to go beyond existing amplifier constraints. So in my crazed vanity I would have to build an absurd 250 lb. amplifier. But the OTL-1 is not perfect in the sense that like all tube amplifiers it is load sensitive. There were many marvelous speakers that the amplifier didn't like and just like the rest of you horny bastards I often times like to get down with my bad musical self and feel the earth shake musically. I wanted a big powerful OTL-1 that would put out at least 500 watts. I could have made one using about 20 tubes per channel and a comparable power supply—the amplifier would weigh about 500 lbs. If you think I am mad let me assure you that we went ahead and built such an amplifier—one channel only. Please note the picture. Are you ready to whip out your Visa or Mastercard or American Express card and sign on the line for a $25,000 tube amplifier that will win you the MOST VALUABLE CUSTOMER OF THE YEAR AWARD from your local electric company and require the services of a live-in technician and is the most sophisticated wall paper peeler or roomheater you have ever owned? But who cares. The sound quality of this amplifier is so excitingly dynamic that we warn you that you must wear a diaper when listening to it just in case you loose control. It is possible.

This form of audio mania is responsible for our MOSCODE LINEUP. You will note something quite strange. We have introduced a 150 watt and a 300 watt (500 into 4 ohms) amplifier at the same time—very unusual for a high end company. In addition the lowest powered amplifier the MOSCODE 150 will be introduced last. That's all backwards according to the rules of the audio industry. I was musically horny so we developed the MOSCODE 600 first. I couldn't help myself—I just had to listen to a high powered refined amplifier. There were none according to my ears—other than that single 24 tube 500 watt channel.

George Kaye used the same engineering logic for the MOSCODE AMPLIFIERS as he did for the Futtermans. By varying the degree of sophistication in the power supply design, you can execute the same circuit in many forms. Anyone who buys the MOSCODE 150 is listening to the same audio circuit in the MEGAMOSCODE 1000. THE VARIATION IN SOUND QUALITY IS DIRECTLY RELATED TO THE SOPHISTICATION OF THE POWER SUPPLY DESIGN.

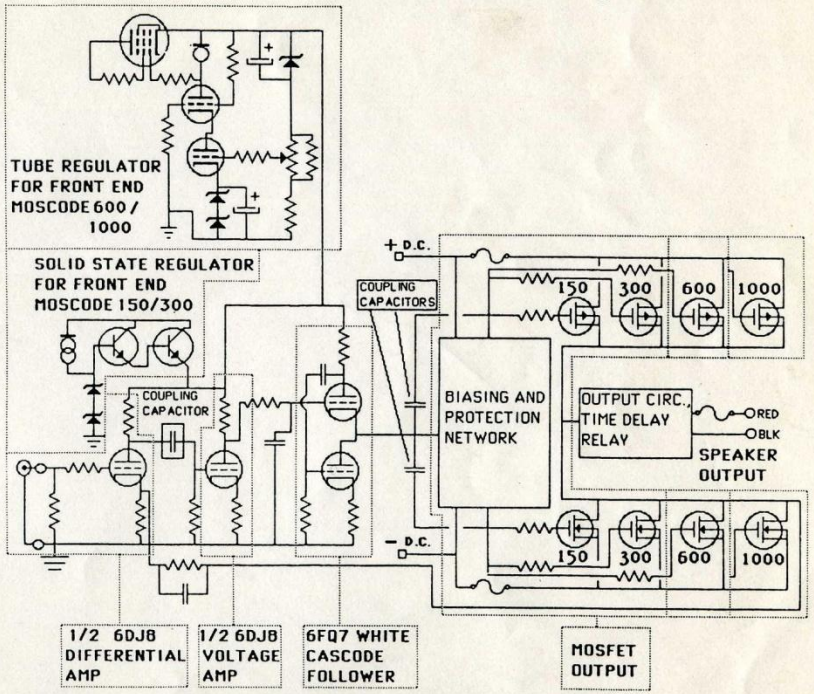
To be sure, the MEGAMOSCODE 1000, with its dual mono power supplies, will out-perform the less sophisticated MOSCODE 150, but that is not what is significant. No indeed. What is important to determine is if our claim is true: THAT AT EVERY PRICE MOSCODE AMPLIFIERS WILL OUT-PERFORM AMPLIFIERS THAT COST MUCH MORE MONEY.

