

The Hangar User Manual

By John Baccigaluppi

Hangar mic pres

(All newer channel strips have 48v and phase reverse unless otherwise noted)

Neve 1272 (2)

The ultimate rock and roll mic pre, these are vintage original Neve modules. Solid state with big beefy transformers. These break up in the beautiful classic rock sense. Great on guitars, vocals, drums (especially snare), just about anything where you need a bit of edge. No 48v or phase reverse.

Neve 1073 (Chandler LTD-1)

Very similar to the 1272, but with an EQ that sounds great and is very musical. A classic. Killer on snare. 48v and phase reverse.

Neve 34162 Broadcast Console.

See Neve 1073 above, but with fewer EQ points and class AB topology. 4 buss board which is nice for combining mics to one track of tape.

API 1608 Console. The API is considered by many to be one of the best rock consoles ever and sounds great on drums, guitars, vocals, pretty much anything. This console has 16 312 mic pres, 8 subgroups and direct outs on every channel. It also has 16 EQs and 8 Compressors which are in the EQ and compression sections below.

RCA 76 B2 tube console.

This 500 pound beast is the same type of console that was in Sam Phillip's Sun Studios that made all those classic records by Elvis, Johnny Cash and hundreds more. This thing uses metal tubes and input and output transformers that weigh more than 10 pounds each. It just sounds huge. Great for drums, guitars, anything really. There are four mic inputs and two line inputs. The mic inputs have direct outputs, or any of the six inputs can be routed to one of two

outputs. There are no pan-pots. Stereo was decades away when this baby was built. Hangar engineer extraordinaire Bryce Gonzales restored this console while keeping it vintage everywhere it mattered. IO wiring is now mogami and IO is via XLR.

Geoff Daking Console.

This is a clone of the Trident A-range console, a legendary British rock console. Clean, but with character. EQ and filter section makes this great for drums, but it sounds good on everything; vocals, guitars, etc. 8 buss board which is nice for combining mics to one track of tape. More versatile routing and architecture than the Neve: Switchable inserts, 4 aux sends, 16 returns, auto muting, lots of patch points.

Millenia Media HV-3's (4)

The ultimate straight wire mic pre. Great transient response, frequency response. Transformerless input. Great on drums, especially kick, vocals, acoustic guitar. 48V, no phase reverse.

Millenia Media Origin.

The ultimate channel strip! This combines one of just about everything that Millenia makes. Two mic pres (switchable-one or the other) one solid state, one tube. There is an input transformer that is switchable too. The EQ and opto-compressor section is also switchable between tube or solid state. There is a de-esser as well. This particular unit has been modified with NOS Telefunken tubes. Great for anything, especially kick, vocals, acoustic guitar.

Telefunken V72

Original vintage German tube pre as found in the early EMI consoles in Abbey Road studios and used on the early Beatles records. Great on vocals and guitar. 48v and phase reverse. This pre is what the EMI techs based the very rare REDD tube pre on because they felt the V72 was too expensive.

REDD 4.7/Revolution

An exacting replica of the EMI Redd tube pre used on the classic Beatles records like Revolver, Rubber Soul and Sgt. Peppers. Made from the original schematics.

Chandler EMI/TG-2 Mic Pre/EQ

This is an exact replica, recreated from the original blueprints and licensed from EMI from the legendary EMI consoles that were used on the Beatles Abbey Road and Pink Floyd's Dark Side of the Moon. A solid state design with an amazing sounding passive EQ. This was the third incarnation of the EMI boards, with the V-72 being the first and the Tube REDD modules being the second.

Avalon 737

Tube based channel strip with an opto-compressor. Very clean and very quiet. Great on bass, guitar and voice.

Universal Audio 2-610

A re-creation of Bill Putnam's legendary tube console that everybody from Frank Sinatra to the Doors and the Beach Boys recorded on. Minimal but nice EQ makes this my favorite for overheads. But, anything you put through this sounds excellent with lots of character. This has been re-tubed with NOS (New Old Stock) American tubes.

Universal Audio 2108

These pres are based on the solid state gain stage from the legendary UA 1176 compressor. They break up in a beautiful sounding way. Very Neve like, but I often prefer them over the Neve!

Summit MPC-100

Tube Pre/compressor with a really versatile gain and input stages. There are three separate gain stages so you can drive the tubes into subtle overload that sounds great. Awesome on bass, but great on guitars and vocals too.

Focusrite ISA 220

This is several of Rupert Neve's later designs in one box. Neve reportedly hated the sound of his earlier designs and strived to make cleaner sounding gear with the Focusrite line. The 220 is really clean, but still has a nice character. The EQ on this is really versatile and the compressor has some nice features too. Really

great for vocals, but just as good on drums and guitars. This seems to get tons of use on Bass as well. There's something about the way this works on the bottom end. This unit, and the Red EQ (see below) were descended from the Focusrite ISA consoles Rupert worked on.

Altec 438C pre/compressor

Vintage transformers and tubes give this tons of character with a slightly dirty sound. Great on vocals when you want that classic warm tone. In the same family as the Fairchild 660 in that it uses a variable MU tube as the gain reduction circuit, not that we're claiming this sounds like a Fairchild. Paul McCartney used a modified version for his bass sound, and the Altecs along with the Fairchilds were the favored compressors at EMI during most the Beatles recordings. In fact the Altec compressors were so heavily modified by EMI techs, that they renamed it and put on a different face plate. One of the major EMI mods was an output gain knob. Ironically, we modified our 438 when we first got it with an output gain because we were using it with a Fostex B-16 which as a -10 deck, couldn't handle the Altec's output. The other major EMI mods were release and threshold controls. By the time the 438 C (after the 438 and 438 B) was released, Altec, having noted that people were modifying the 438's added a threshold and release control to the 438C. We also have another Altec 438 that's been modded by Bryce Gonzales that you'll just have to hear when get here....
No 48v or phase reverse.

Altec 1567 Mixer

The ultimate in big knobbed, big tube sound with not just a little bit of distortion. Both the Altec pieces were primary pieces of gear in both the Motown studios and Joe Meek's original studio. Huge soupy bottom end. Try using this as a drum overhead mixed in with the rest of the kit and hear the drums come alive. Two different gain structures as these pres are very quick to distort. Use a low output mic if you're getting too much distortion. No 48v or phase reverse.

