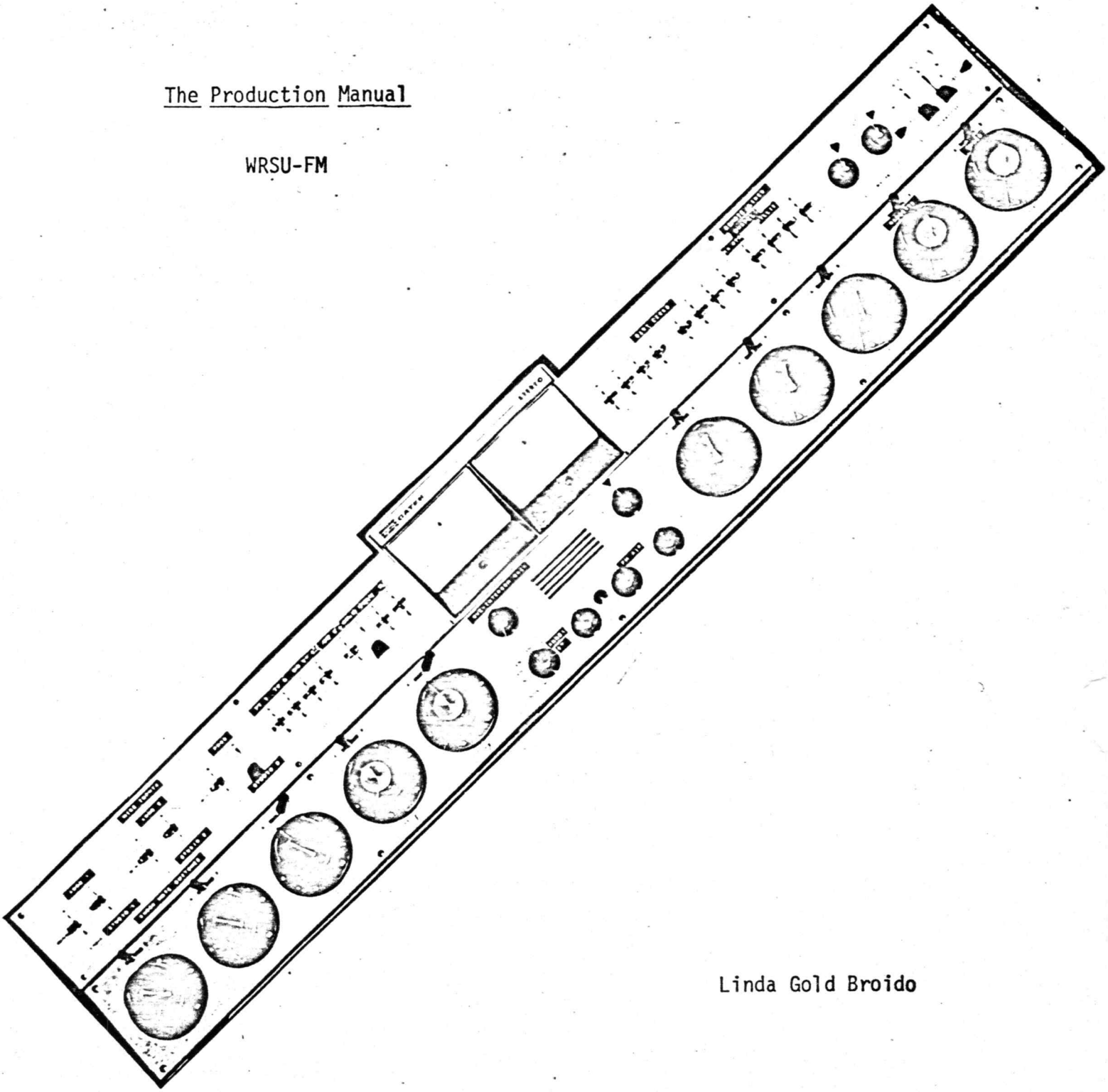
The Production Manual

WRSU-FM



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THE BOARD

The larger knobs, those with the colored centers, are called pots. This is short for potentiometer. They are actually not potentiometers, but are precision step attenuators. It doesn't matter what you call them; essentially they are volume controls.