What is most exciting about our experience with MOSCODES are the phone calls we get from music lovers who for the first time have heard state of the art tube gear and have *not* had to go into hock to do that. I heard some big speaker system which always sounded quite artificial to me transformed by the MOSCODE 600 amplifier because for the first time there is a powerful and refined tube amplifier at a reasonable price.

MOSCODE™ 150/300, and 600/100 TUBE AMPLIFIERS

Before I jump into the description of the circuit let me explain the similarity and difference between the MOSCODE 150/300 and 600/1000. These amplifiers use the

same audio circuit—6DJ8, 6FQ7 (tubes) and MOSFETS outputs. They have regulated power supplies on the input circuit. The 150/300 has dual mono solid state regulation while the 600/1000 has dual mono tube regulation that is similar to the regulators in the Futterman amplifiers. Of course the 600/1000 has more output devices of a higher voltage rating. You will note the remarkable simplicity of the circuit which is largely responsible for the delicate open sound of these amplifiers. The "front end" of the amplifier consists of a dual triode 6DJ8 tube that acts as both a differential amplifier and a voltage amplifier. The 6FQ7 tube is also a dual triode tube configured as a WHITE CASCODE FOLLOWER. The MOSFET output stage uses complimentary output devices in a source follower configuration.



Now let us trace the signal traveling through the amplifier. The signal enters the first triode of the 6DJ8 which is a differential amplifier. This amplifier acts to separate the signal into "positive" and "negative" aspects of the signal. The signal is then fed into the voltage amplifier which is the other triode contained in the 6DJ8's glass envelop where it is amplified to sufficient gain that is required for the driver stage. The driver stage is quite unique in that by configuring the 6FQ7 as a "WHITE CASCODE FOLLOWER" we are able to create a low impedance tube driver stage (6 ohm). This is quite unique because tube driver stages are normally of relatively high impedance (above 1000 ohm), and will not drive the gates of the MOSFETS properly. The original research on the design of WHITE CASCODE FOLLOWERS was done by Bell Laboratories in the 1950's. The WHITE CASCODE FOLLOWER then drives the complimentary pairs of MOSFETS in the output stage.

It should be noted that both amplifiers have 45 second turn on delay circuits so that the amplifier can stabilize before it operates. This eliminates the possibility of thumps going to your speakers. In addition the Moscode amplifiers have protection heat sensing circuits that will turn off the amplifier if they get too hot. Because of the enormous power of the 600/1000, they also have a two speed fan that is used to cool the tunnel heat sink. A subsonic DC offset protection circuit is also included. which will protect your speaker if any faults appear in any part ot your audio system.

MEGAMOSCODE™ 1000

This is the most sophisticated execution of the MOSCODE AMPLIFIER CIRCUIT. The benefits of dual mono power supplies are quite evident here as these amplifiers will reveal the most refined spatial characteristics. There is an additional level of sweetness and grace in the reproduction of the upper frequencies relative to the MOSCODE 600. We find it hard to imagine that you would ever need more power, but rest assured that this amplifier gets off on reproducing those demanding musical passages that leave other amplifiers screeching and gasping for breath. While this is the glory of the MEGAMOSCODE 1000, I still prefer it on either the Stax or Quad electrostatic speakers because these speakers will reveal its more subtle nature which is highly cultivated because George Kaye designed this amplifiers with the same tube regulation that is used in the Futterman OTL amplifiers.

Do you need the refinement of the OTL-1 and a great deal of power? Then the MEGAMOSCODE 1000 with its gentleness of a butterfly and its muscles of a lion will open new vistas of musical excitement. Pumping 500 watts a channel into 8 ohms (800 into 4 ohms) shall teach you new respect for tube audio gear. As this amplifier requires at least a 30 ampere wall outlet you may have to install a special outlet to use this amplifier. Be sure to keep glycerine pills and oxygen near your listening seat.

MOSCODE™ 600

The MOSCODE 600 is transforming our idea of the possibilities of music in the home. Anyone who owns any of the large electrostatic speakers like the ACOUSTAT, MAGNEPAN or those refined large scale dynamic speakers like B and W, KEF, SNELL, VANDERSTEEN, POLK, DAHLQUIST will have to accept at this moment my assertion that you have absolutely no idea of how good your speakers are until you have listened to them with this amplifier. From the refinement point of view, this amplifier should be priced at $8000 compared to the OTL-1. From the dynamic point of view it should be $100,000 using the same standard. At $1599 it is simply the best bargain in amplifiers in the whole world.