Ampex Mx-10

4 Channel stereo tube mixer with mic and line inputs. Similar to the Altec 1567 but more Hi-fi and cleaner. Bryce Gonzales uses this on acoustic guitar a lot and after I tried it once, so do I!

Ampex 351

These 6 rack space, single channel tube mic pres are treasured by engineers around the world. Thankfully, they're fairly plentiful as they were the front end to the ubiquitous Ampex 350 tape machines. Unfortunately most of them are trashed. Fortunately, Bryce restored these with his usual careful attention to vintage sound and contemporary reliability. Les Paul used these and they pop up in photos from classic rock sessions all the time. I recently saw a photo of The Who with Shel Talmy producing and a pile of 351s in the background.

Joe Meek VC-6Q British Channel

This shouldn't sound as good as it does for how cheap it is, but we've stacked it up next to the Neves and Dakings, and it has a very similar character. One cheap channel strip that I don't hesitate to use. The mid eq section has been modified for a lower sweep (200-1000hz).

Quad 8 mic pres (4)

Designed by the same engineering team that developed the original API 312 Mic pre after they left the original API group, the difference between these pres and the API is two resistor values and a 28V (as opposed to 15V) power supply for more headroom.

Electrodyne Mic/Line Pres/EQ

Again, vintage modules racked up by Mr. Jon Erickson. The Electrodyne is the first of the line in the Electrodyne/Sphere/Quad-Eight/API continuum. The Electrodynes were popular in the Southeast at places like Stax, Muscle Shoals, etc. Rumor is that Sweet Home Alabama was cut on an Electrodyne.

Helios Mic pre/EQ

The Helios was a rare and legendary console from Olympic Studios in the UK and was used on classic records by bands like Led Zeppelin and the Rolling Stones. Dick Swettenham revived the Helios line to the exact specs of the original shortly before he passed away. Helios authority Dave Amels (Bomb Factory) reports

that the new modules like this one retain the authenticity of the originals.

Chandler Germanium Pres.

After closely studying and recreating classic recording gear from Neve and EMI, Wade Chandler designed the completely original Germanium pre. Using the older germanium, as opposed to silicon, transistors and a unique feedback circuit, these pres have a really wide tonal range and sound great. Really great in fact. They get lots of use on guitars, bass and drums. They've got DI inputs that engineer Thom Monahan said sounded better than any DI input on a pre than anything in the studio after doing a shootout of all of them.

COMPRESSORS

(Also see the mic pre section as several of the channel strips have really good compressors in them)

There are three basic types of compressors:

1. Optical compressors like the LA-2A use an optical element as the gain change element.
2. FET compressors like the 1176 that use a FET transistor as the gain change element.
3. Variable Mu compressors like the Fairchild 660 that use a tube the gain change element.

We have all three kinds of compressors at The Hangar.

As of late, the Vari-mu compressors are very in favor and sought after. There really is something about the way a good vari-mu compressor makes a vocal just sit perfectly in the mix.

VARI-MU COMPRESSORS

Mercury 66

This is a hand wired point to point recreation of the venerable and famous and outrageously expensive Fairchild 660. The 660 was, and is a classic compressor used by The Beatles and everyone else who could afford one since then. Our friend Pete Weiss who runs

Zippah studios in Vermont had a real 660 in his studio for several years. After using the Mercury, he said it pretty much nails the Fairchild sound and vibe. As a side note, you could heat a house with a family of four with this thing from the heat it generates. These tubes are running hot!

Gates SA-39B

This is a vintage 8 rack space mono compressor that was the Gates broadcast company's answer to the 660. Like the Fairchild this thing has huge transformers and a fully balanced push-pull internal signal path. We moved the release knob from the back of the unit to the front. Grittier and touchier than the M-66.

Gates Sta Level recreation by Retro Instruments.

Phil Moore is the man behind Retro and he has perfectly recreated the original Gates Sta-level. You can order the Sta-level with a matched pair of tubes for the gain change element, or you can opt for the super rare and hard to find 6386 tube, the same tube that was used in the Fairchild 660. Phil was nice enough to supply us with the 6386. Sylvia Massey says she used a sta-level on Johnny Cash's vocals on the American Recordings album and that it 'made' the vocal sound.

In practice the Mercury, the Gates and the Sta Level all sound really similar and all sound fantastic. Any one of these will sound amazing on a lead vocal when mixing. One of the main differences is in the subtle distortion or 'edge' each unit provides. The Sta Level is the cleanest, most transparent and pristine. The Gates is the dirtiest and will quickly move into distortion if pushed too hard. At about 3 db of gain reduction it sounds amazing. The Mercury is kind of in between the Sta-level and the Gates.

Altec 438C

See above in the mic pre section.

Thermionic Culture Phoenix

This is a stereo vari-mu unit from the UK that's hand made with point to point wiring techniques. Of all the vari-mu units, we have, this is the most versatile as it has both threshold and attack and release controls. As it has more variables, the Phoenix isn't as easy

to use as some of the other minimalist Vari Mu units, but it will do things the others won't and will definitely reward careful tweaking and patience. This unit was based on an Altec 436 that designer Vic Keary modified for Pete Townshend in the 60's.

Retro/UA 176

This is another Phil Moore masterpiece based on the very rare UA 175 vari-mu comp that preceded the 1176. Phil has stayed faithful to the original but added some options that make this even more versatile. There is no better compressor in the room that strikes the 176's balance of vari-mu vibe, sonic perfection and extremely versatile. The 176 has a slightly steeper learning curve than the M66, Sta-Level, or SA-39 but it will reward the time you spend with it.

Optical Compressors

LA-2A

The most famous optical compressor of all time, and one of the most famous compressors period is the LA-2A and for good reason: It sounds fantastic and is super easy to use. The gain stages are tubes and this device is a hand wired, point to point unit. This was re-tubed with NOS American tubes. Ask us about the Memphis/Arden feedback trick which sounds great with this unit.

LA-3A

This is the baby brother of the LA-2A and uses a solid state instead of tubes and a circuit board. Nonetheless, the LA-3A sounds great and lots of engineers prefer it over the LA-2A. Since we have two, the other added bonus is stereo usage.