Above each pot are vertical switches which select what source the pot controls. For example, when the vertical switch above pot 1 is up, pot 1 controls the Announce-Booth-1 microphone; when the switch is down, pot 1 controls microphone 1 in Studio-A. The vertical switches for the turntables, tape cart machines and Scully tape decks are similiar, except that when the switch is up it is off and when it is down it sends the signal from the piece of equipment on its label to its corresponding pot.

After you have assigned the equipment you wish to use to pots by means of the vertical switches, the next step is to turn the pots on, or "open" them to the main circuit in the board. This is done by throwing the horizontal switch above each of the pots to the right; to the "P" position. Now the equipment is "live".

To hear what is going through the board, use the monitor. There is a small three-way knob near the center of the board with positions "A", "P", and "X". Turn it to "P". To change the volume of the monitor only, there is another small knob to the left of this one. This affects only what you hear, and not what is going on tape or on the air. If you wish to change the volume level of what you are taping, the colored pot itself is the volume control. The "X" on the A-P-X switch is the air signal. This is what WRSU-FM is actually broadcasting at that time. You may also listen to what is going through your board through headphones. They plug in under the right hand side of the table.

The meters are very important. When producing a show, the most un-professional thing you can do is to have your volumes vary. One song should be approximately the same average volume as the next. The announcer should not sound like he is either screaming or whispering in comparison to the music. A person cannot judge the comparative volumes accurately enough by ear, so he must watch the meters. It is the responsibility of the engineer, not only the speaker, to control the volume, and if necessary stop and go back. Keep your volumes generally between 40 and 90, and always out of the red zone. Red means distortion. Above everything, keep your volumes consistant.

MICROPHONES

Mikes come in on the red pots, which are the first three on the board. Each pot controls two mikes. You choose which one you want with the switches above them. The most important thing to watch when using mikes is the muting.

The mutes accomplish two things. First, they turn off the monitor speakers in the room where a mike is "live", so as not to create an echo of what was just said being picked up again as feedback, and second they light the "ON-THE-AIR" lights above the doors to the room where the "live" mike is so that no one enters. The control for the muting system in production is near the left hand side of the board, in a separate little box on the counter. You must be certain that after you choose your mikes and turn the switches above their corresponding pots to the proper position, that the three switches on the muting box are in the same three positions. This is the only way the muting system will know where its services are needed.

For normal use, flip the horizontal switch above the pot to "P" and turn up your volume. As soon as the switch is on "P", the mute will be functioning if the mute switches are set correctly. If the volume is all the way down, you can speak and the mike will not pick it up. It is often a good idea to switch the mike on a little early and then bring up the volume when you actually want to speak. There is sometimes an actual click produced by the switch being thrown on while the mike volume is up, and when this doesn't happen, there are still faint background noises, some created by the equipment itself, instantly appearing instead of slowly fading in so they won't be noticed. Both of these noises sound very unprofessional. Things go smoothest when the announcer can speak the second the record ends, so you might want to turn on his mike as the record begins to fade.

The closer the person stands to the mike, the lower the volume has to be, and generally the better the quality of the results. Loud noises at almost any distance will severely damage the ribbon mikes in Studio-A, so be careful.

If you have on your staff someone who will engineer, and others who will do most of the talking, the best results will come from using Studio-A. The mikes in there are very good, and are isolated from the equipment noises in production.

The Studio-A mikes must be plugged into microphone connectors mounted on the wall. Use "PROD-1", "PROD-2", and "PROD-3". These are the downward positions of the vertical switches over the mike pots, and on the muting box. The mikes also have to be set with a screwdriver to unidirectional, bi-directional, or nondirectional, by the screw on their fronts. This means one person speaking, two people speaking from opposite sides, or picking up from all directions. If you can use uni or bi, do so because the quality is better. On uni, the side you

speak into is oppcsite the side with the screw plate. If you want to change a microphone setting, ycu'll find a screwdriver in the right hand draw of the table in Studio-A.

The microphones in Studio-A have the option cf either being mono or stereo. For normal speaking, mcno is best because you don't have tc worry about balancing the channels, and two people speaking, one cut of each speaker, cften scunds odd.