When you are done knocking your socks off you must put the amplifier to another test—use it on Quad or Stax electrostatic speakers so that you may experience the great gentleness and subtlety of this beast. If this amplifier is not the most powerful lucid amplifier you have ever heard at any price I demand that you do not buy it! If on the other hand you hear what I hear you might want to go even further and own the MEGAMOSCODE 1000, but now we are entering the territory where only gods safely tread.

MOSCODE™ 300

For any reasonable sane music lover we have the answer for joy without heavy consumer debt. The only difference between the MOSCODE 300 and 600 is that the 300 has solid state regulation on the input circuit and the 600 uses tubes as regulators. Of course there is an absolute difference in power, but having the ability to put 200+ watts into 4 ohms puts it up there with conventional transformer coupled amplifiers that cost $5000. The MOSCODE 300 should be compared to these amplifiers. It is better. I will not wax praise on the beauty of construction. You make your own value judgment as to the quality of construction. Is there any other product that you know near the price that is made at that level of quality? Be harsh in your judgment because we ask for no quarter.

If I must use the shabbiest of metaphors let me resort to—It has the best of solid state and tubes (yuck). If you could own an OTL-1 then the MOSCODE 300 wouldn't have to exist. That is why you must listen to this amplifier in your living room. You will then understand what Julius Futterman wanted to achieve. You will then have the direct experience of his genius.

MOSCODE™ 150

Brevity is a blessing. If you only need a 75 per channel amplifier or if the monthly payments on your 1937 Buggati make it impossible to buy expensive audio gear this is it for you. This amplifier is a MOSCODE 300 with less output devices and smaller power supply. Try it you'll like it!

THE MOSCODE BLACK HOLE™

Forgive me for tantalizing you with this but the success of the MOSCODE product line has given me the resources to fulfill a fantasy. . . I wanted to build an amplifier so powerful and delicate that the musical energy it produced would be so dense that I could disappear into the music. After all isn't that what we all want, but because of the limitation of amplifier design it has been difficult. Can you imagine listening to a Beethoven symphony or a Stravinsky ritual and being swept out of your seat and swirled into the music. . . floating in space with no form—just musical energy?

Of course such a fantasy would lead to thoughts of cathedrals and organs which have at the right moment the ability to do just that. Think about this—the cathedral and organ are really one instrument—an instrument which is a metaphor of the voice of God. Isn't it odd that the most sophisticated technology for the reproduction of the voice of God hasn't advanced since the 15th century? Have we done better in 500 years? Isn't it about time that we went further?

The MOSCODE BLACK is a 10,000 watt per channel MOSCODE AMPLIFIER—the power supply weighs 3000 lbs., it can only be played when the industrial air conditioning units are cooling the output stage, and it must be connected to a main power line. We believe it can reproduce the voice of God better than a cathedral; when coupled to the right source and appropriate speakers.

I am writing a separate book on this subject and do not wish to spend much more space on it, but I will have complete schematics and technical description beside all

my philosophical rambling. THE MOSCODE BLACK HOLE will be shown for the first time at the JUNE CES SHOW. Order one now. It is cheap at $267,000. We accept Visa and Mastercard.

THE ECSTASY OF KIT BUILDING

In the two years previous to starting New York Audio Laboratories I got so emotionally involved in building tube gear I forgot about sex. That is serious. It seemed every waking hour found me with soldering iron in hand. Carrying heavy amplifier between my shop and my listening room was my only form of exercise. I was a samuri audio nerd.

It is no accident that we are the only tube manufacturer who is offering these types of kits. There is a special joy to building your own electronics and then having the added dimension of joy in the beauty of the music. Kit builders also have a special advantage—they can tweak their amplifiers. An audio tweak is a musical pilgrim looking for the highest mountain. No piece of electronics is beyond his creative input. We serve this man who is of a kindred spirit. We are nothing more than professional full time tweaks.

MOSCODE™ HIGH PERFORMANCE KITS

There are many cost limitations we have to deal with if we are going to reach a wide audience. For those who like to tweak we make kits that will increase the performance of the MOSCODE amplifier, that wouldn't be cost effective in our regular product line. All of these high performance kits will give you a little extra performance.