Fairchild 663

No, this is nothing like the classic 10 rack space 660 despite being 3 'more' than 660. This is a very small console module style solid state optical compressor. It's small and it's simple, but dammit, it sounds great! I've had very little luck finding any information about this era of Fairchild gear. I did find a photo of Pink Floyd circa 1967 in Abbey Road and there were three of these mounted into the REDD console off to the right of the board. If anyone out there

knows more about the console style Fairchild units, I'd be curious to hear from you.

ART Pro-VLA

An optical compressor with tube output stage for less than \$400! Stereo too! This is the best sounding inexpensive compressor every made. It really does hold it's own against much pricier units. We bought this after both Craig Schumacher (Calexico, Neko Case) and Dave Friedmann (Flaming Lips, Sparklehorse) highly recommended it.

JoeMeek

We have two of the earlier, Ted Fletcher designed Joe Meek channel strips. They both have optical compressors in them. The 6Q British Channel sounds particularly good, especially for an inexpensive 1U unit. Ted helped us change the EQ frequency as well to a more useful lower mid area on the mid range. Neither of these units are in the control room anymore but are racked up for remote use, but just let us know if you want to use them and we'll bring them in.

FET Compressors

Universal Audio 2176 (1176 x2)

This is the stereo version of the venerable 1176 compressor, probably the most famous compressor after the LA-2A. The Bill Putnam designed 1176 is a FET compressor however. In general, FET units can respond to transients much more quickly than an optical unit. This is a more 'surgical' compressor than an LA-2A and has more control with both attack and release times.

Studio Electronics SE-2

This custom made unit marries two 1176 compressors with Neve 1272 output driver circuits and transformers. Pretty rock and roll! The metering takes some getting used to, but this box can sound amazing, like an 1176 on steroids. Bryce swears by this on snare drum.

Distressor

Although a newer piece of gear, the Distressor was an instant classic, must have piece of gear. Probably the fastest compressor

every made. Can also be the most subtle or most brutal compressor ever. We have the stereo link option for our pair along with the “British” mod. The sound of commercial pop punk drums circa 2000 is pretty much defined by this unit.

Daking FET Compressor II 91579

This is a FET compressor with it’s own unique design. Unlike Geoff’s mic pres/EQs which were modeled after the Trident A Range, this unit isn’t based on any one classic piece of gear. Instead, Geoff studied and analyzed many classic compressors that engineers loved the sound of. He then asked the question, ‘what do these compressors have in common?’ and then designed his compressor with those characteristics. The first three releases times are faster to slower, but the last four are based on the Compex Auto, Neve 33609 Auto and Fairchild 670 #5 and #6. Both J. Robbins and John Agnello insisted on a pair of Dakings when they worked at the Hangar and more recently Thom Monahan uses them on every mix and tells us how amazing they sound.

API 525

We have two of the API 525 500 series compressors in our 1608 console. This is a classic compressor from the 70s that is deeper than it appears on first glance. Like the 176, give it some time and it will give you back results you won’t get anywhere else.

Level-or

These two 500 series comps are based on the Shure Level-loc one of the most fucked up compressors every made. People like Tchad Blake love these things for the sonic anarchy they can provide. Almost more of a distortion box than a compressor. Most of the time I try these, they just don’t work and I move on to something else. But when they do work, look out! Nothing else can sound like this.

Anamod 660

These things are crazy. Anamod is a company started by Dave Amels, who did all the coding for the Bomb Factory plug-ins and Greg Gualtieri who owns Pendulum Audio. These guys are certifiable geniuses. The Anamod concept is hard to wrap your head around but here goes: After Dave sold Bomb Factory to Digidesign,

he still owned the math behind those plug ins. Him and Greg were talking one day and they came up with the idea of “What if we took the math that digitally modeled the analog hardware and made an analog version of that math?” Huh? OK, think of it this way: The earliest computers were analog and used vacuum tubes. Still confused? So am I even though I kind of grasp the concept. Here’s the deal: The Anamod 660 models the huge vintage Fairchild 660 that used 19 tubes and a dozen or so transformers. It models it, as opposed to recreating an analog circuit like the original 660, entirely in the analog domain. There is no digital circuitry in this unit, no DA or AD converters. But, it fits in a 500 series rack and when you look inside, it looks like a cell phone circuit. WTF?!? Like I said these guys are geniuses and it’s really hard to understand this or believe that it works until you hear it. Then you just know it sounds just like a Fairchild and you just use it and forget about trying to understand how it works...

Alta Moda AM 10

The last of the 500 series to go into the 1608. The Alta Moda gear just sounds great. It’s designed by guys who listen and kind of ignore the whole ‘discrete, class A, transformers gotta have ‘em or it sucks’ babble and make really great sounding pieces that are affordable. After we got our AM 20 EQs and were blown away by those, we figured we had to try the comps. Then Thom Monahan used a pair in another studio and was raving about them. They just got here about an hour before I typed this, so that’s all I can say for now.

Spectrasonics 610

The 610 is a unique compressor that uses two circuits in series for both peak limiting and compression. The 610 is an either/or or both type unit depending on how it’s set. Careful adjustment of the release control allows you to precisely shape a drum track. Thom Monahan says this is his favorite room mic compressor and it’s rumored that Jimmy Page often used the 610 for his solo tracks.

Drawmer 1968

This unit was a collaboration between Drawmer and Mercenary Audio’s Fletcher, who wasn’t a big fan of the 1960, the predecessor of the 1969. The 1969 is a FET compressor with a

tube output stage, and is great sounding, fairly neutral compressor. You can use a pretty liberal amount of gain reduction without hearing the compressor work.

Drawmer multi band S3 compressor

This is a very deep, really amazing compressor. It's actually three separate stereo compressors. Multi band compressors compress the lows, mids and highs independently and differently if desired which is usually the point. Each band can have a different ratio, threshold, attack and release and output gain. Crossover controls allow you to determine where the midrange band begins and ends and where the low and high bands are left. An amazing tracking tool on bass and acoustic guitar. A great bus compressor for drums, guitars or the whole mix. A lead vocal can just sit perfectly when run through this unit.

EMI TG Compressor

This compressor is a replica and then some of the compressors that were found in the TG consoles made by EMI and used in studios like Abbey Road. The EMI engineers designed this solid state unit as a sonic replacement for the the Altec and Fairchild tube compressors. As is expected, it sounds different from those units but it sounds great. It definitely has a 'sound' to it, that is reminiscent from the records recorded on that console like Dark Side of The Moon and Abbey Road. Keep the knobs on the yellow areas for the 'classic' TG sound.

