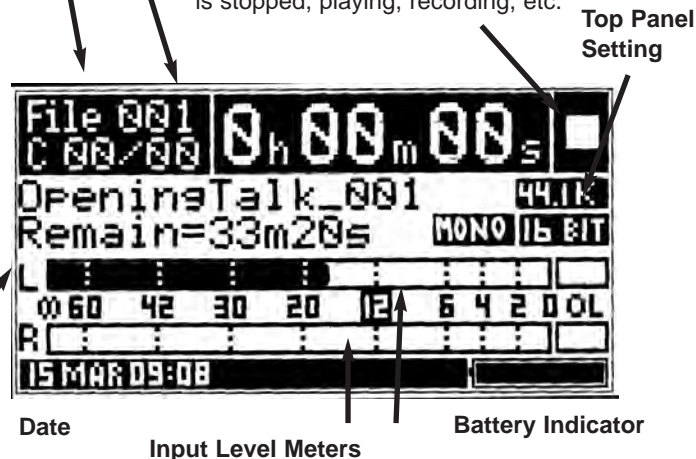
Running time: this is the running time of the individual file you are currently recording/playing, not the overall time on the CFC,

Transport icon: indicates whether unit is stopped, playing, recording, etc.

Cue #: cue points within a file – not necessary for most students to use; ignore.

Default File name and take#

Total remaining time on CFC for new recording.



EXPORTING AUDIO FILES FROM CFC TO PC

On the unit, press the MENU/ENTER knob, turn the knob to select "USB mode," and press the knob again. Leave the unit on the "USB mode" screen.

Using a USB cable, come out of the USB port on the left side of the unit and into the USB port of a PC running Windows 2000 or higher.

(Note: The FR-2 does not transfer files to Mac-based systems.)

Under "My Computer," you will see a new drive marked "Removable Disk." Click on it, you'll find a folder entitled "bwff," and inside that folder will be all the wave files you recorded on the CFC, labeled exactly as they appeared on the LCD display. Simply drag these files to your removable hard drive, your internal hard drive, etc.

Once copies of these files are safely on another drive, disconnect the USB cable between the unit and your PC, exit the "USB mode" screen by pressing the MENU/ENTER knob, and you are now free to reformat the CFC and fill it up with new recordings for your next day of shooting, etc.

NEED FURTHER HELP?

This QuickStart Guide is only intended to cover the very basics of the unit. If you wish details on more advanced functions, please consult the FR-2 manual which is included in each Fostex kit from the Gold Room.

The Panasonic 24P Audio Mixer Kit: Quick Start Guide

When using the Panasonic 24P camera you will want to record the production sound directly to the camera. The sound on the camera is the same quality as the sound on a DAT or FR-2. So there is absolutely no reason to record to DAT, unless, of course, you enjoy spending countless hours synching dailies.

In order to get the best possible sound while using the 24 P camera you want to use the "24 P Mixer Kit". This kit includes:

- 1 Field Mixer
- 2 Ultra-DI Boxes

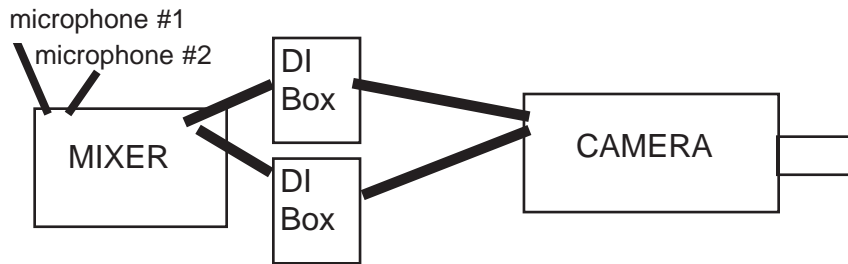
The field mixer is used to give the mixer independent control over the levels. The Ultra-DI boxes ensures a clean signal between the mic and the mixer.