STAGE III—by adding additional power supply capacitors to a separate chassis and hooking up the umbilical cord you can double the capacitance of the power supply. This will slightly improve the bass response of the amplifier. The chassis of all MOSCODE AMPLIFIERS are all ready prepunched to accept the umbilical cord.

STAGE II—by adding two enormous polypropylene capacitors to the power supply you may increase the delicacy of the upper frequencies. These 50+ mfd caps lower the power supply inductance at high frequencies.

STAGE I—by changing the input and output connectors to these superior quality items and by adding some of the new harnessing you may experience a very subtle increase in delicacy.

All of these high performance kits are cumulative in effect or you may use any one of them.

MOSCODE™ PREAMP DESIGN

I believe George Kaye has made a significant advance in preamp design with the MOSCODE PREAMPS. He is the first man to figure out how to use mosfets as voltage regulators on tubes. In the previous section of the book (NCP-II), I discuss the

importance of power supply design i.e.—state of the art tube preamps require sophisticated voltage regulation. You have already read that one of the significant design features of the NCP-II is that each tube has its own independent voltage regulator and that we use a cascode topology with an optional tube regulated power supply. So it is with the MOSCODE PREAMPS. Just as George has recreated the sound of the OTL-1 with the MOSCODE AMPLIFIERS George has recreated the sound of the NCP-II with the MOSCODE PREAMPS.

By all means if you have the money buy the NCP-II preamp with the HTMPS power supply ($3800). You will love it. Of course you could buy a MOSCODE PREAMP and with the money you save you could buy a motorcycle. Quite frankly I am embarrassed how well the MOSCODE PREAMPS do when compared to the expensive spread.

Of course George's ability to couple mosfets with tubes means that for the first time you can own a high gain (80db) tube preamp that is quiet and reliable. Plug your moving coil cartridge directly into the phono input without a headamp and hear for the first time the luminiscent quality of state of the art preamps with tubes. When you buy the optional tube regulator or the Sarabande with its built in tube regulation you will hear an even more subtle level of natural harmonics in music. Before I proceed with a frenzy of delight of these preamps perhaps we should dally for a moment with the schematics so that you can understand the basic operating principals of the MOSCODE PREAMPS.

MOSCODE™ MINUET

By eliminating the need for a headamp when using moving coil cartridges George is permitting the maximum level of delicacy to be portrayed by this design. Each preamp has a switch on the circuit board that permits you to switch to either high gain (moving coil cartridges) or low gain (moving magnet cartridges). To be sure this design has enough inputs and outputs for a recording studio.

If you remember the NCP-II comes with an optional tube regulated power supply that we believe brings this circuit to a higher level of refinement. George developed the same circuit concept for the Minuet—you can order an optional tube regulated power supply which will increase the delicacy of the circuit—something that tubes do for fun.