Chandler Red Devils

These 500 series comps are new designs from Wade Chandler and borrow from both the classic Neve 2254 design and Wade's original Germanium series. Bottom line they sound great! They add a wet/dry control for 'in the box' parallel compression. The only sucky thing about these is that it's very hard to read the front panel without a magnifying glass. But, that's just the inherent problem with packing lots of features into a tiny 500 series module.

Alesis Black Lion Mod 3630

Don't laugh, by the time the Black Lion folks are done with the 3630, it's nothing like the original. This has more in common with an SSL buss compressor than the unmodded 3630. This is racked

up for remotes but can be brought into the control room if you need it.

EQS

(Also see the mic pre section as several of the channel strips have really good EQs in them)

There are two main types of EQs, passive and active. Each type has two sub-types so to speak. A true passive EQ has no make up gain stage and will introduce a significant overall gain reduction. Most passive EQs have a gain make up stage to counteract this. Active EQs also have two types RC and LC. RC stands for Resistor/Capacitor and is generally used in cheaper EQs like you find in most inexpensive mixers. LC stands for Inductor/Capacitor and is found in better EQs, like Neves, etc. Don't ask why its LC instead of IC, because I've forgotten, but we know that the LC EQs sound much better than RC EQs. Both our Neve and Daking consoles have LC EQ circuits.

The Mic pre section above details the EQs in the Neve, Daking, UA, EMI, Focusrite, Heilios and API units.

Passive Units

A Passive EQ works a lot differently than an active EQ in that it doesn't actually 'boost' any frequencies. Instead, it attenuates the entire audio spectrum about 20-30 db. To cut, certain frequencies are further attenuated. To boost, however it's easier to think that certain frequencies are 'un-attenuated' which essentially turns them back up. Most passive EQ's have a gain make up stage after the passive EQ section to get the gain back to unity.

Pultec EQH

The Pultecs are some of the most treasured EQs ever made. These are the classic passive EQ. The EQH has only low and high shelving EQs and only a few frequencies to choose from. It was originally intended as a program EQ for broadcast and disc mastering to gracefully sculpt the bottom and top end. Compared to the complex and versatile EQs made now, the Pultec doesn't really do much. But, what it does, it does more smoothly and musically than anything else, which is why people still covet these and pay thousands of

dollars per channel for them. For beefing up the bottom end of a bass track or adding 'air' to a vocal, there's just nothing better. The huge beefy transformers and tube gain make up stage are part of the sound. Even bypassed, the Pultec just makes things sound better. Because of its unique design, you can simultaneously boost and cut the same frequency which is a trick a lot of engineers use on low end with Pultecs.

Summit EQP 200b

This is a stereo version of the Pultec EQP which adds a bandwidth control to the EQH. The EQ gain circuit and the tube makeup stage are an exact copy of the original Pultec. But, the EQP is transformerless so it's a bit cleaner than a Pultec. Some engineers preferred this and had actually modified Pultecs to be transformerless. On the top end this unit sounds great. The bottom end sound good too, especially if just cutting, but for a beefy low end boost, I prefer the transformer input Pultec. We retubed this with NOS American tubes.

Fairchild 665 Passive EQs

These EQs are totally passive. There is no power cord or power supply even! These are of the same lineage as the 663 compressor discussed above. They sound great like the Pultec and Summit, but they add about 30 db of gain loss. This renders them useless in many applications. But, they work fine inserted between a DAW or tape machine and the Neve console because the Neve has a huge amount of very clean gain staging.

Thermionic Culture Pullet

Like the 665, the Pullet is totally passive. Unlike the above EQs, the Pullet works mostly on the midrange. Kind of like a stereo version of the Pultec MEQ. This is amazing on guitars, piano, etc. where you need to sculpt the midrange.

Active and Combo EQs.

Great River 2NV

This EQ is based on the Neve 1073 but is not a replica. Instead, designer Dan Kennedy decided to take what he thought worked on the Neve EQs and keep it but improve upon what he felt could be

better. So the 2NV is very close to a Neve but it's not an exact copy. Every engineer who's been through the Hangar and used this, raves about it, and I'd have to say if I could only have one EQ it would probably be this one. It's equally at home as a precise surgical EQ, but also sound amazingly musical and beautiful so that if I didn't have a Pultec, I'd be OK using this for the same types of things I go to the Pultec for.

Focusrite Red 2

This is a VERY close second to the 2NV. Before we had the 2NV, I'd say the exact same things about this EQ, which was designed by Rupert Neve, as I did about the 2NV. The bottom end on this, like the ISA 220 which is essentially the same EQ, is really great. Great of course for bass, kick, etc.

EMI Chandler Curvebender EQ

This EQ is based on the mastering EQ from Abbey Road that Geoff Emerick, and only he was allowed to do this, used to drag into the studio for use on the Beatles recordings. This is our most recent EQ and since it's arrived, every engineer who's used it reports that it's their favorite.

Chandler Germanium EQ

See the Germanium Pre (above) for the basics of Chandler's Germanium line. This EQ is really unique and really amazing sounding. The top end is active, while the bottom end is passive. The bottom end can be used in an 'independent' mode (like a Pultec for simultaneous cut/boost) or in interactive mode. This EQ isn't completely intuitive but it sounds so good no matter what you do with it, that you can usually find something very cool pretty quickly. It also puts the germanium gain/feedback controls right up front so you dial in the tonality of the unit before you even start to use the EQ. By adding the gain and feedback settings to equal 10, you are at unity gain. But gain = 5, FB = 5 sounds totally different than gain = 7, FB = 3.

Sontec Parametric EQ

Eric Broyhill from Monsterlab Audio who does a lot of our mastering is always raving about the Sontec EQs. So when a friend had this for sale we picked it up. This is one of the cleanest, most transparent

and characterless EQs I've ever heard. This looks a lot like the GML EQs and rumor is George had a hand in this design. Bottom line this is the perfect program EQ when mixing. Gentle use is recommended but it's impossible to make this thing sound bad or distorted. It's super clean and seems to have tons of headroom.