For mono, when you plug a cable intc the wall, use the jack marked left channel for each mike. For stereo, plug scme mikes into left channel inputs, and scne irto the right. If two mikes are plugged into the same set of mike jacks, one left and one right, their vclumes cannot be ccntrclled separately. When using the mikes in stereo, flip the switch above each mike pot from mono to stereo.

When using microphones, try to direct the air frcm your breath above or tc the side of the mike. Air blowing straight into the mike will cause unwanted noises ard pcpping.

THE TURNTABLES

The twc turntables can both come up cr either of the two silver pots. Dc not leave their speed ccntrcls engaged when not using them, as this wears them cut. Push the speed selector up and into the rest.

When you press the switch tc start the turntables spinning, it takes about a half a seccnd tc get up to speed. This means that the reccrd must be turned back about a third of a turn before the music begins. This is known as "cueing up a cut". Put the needle dcwn dcwn between the scngs and wait for the song to begin. Then place a finger on the side of the reccrd, push the record back, and stop the turntable. This will often be done through cue. See CUE.

THE SCULLYS

All ccntrcls referred to in this sectien are on the Scully tape decks themselves. To play back from the Scullys, put the second knob from the left (on bcth preamps abcve the tape deck) to "safe" (which keeps you from accidently recording on top of what you are listening to), and the second knob frcm the right to "PB" (playback). Keep the playback volume krcbs around 5 unless you are listening directly through headphones. Then you must turn them higher. Make sure the tensicn switches match the reel sizes, lcw for a seven inch reel, high for a fifteen inch reel. Then hit the Scully up like any other input intc the bcard.

To record, put the record volume to around 5, the second knob to "line", the switch to the right of the meter to "LINE TERM ON", and the next switch to "REC". Make sure the tension switches match the reel sizes. The capstan switch changes the speed from 7 1/2 to 15 ips. Almost anything for broadcast at WRSU-FM should be recorded at 7 1/2 ips. To begin recording, press both the red record and the green start buttons on either the remote control box or the Scully. The red lights next to the meters will then light. Remember to set both the left and right channels (top and bottom layers) the same. To stop recording, hit the white stop button. When using fast forward or rewind, use the other one to slow the tape down before pressing stop. Tape will be all over the floor if you don't.

Before recording, you should make sure that the meters on the Scully indicate volumes at the same levels as the meters on the board. This way, you know that the volume you see on the board is the same as what is being recorded. To do this, find the tape cart marked "1000 hertz", and play it. adjust the pot so that the meters on the board read on the line between the white and red zones. Set the Scully to the recording positions, and adjust the record volumes to the same spot on both meters. Both sets of meters should continue to read the same.

When splicing tape, use the diagonal slot in the splicing block. This will reduce the noise of the splice. After you've cut a tape, you can run it past the heads without a take-up reel by using "edit". Thread the piece of tape past the heads and between the rubber wheel and peg (the capstan). Press the yellow button and give the tape a little pull to help it get up to speed.

Before recording, "bulk" or erase the tape, and playback a small portion to be sure it is completely erased. The erase heads on the Scullys are often not up to par, so it is best not to take chances and begin with a "clean" tape.

When you erase a tape, don't think of it like pencil being erased. Think of it instead like recycled newspaper. Magnetic patterns on the tape are not really erased, just reorganized into random patterns you can't hear. Remember that the idea of erasing is to jumble the magnetic patterns you make when you record. If you let the reel of tape sit on the bulker, It will form new patterns like "swish, sizzle." This makes awful background for your program to record over. You must keep the tape moving when near the bulker, so as not to allow magnetic patterns to form. Move the tape in circles, and don't stop, even for a fraction of a second, until the tape is arm's distance from the bulker. <u>Then</u> turn off the machine.

THE CART DECKS

There are three buttons on each cart deck. From left to right they are: stop (red), on-off (red), and start (white)

To play a cart, simply press the on-off button (which will then light up), and insert the cart clear side up in the right side of the slot. "Hit up" one of the two cart decks on one of the two blue pots, and press the start button on the cart deck.