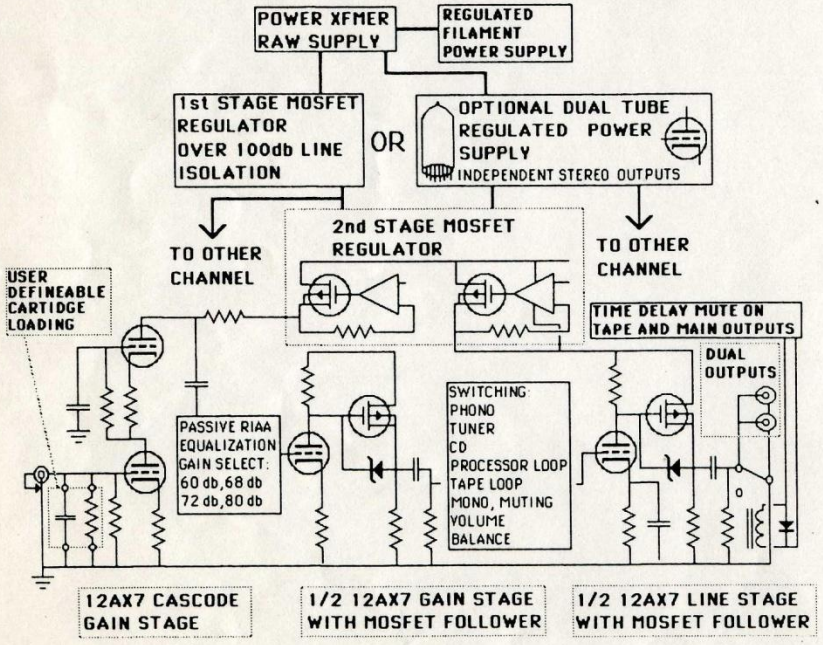
MOSCODE™ SARABANDE

When you examine the schematic below you will note that the SARABAND has the same audio circuitry as the Minuet but has more sophisticated power supply design in that you have two totally separate channels. The only thing they have electrically in common is the AC cord. The combination of each tube having its own mosfet regulated power supply and the fact that each channel's mosfets regulators are fed by its own independent tube regulator (again the same regulator tube used in the Futterman amplifier) permits this circuit to operate at a higher level of resolution and delicacy. As we have continually said. . .there is a direct relationship between sound quality and degree of sophistication in power supply.

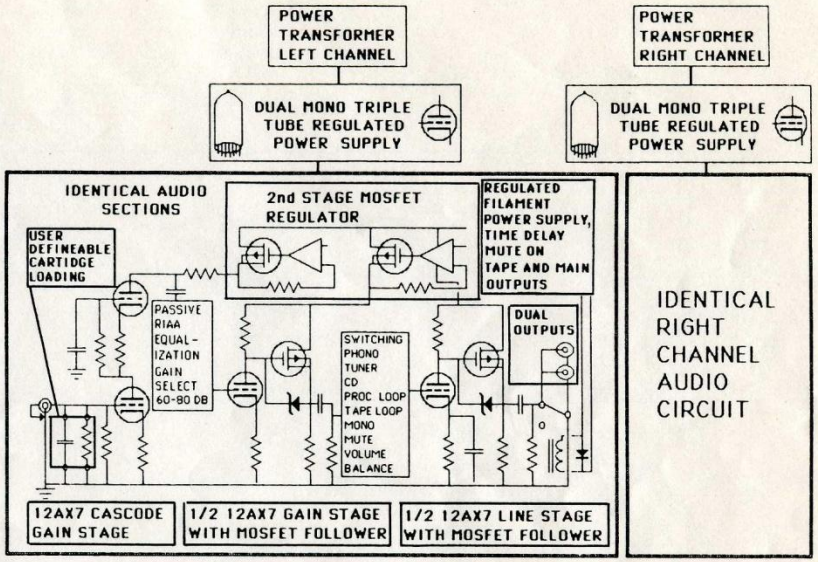
In our initial research in preamplifier design using Futtermans and Quad we

discovered that cascode tube circuits had the ability to reveal greater inner detail than cascade circuitry like that used in other companies' design. We think our unique contribution to the high end audio industry is the refinement of the cascode tube preamp designs which is now in a form that is reliable and affordable. Like our expensive spread—the NCP-II—all the MOSCODE PREAMPS have individual regulators on each tube, filament regulation, passive RIAA eq and have the ability to reveal the nascent harmonic quality of MOSCODE AMPLIFIERS. We know of no better way to experience the musical possiblity of MOSCODE AMPLIFIERS than to audition them with one of these preamps. Now let's follow the schematic diagram.

MINUET REPRESENTATIVE
SCHEMATIC DIAGRAM



SARABANDE REPRESENTATIVE
SCHEMATIC DIAGRAM



MOSCODE™ MINUET AND SARABANDE CIRCUIT DESCRIPTIONS

The Moscode Minuet and Sarabande Tube preamplifiers share identical audio circuits and differ in the sophistication of the power supplies. The **Minuet** utilizes either a **Mosfet** regulator or a **dual tube regulator** as the basis of the power supply. The **Sarabande** preamplifier uses **dual mono** power supplies with a **triple tube regulator.**

THE AUDIO CIRCUIT:

The Moscode Minuet and Sarabande Tube preamplifier audio circuits are comprised of a **12AX7 CASCODE** (1st stage) capacitively coupled to a selectable attenuator, and **passive RIAA** equalization network. The next stage of gain is a common cathode **12AX7** gain stage direct coupled to a **MOSFET** source follower. The output of this stage is coupled through a **2 Mfd. polypropylene capacitor** that drives the tape/processor loops and the volume controls. It should be noted that this output is