Sphere Inductor Graphic EQs/Electrodyne EQ-pres

These very unique EQs and pres are from old Sphere and Electrodyne consoles and were racked up by Helsing Audio's Jon Erickson. Electrodyne was the first and Sphere was the middle phase of the great American made Electrodyne/Sphere/Quad Eight consoles that have been a bit overlooked compared to the better known API consoles. The history of these four brands is fascinating and pretty intertwined. People who know this gear love it, and the Stax Studios in Memphis used Electrodyne gear on all the classic hits from that amazing studio. This EQ is pretty amazing in that it's a graphic EQ with 10 frequencies but it's an inductor rather than RC EQ. Very musical and easy to use. Tape Op issue #49 had a really extensive article on these consoles.

UREI 565 Little Dipper EQ

This Bill Putnam designed EQ has the distinction of having the narrowest Q (Bandwidth) of any analog EQ ever made. Perfect for notching out annoying frequencies on a snare drum for instance. Plus the top and bottom shelving filters allow for an easy, filtered "I'm on the radio" effect like the intro to Wish You Were Here.

Krohn Hite bandpass filter

This is like the 565 without the notch filter. It does nothing but cut the top and bottom for the radio effect. But, it does it so well with a nice complement of NOS telefunken tubes and huge beefy transformers. Our pal Craig Schumacher (Calexico, Neko Case) told us about these units and uses them on bass a lot.

Orban Parametric Graphic EQ

Again, a really unique EQ originally intended for broadcast use. It's a graphic EQ but each band is completely parametric! Plus, it's got the hi and lo pass filters for the radio effect.

Console EQs:

Finally, our API 1608 has five different types of EQ in it.

API 550 A

These are vintage three band 550's from an old console. One of the most popular active EQs ever made. Channels 1 and 2.

Alta Moda AM 20

These are fully sweepable, parametric four band EQs that sound amazing, just as good as the APIs. Great for toms, drums, etc. when you need to precisely dial in or out a certain frequency. Channels 3 and 4

API 550 B

These are the 'new' API EQs and are four band instead of three. Some vintage guys will pooh pooh these as not being as good as the vintage ones. We don't. Listen for yourself, we have both vintage and new EQs so make your own mind up. Channels 5-10.

Avedis MA 28

These were designed by Neve/API guru Avedis to take the best of the API 550 concept and upgrade it with no expense spared. These are probably the best sounding EQs in the console and are certainly the priciest. The 28 refers to 28 K. Yep, you can cut or boost 28k. Go for it. Channels 11-12.

API 560 Graphic

These are the classic graphic EQs. Vintage guys pooh pooh these two. We just use 'em cause sometimes there just what you need and they sound great. Channels 13-14.

Channels 15-16 house the Fairchild Passives discussed above with a pending Pultec type back end.

MICROPHONES

At the Hangar we have a mic collection of over 100 microphones. These fall into four main types: Large diaphragm Condensers (usually used on vocals), small diaphragm condensers, dynamics, and ribbon mics. The condensers can be further broken down into tube powered microphones and solid state phantom powered microphones.

Each of these microphones sounds different. In fact, unless they're a carefully matched pair, two of the exact same kind of microphones will sound different. Having a wide range of microphones makes it much easier for us to make sure we have the one that will sound the best in any given situation.

Following is a detailed list of some of our microphones:

Large Diaphragm Tube Condenser Microphones.

These microphones are often thought of as the classic vocal mics but sound great on almost any source. Besides vocals, you'll see them used as drum overheads and room mics, acoustic guitars and guitar and bass amps.

Wunder Audio U-47 (CM-7)

The U-47, made by Neumann, is maybe the most classic vocal mic every made. It was the first tube condenser mic made in a reasonably sized package. Some of Neumann's earlier tube mics, like the CMV-3 were nearly two feet tall, four inches in diameter and really heavy. The U-47 used the classic M-7 capsule and simple but high quality preamp section. Mike Castoro of Wunder Audio bought and sold over 150 U-47s, keeping seven of the best sounding ones. The problem with vintage microphones is that they vary tremendously in quality. If they haven't been well maintained over the years, they can actually sound pretty shitty and lackluster. To restore them entails replacing capacitors, the tube and possible even 're-skinning' the diaphragm, an art that's nearly lost today which is why the older microphones that have been taken care of are so coveted.

With the Wunder Audio U-47, Mike went the other direction, completely reverse engineering and re-sourcing all the original parts. The capsules are made in Switzerland (Home of the precision Swiss watch industry) to the exact specs of the original Berlin M-7's from the blueprints. They are then sent to Eastern Germany, where Siegfried Thiersch 'skins' them and tension's the diaphragm. Siegfried was one of the original employees at Neumann and is considered the best in the world at skinning diaphragms. The tube is an original Telefunken NOS (new old stock) EF-14 metal tube. The transformer is wound from the original drawings by Oliver Archut at TAB Funkenwerk. All these parts are sent to Mike who

hand wires and assembles and then tests every mic himself. Mike still has the seven great sounding U-47s (along with lots of other pristine vintage mics) but uses primarily Wunder mics on all his recordings. It's a safe bet that the Wunder Audio U-47 sounds better than a lot of vintage Neumann U-47's.

Wunder Audio c-12

See above. This is Mike's handcrafted recreation of the AKG C-12. This mic uses a Ck-12 capsule and GE NOS 6072 tube. Another classic vocal mic and popular on drum overheads too.

Neumann/Church U-47

Once upon a time, there was a guy who worked at MGM Studios named Stanley Church. Stan thought the U-47 was an OK microphone, but that it could be better. Who cares that everyone from Sinatra to Putnam to Lennon thought it sounded great, Stan had a vision! He completely re-engineered the U-47 keeping only the capsule and body of the Neumann, and eventually just bought capsules from Neumann and made his own bodies. That is until Neumann figured this out and sued him and made him stop. There are around 20 of these mics around. They use a Triad transformer and a 6072 tube. There's an interesting story about how this mic landed at The Hangar that we'll tell you if you ask us.

Telefunken USA eLam 251

This is another classic tube vocal microphone, similar to the U-47 in its simplicity. Many consider it to be the ultimate vocal mic. This is another painstakingly recreation with a NOS capsule and tube made from all the original drawings which Telefunken USA purchased from Telefunken. When we first got this mic we loaned it for a month to our friends at Paradise Studios who have a vintage 251 so they could review it for Tape Op. After using it, they pretty much concurred that the new mic nailed the sound of the older mic and in some cases sounded better. They decided to get their vintage mic reconditioned in fact after using the new 251. We've since had the chance to compare this to two more vintage 251's and it's always been favorably comparable with the classic mics.