Only the top deck can record. Like the Scullys, anything going through the board will automatically be recorded when the record mechanism is on. Before recording, make sure the cart is very well erased. The cart decks do not have erase heads. Make sure that the cart deck is not "hit up", and press the red button nearest the top of the cart machine. This is the record button. When ready to record, just press the white start button. When finished recording, hit the stop button. Do not record to the very end when the machine clicks itself off. This will leave a "beep" sound at the end. It will sort of record itself shutting off. You always must hit the stop button yourself.

The way a cart "re-cues" itself, or brings itself back to the beginning to be played again, is by searching for an inaudible tone which is produced the moment you begin to record. Whenever the machine hears this tone, it will stop. Because of this, you can put more than one segment on a cart, and it will stop after playing each one. If you are recording a promo, record it as many times as it will fit on the cart so that it will re-cue fast. For example, record a 30 second promo twice on a 70 second cart with about 5 seconds between each copy.

If you use the same song each week as a theme, you might record it onto a cart so as not to wear out your record.

When finished using the cart machines, press the on-off button and the light will go out.

It is usually a good idea to record a promo on a Scully, and then transfer to cart, because reel to reel tape is a lot easier to work with.

CASSETTE & TUNER

The two yellow pots control the cassette recorder and the tuner. Cassette recorders are often the only way to get "on the spot" audio. They should not be used without regard, however, because the quality of the sound is nowhere near as fine as from our Scullys, but cassettes do have their place. Plug the cord which pokes out of the counter near the cart rack into the monitor output of the cassette machine. Then hit it up on pot 9. Through patching, you can also record onto the cassette.

The tuner in the patch bay can be hit up on pot 10, if for any reason you should want to monitor another station.

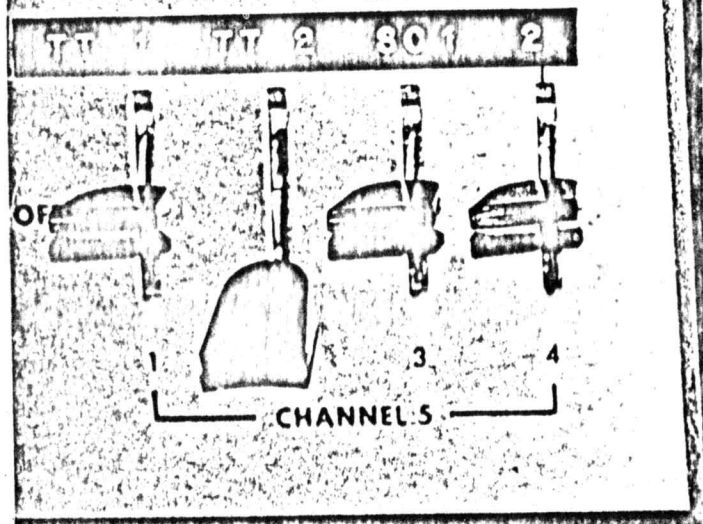
CUE

Cue is a completely separate circuit through which you can hear things you don't actually want to go through the board, or "on the air". For example, you can listen to or cue up a record or tape while recording something else. Its volume control is a small knob near the center of the board.

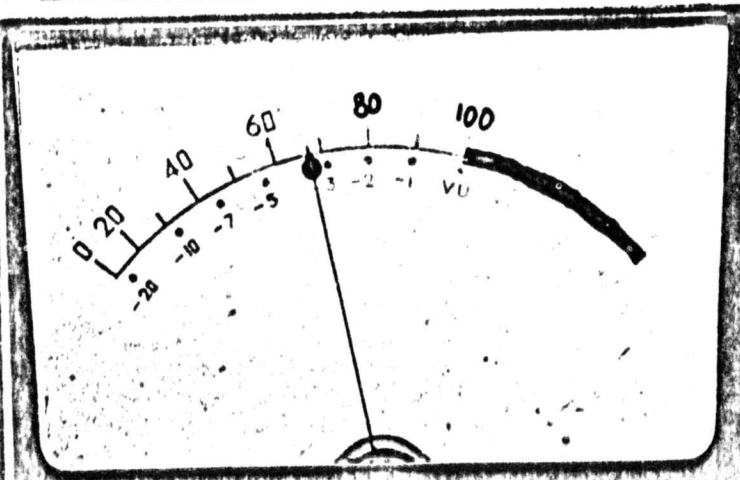
To put something into cue, turn its pot all the way down to the cue position until it clicks. This will work on almost anything except the microphones. One disadvantage is that you must listen to cue through a small speaker in the board.