In addition to the kit you will also have to check-out:

- Microphones (See the list on page 25)
- Cables (You will need at least 2 XLR's and one Phono to XLR)
- 2 sets of headphones (with a headphone extension cable for boom op.)
- A boom pole

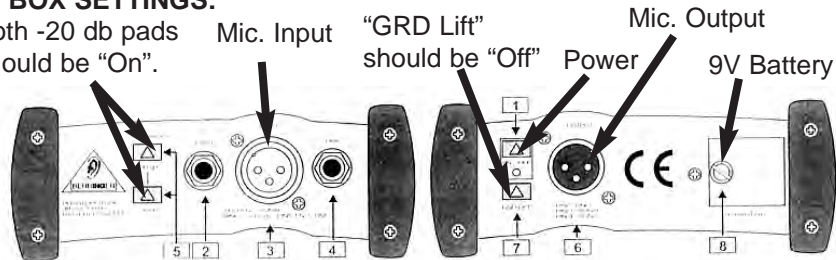
CONNECTING THE 24P MIXER KIT (Diagrams are on p.24)

Connect the mic to the DI box. If you use 2 mics you will have to connect each one to the mixer via the "Mono 1" or "Mix 1" inputs at the top of the mixer. The mixer is connected to the DI Box via the "Main Mix" outputs on the mixer. The DI bo(es) are then connected to the camera via the Mic. inputs.



DI BOX SETTINGS:

Both -20 db pads should be "On".

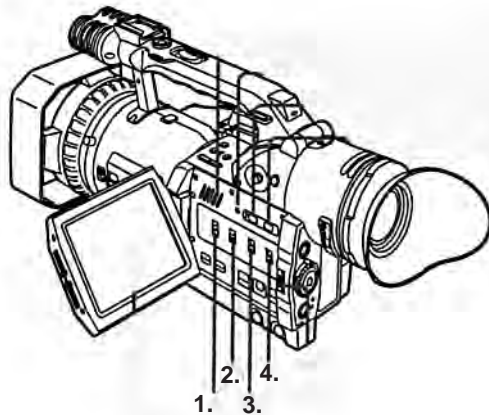


POWER: You can use a 9 volt battery to power the unit or you can use the "Phantom Power" from the mixer. The advantage of using the Phantom power from the mixer is that it will also power the microphone. You will therefore not have to use the separate mic. power pack.

If you are using the mixer's phantom power, the power light will be solid as soon as the unit powers up. If you are using the battery you will have to turn the unit on. Once it is powered-up, the light will flash once every second.

24P CAMERA SETTINGS:

1. Ch. 1 Select "Input 1"
 2. Ch. 2 Select "Input 2"
- Mic Power 48V
3. Input 1 "On"
 4. Input 2 "On"



POWERING THE SYSTEM:

While most of the kits are equipped with a battery operated mixer, 2 of the kits have mixers that are not battery powered. The larger Behringer Eurorak MXB1002 is both battery and AC powered. The battery compartment is under the mixer. You will need a Phillips head screw driver to access it. The mixer needs 3 9 V. batteries. The smaller mixer, the Eurorack UB1002, is only AC powered. Make sure you get the mixer that is appropriate for your production.

The DI box needs a 9 V. battery.

SETTING LEVELS:

You will want to monitor and set levels using the Behringer mixer. The "Mic Gain" level should be set at 12 o'clock. The fader on your "mic channel" should be set to "0". All boosting of the levels should be done from the "Main Fader". You want to set your average dialogue levels at -20db on the mixer's meters. The -20db indicator does not have to be always "on," but it does have to "flash" pretty consistently.

CHECKING LEVELS ON CAMERA:

Because there is not a direct correspondence between the meters on the mixer and the ones on the camera we highly recommend that you listen back to the sound on the camera. Check the camera meters to make sure you are getting good levels. Make sure you do not go into the red!