Neumann U-67. (Tube)

This was the microphone where Neumann set out to improve on the U-47. It's smaller and has the 'classic' Neumann shape that evolved into the U-87. The mic's circuitry is a bit more complex, adding a bass roll-off and a pad as well as three pick-up patterns. Nonetheless, the U-67 still sounds great. Some people feel that, because of its midrange, that this is the ultimate vocal mic. Compared to the three mics above, the U-67 is a little bit darker and has a more pronounced mid-range. When this mic arrived at Abbey Road Studios in 1966, Geoff Emerick found it to be the best sounding mic he'd heard for recording electric guitars and used it on just about every Beatles record from that point on. This is the second U-67 we've owned and a lengthy story about it (feel free to scroll on past this part) illustrates how much the sound of different vintage mics varies.

2 Neumann vintage CMV-563 Tube Bodies w/ Scott 'Hamptone' Hampton mod.

The Neumann CMV-563 and its bayonet mount style capsules have a very interesting history. The CMV 563 was descended from the earlier, very bulky CMV-3. Like the CMV-3 and the U-47, the circuitry in the CMV-563 is very simple. The Neuman M-7 capsule is in fact the same capsule that's in the U-47, hence the CMV-563's designation as the 'poor man's U-47.' The interesting thing about the CMV though is its country of origin and the bayonet mount capsules. Unlike most of the Neumann's found today, the CMV's were made in East Germany, not West Germany. Because of that, the CMV's were much rarer until the Berlin Wall came down. The CMV also uses an older technology to change the pickup pattern on the microphone. While the U-series Neumanns used one capsule and changed polarity electronically to change pick up patterns, the method on the CMV is to physically change the capsule! The CMV's allow you to quickly and easily put a different capsule on the mic allowing for a huge range of tonal variations from these mics.

Red Type A & B bodies

About 10 years ago, Skipper Wise of Blue Microphones had a brilliant idea. He re-engineered the CMV 'Bottle' microphone to exacting standards and released the Blue Bottle mic along with 8

different bayonet mount capsules that would fit either the Blue Bottle or the vintage Neumann CMV mics. More recently, Skipper's new mic company, Red, released both tube and solid state bayonet mount bodies in a similar size to the CMV-563. With all these choices, the Neumann/Blue/Red mic bodies and capsules is one of the most versatile new/vintage microphone 'systems' in the world.

2 Red Type A Matched Tube Bodies
2 Red Type B Matched +48v Bodies

Mic Capsules

2 Neumann Vintage M-7 Capsules (cardoid)
1 Neumann Vintage M-8 Capsule (figure 8)
1 Neumann Vintage M-9 Capsule (Omni)
2 Neumann Vintage M55k Capsules (Omni, thread-on, CMV bodies only)
2 Blue B-7 Capsules (U-47 recreation)
1 Blue B-6 Capsule (C-12 recreation)
1 Blue B-4 Capsule (Neumann M-50 Spherical Omni recreation)
1 Blue B-0 Capsule (251 recreation)

You can read a very lengthy review I did for all of the mics and capsules in Tape Op.

Soundelux iFet 7 (Neumann U-87/U-47 FET) (Solid State)
Dave Bock of Soundelux and now Bock Microphones is one of the most experienced and knowledgeable guys around when it comes to microphones. The iFet 7 is one of his coolest creations in my opinion. When Neumann began to phase out the antiquated tube mics in the race during the late 60's and early 70's to replace tubes with the newer state of the art transistor, their two main large diaphragm mics were the U-87 and U-47 FET. Both mics had the same capsule in them but with different electronics. The U-47 FET (FET means Field Effect Transistor) was physically, a shorter, squatter version of the U-47, while the U-87 looked exactly like a U-67. The iFet 7 takes the U-47 FET body style with the capsule both mics shared and put BOTH sets of electronics in the mic. Pretty brilliant. One switch turns this mike into a 47 or 87. Besides vocals, this mic is great for bass or kick drum in the U-47 mode.

Soundelux U-99 (Tube)

This is one of Dave's earlier mics and is very loosely based on the U-67 but has a much more extended top end which makes it almost move into 251 territory. A great vocal or acoustic guitar mic. Very solid midrange and bottom but a nice, silky top end too. We've retubed this with an NOS Telefunken tube and it sounds great. When we did Devendra Banhart's _____ album, this ended up as the lead vocal mic of choice over several vintage Neumann and RCA mics.

Sony C-37 (Tube)

The story is that, at one point during the early 60's, someone at Sony raised the question, "Why are the Germans the only ones building great microphones. Why can't we, the Japanese here at Sony build great microphones?" And they did. The C-37 is not as well known as some of the above classic mics, but those in the know, do know that the C-37, and for that matter all of Sony's studio quality mics, more than holds its own with any classic Neumann, Telefunken or AKG microphone. Daniel Lanois (U2, Peter Gabriel, etc.) has been quoted as saying the C-37 is his favorite acoustic guitar mic.

Sony C-38

After telling Neumann they better watch their ass by building the C-37, Sony then proceeded to kick Neumann's ass technologically speaking. The C-38 is the world's first solid state condenser microphone. That is, it has no tubes and is powered instead by +48v phantom power. The C-38 has an ingenious gear system that's used to change the bass roll-off on the mic. The C-38 was a huge hit when it came out and was of course immediately copied by Neumann who then introduced the U-87 and U-47 FET, but always know the C-38 was first. Word is that Malcolm Addey came back to Abbey Road after observing the Beach Boys at Capitol Studios who were using the C-38 and insisted on EMI buying several C-38's for use on The Beatles sessions.

ECM 377 (Solid State)

We also have a pair of Sony ECM-377's which is a cheaper version of the C-38/C-37 that is an Electret condenser in a C-37 style

body. My guess is that the -377 designation means the capsule is descended from the C-37.