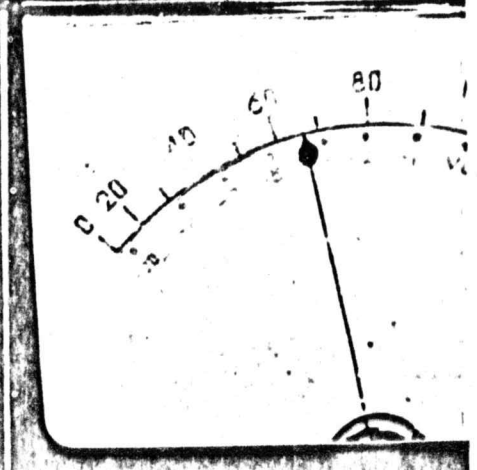
AUDITION

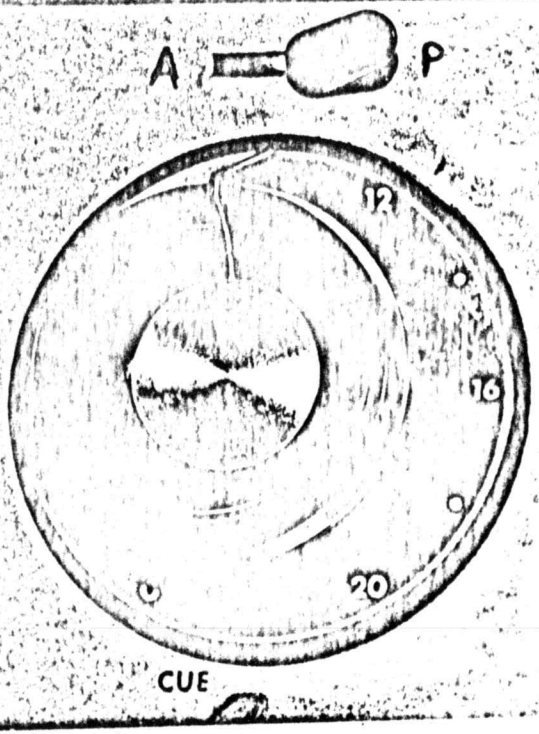
There is another way to hear a record, tape, etc. which some people find better than cue. This is the audition circuit. Just as moving the switch above the pot to "P" enters the pot into the program system, moving it to "A" enters the pot into the audition system. Audition is completely separate from program, so anything you do on that will not interfere with programs being taped or broadcast. One advantage to using audition instead of cue is that you can hear it through the regular monitor speakers instead of the little speaker in the board. To do this, turn the A-P-X knob to "A". This turns the monitor to audition. You can now hear whatever is in audition over the speakers. This results in much greater audio quality than cue. Another advantage is that the microphones will function on audition, whereas they won't on cue. This is useful for testing purposes.



GATES







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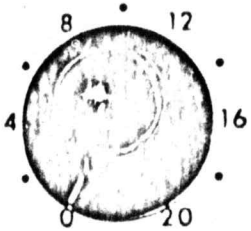
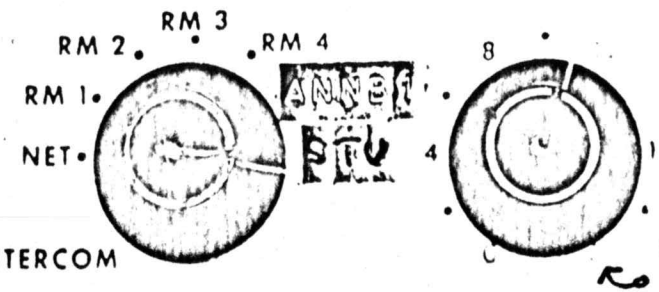


VU2

AL 2

AL 1

monitor selector



MONITOR
Volume

Left: Turntable speed selector disengaged.
Lower Left: Microphone jack in Studio-A.
Below: Microphone in Studio-A being adjusted.