AKG 414

The 414 was AKG's answer to the U-87. A solid state mic descended from the C-12 with the same capsule as the C-12. In fact during the crossover period, you can find C-12 tube mics with the 414 style body. The 414 upped the ante a bit on the U-87 with four as opposed to three pickup patterns. The 414 is a really versatile mic. with a very extended top end. It's a personal favorite for background vocals and acoustic guitars and is hugely popular as a drum overhead and room mic. We have two, but they are not an exact matched pair. One is newer, and in all honesty, just doesn't seem as well built as the old one. Sonically they both sound great and are close enough to use as a pair. The older one is the first microphone I ever bought almost 20 years ago and was a huge expenditure for my then very tiny basement studio. I used it for every single thing I recorded.

Blue Mouse

Blue Blueberry

Blue Baby Bottles (2)

All Solid state

I mentioned Skpper Wise earlier. Along with his partner, Martins Saulespurens, he runs Blue Microphones. I think Blue makes some of the best microphones being made today and at fairly reasonable prices. The Blue mics are made in the tradition of the older German mics and completely hold their own sonically next to the classics. From their top of the line Bottle mic to the affordable Baby Bottles, they all sound great. We have several Blue mics at the Hangar and they all get a lot of use, especially the Mouse and the Baby Bottles. The Mouse is used a lot on Vocals, guitar amps, acoustic guitar, and kick drum. The Mouse was one of two main vocal mics on Wilco's Yankee Hotel Foxtrot, one of my fave albums. The Baby Bottles also get used on acoustics a lot as well as drum overheads and room mics.

Mojave MA 200 (Tube)

These mics were designed by David Royer who is best known for developing the Royer Ribbon mics, but who got started in the audio

industry by hot-rodding and customizing tube mics. The MA-200 is Dave's take on the tube condenser and is in the same ballpark as a U-67 but is a bit more hi-fi. This is a great matched pair of tube mics for overheads but also would be great for vocals, acoustic guitar, amplifiers. Yeah, just about anything really.

Small Diaphragm condenser mics.

For some sources, a smaller diaphragm is considered better, particularly when you want LESS low end and a more extended top end and transient response. These mics excell on acoustic guitars, especially close up, and especially when the guitar is part of a dense rock mix. They are also great as drum overheads.

My all time favorite small diaphragm condenser is the older Neumann KM-84s. Unfortunately, they don't make them anymore and have replaced them with KM-184's. I've talked to lots of people who've used both, and while they say the 184 sounds fine, it just doesn't have the magic of the 84's. The 84's are now completely overpriced because of their 'vintage' status. I've bought, listened to, and returned a lot of small diaphragm mics in an attempt to find something that sounds like a KM-84.

THE KA-04 microphone system

The THE mics are a painstakingly handcrafted mic made in Argentina by Taylor _____ and Christian _____. THE stands for Taylor H____ Engineering. Taylor pretty much based this mic around the early Neumann KM series of mics and in my opinion, he pretty much nailed it. Once I heard these with the cardoid capsule, my search for a KM-84 was over. Like the KM series, the capsules are removable and there are also hyper cardoid, omni and diffuse omni small diaphragm capsules for these mics as well as two different large diaphragm lollipop style capsules, six different capsules in all! We have a matched pair of these mics and matched pairs of all six capsules. As mentioned above, these are great as overheads or acoustic guitar mics, but with the lollipop capsules, they are also great vocal mics.

Audio Technica Pro-37R

Besides Blue, the other company that I think makes fantastic mics at a reasonable price is Audio Technica. Every mic they make that I've

heard sounds really good and far better than it should for the price. Until I found the THE mics, the Pro-37R's were my fave small diaphragm mics. I like the THE's better, but I should, they cost about four times as much! I still really like the 37R's though and use them along with the THEs. I mainly mention these because if you're a home recordist on a tight budget, you can pretty much buy any mic by Audio-Technica or Blue and know you're getting a good mic.

Neumann 562/M-62

Before the KM-84, there was the KM-54, a tube version of the 84. These are even rarer and more expensive than the 84. I've never even seen one. The Beatles used these a lot and in a lot of the film clips you see of them singing into a small mic with a pop filter. That's a 54.

We recently acquired a pair of the 562's with M-62 capsules. These are essentially the East German version of the KM-54. The body is essentially a smaller CMV and in fact shares the same power supply. According to Bill Bradley at The Mic Shop, the capsules are the same as the KM-54s.

Telefunken ELA M 260

Mojave MA-100

Chameleon TS-1

Peluso P-28

Around 2006, there was a sudden explosion of SDC tube mics. First the TS-1, then the MA-100 and then the P-28. All these mics have three things in common. They're built from parts made in China, assembled and tested in the USA and designed in the USA by someone who totally knows their shit about mics. The MA-100 by David Royer (See above), the TS-1 by Terry Setter (a teacher at my alma mater, The Evergreen State College in Olympia, WA) and John Peluso. The MA-100 and TS-1 are similar and both sound fantastic. The P-28 has a more extended top end, a slightly larger diaphragm and a NOS Telefunken tube. The P-28 seems to most closely go after the KM-54. The Telefunken M 260 has a very rugged build and uses a NOS telefunken EF 732 tube. All of these mics have seen extensive use as drum overheads and acoustic guitar mics.

Earthworks TC-30ks

These mics were designed by David Blackmer who was best known by the initials of his eponymous company David Blackmer eXperiments or dbx. These are instrumentation quality, very small diaphragm omni mics with very extended high end response to nearly 40k. David put forth the theory that even though we can't hear pitched information above 20k, we can actually hear sounds up to 50k, especially in the first few microseconds of a transient attack. These sounds are what we use for spatial cues and part of how we perceive a sound as 'real.' The Earthworks paired with say a Millenia Media mic pre are about as pristine and flat-wire as you can get. Keeping in mind the omni pick up pattern, these mics sound great on acoustic guitars, strings and drums/room mics. Some engineers will use them really tight on super loud guitar amps as they exhibit no proximity response. Tape Op's gear editor Andy Hong is a huge Earthworks fan for drum miking . Check out some of his records with the band Karate to hear his great audio-verité drumsounds.

Altec MDL 210 tube microphone

This is a vintage small diaphragm tube condenser mic. It's kinda quirky but when it works it sounds amazing. I've had great results using it on snare for quiet, jazz type drums, especially with brushes. It can sound amazing or terrible on guitar amps. It was originally designed as a lavalier mic for Newscasters and such. Maybe not a 'go-to' mic when you're in a hurry but fun to experiment with when you have more time.

Sony ECM 50

This is another very small lavalier mic meant for broadcasters. The thing is, it sounds amazing and it can handle a lot of volume. It's so small you can put it almost anywhere. I like to use it on snare where I'll use a rubber band to attach it to the Heil mic (making sure to phase align the diaphragms) and print each mic to it's own track. Sometimes it's the combo of the two mics, sometimes it's either/or but between the two mics, I always get a great snare sound. Another cool usage is to put it inside an acoustic guitar if you have to track one in front of a drum set. It may end up more of a scratch track, but I've been able to EQ something usable out of it sometimes.

PZMs

PZM stands for Pressure Zone Boundary Microphone. These are very small diaphragm condenser mics mounted so they face a metal plate at a 90 degree angle with a small 1/16" air space between the capsule and the plate. The theory is that off incidence reflections are eliminated from going into the element. These were very popular in the 80s and early 90s but have fallen out of favor now. I really still love them as drum overheads though. Overhead is actually false since they're mounted on two huge solid core doors and there's no way they're going over anything. Drum side mics would be a better description really. I usually use an XY pair of the THE's or the AT Pro 37R's over the center of the kit to fill in the center image a bit, so that about 70% of my overhead mix is the PZM's and the rest the ATs. Back in the 80's you could buy really cheap PZMs from Radio Shack (\$40 instead of \$300) but they had AA batteries and a 1/4" unbalanced output. Of course there are schematics on the Internet to modify these which is what we've done to them.

Ribbon Mics.

Ribbon mics are a type of dynamic mic that uses a thin ribbon as the element instead of a diaphragm. They were some of the first quality mics ever made and have become very popular and trendy in recent years for a good reason. They sound great. They are very different from condensers and even other dynamics. They have a slower transient response than condensers and other dynamics. Why, you might ask, would you want a mic that is LESS accurate? Well, especially in the age of digital recording, perfectly accurate recordings with great transient response can sound kind of harsh and brittle. Back in the day when all your favorite rock and jazz records were recorded, they were recorded to tape (Something we can, and still, do here at The Hangar). Tape also does not reproduce transients perfectly and tends to soften and limit them. People like the way this sounds. People like the sound of tape. People like the sound of Ribbon mics when they record onto digital systems. Recently ribbons have become popular again as drum overheads. Keeping the above in mind, other popular uses of Ribbon mics are on reed instruments like harmonica and saxophone as well as strings. Steve Albini popularized their use on guitar amps. Lots of engineers like them as vocal mics. In all instances, the above uses

tone down transient information like scratchy strings for instance and results in a warmer, richer sound. You might prefer a ribbon mic for a string section for instance while you might want a condenser for a solo violin line. George Massenburg has been quoted saying that he'll use Ribbons on vocals for the softer top end but then boost the real high end above 12k or so with a good EQ for a really natural, 'airy' sound.

PHANTOM POWER WILL DESTROY RIBBON MICS!!!! It is super important to make sure you have the phantom power off before connecting a ribbon mic.

RCA 77DX

This is one of the all time classic microphones and has been used on 1000's of classic records. First introduced in _____, the 77 was the successor to the immensely popular RCA 44DX and added a variable pick up pattern feature. Inherently, all ribbon mics are figure 8 with one side 180 degrees out of phase from the other side. The off-axis rejection of a figure 8 mic is near total, much better than a cardoid. Smart engineers have figured out a whole bag of tricks to take advantage of these characteristics.

RCA 74B

This was the junior version of the RCA 44. Without a ruler next to it, it pretty much looks like a 44. A fixed figure 8. This mic sounds fantastic! We had it worked on and re-ribboned by ribbon maestro Clarence Kane.

Royer R-121

This is the mic that pretty much singlehandedly started the ribbon mic revival along with Wes Dooley and AEA. Designed by David Royer and reminiscent of the early Reslo ribbons from the UK. This mic sounds fantastic on just about anything which is why we have two of them!

Coles 4038

Another super classic ribbon mic. These were designed by the BBC and were used as drum mics for The Beatles, Pink Floyd and tons of other records from the UK. Word has it that the drums on Tom Petty's 'Roll another joint' song were recorded with one 4038. The

bottom end on this mic is amazing and it pretty much sounds great on anything you stick in front of it.

Royer SF-12 Stereo Ribbon Mic.

Craig Schumacher (Calexico, Neko Case, Iron & Wine) says the SF-12, which he uses as an overhead, is the foundation of his drum sound. Have you heard his records? They sound amazing! Then at one of the Tape Op Conferences in New Orleans, Ross Hogarth (R.E.M., Ziggy Marley, Melissa Etheridge) demonstrated his two mic drum micing technique with a 4038 and an SF-12. It sounded amazing. I got back home and bought an SF-12. Why did I wait so long? This mic sounds good on anything and everything. It's seen a lot of use on piano and string sections by engineer Robert 'Flossy' Cheek as well as drums. Chris Woodhouse used it to record a marching band drum section on !!!'s Myth Takes album.

Beyer M-160 and M-130

The Beyer 160 is another classic ribbon mic with a smaller ribbon than many of the older ribbon mics. It was famously used by Andy Johns for the drums on Led Zeppelin IV and When the Levee Breaks. It has a unique address mode, so ask us if you've never used it. The M-160s are a cardioid ribbon while the M-130 is figure 8. A combo of the 160 and 130 is a popular MS pair. If you don't know what MS is, it means Mid-sides. Look it up on the Interweb or ask us about it.

Shure 330/350

This mic is a hidden gem of the ribbon mic world. Don't tell anybody about it!! We have three of these and use them all the time along with the Royers, Coles and RCA's. They all sound great but have their own personality. It's surprising how often these slightly beat out the more expensive ribbons for a certain application. All the vocals on Two Shed's Strange Ammunition (One of my fave albums done at The Hangar) were recorded with this mic. These were manufactured continuously until just a decade or so ago. Rumor is that Shure discontinued this mic when the one woman who worked there and knew how to put in the ribbon and properly tension them retired. Once she was gone, I guess this little gem didn't really fit well into Shure's much larger business at that point. Luckily, Clarence Kane can re-ribbon and make these mics sing.

Shure 315

Reslo RBL

These are both more lo-fi ribbon mics. The 315 was the precursor to the 330/350 but with a much more limited frequency response. The Reslo is also pretty lo-fi but is best known as one of the vocal mics the Beatles often used in early live performances. These can still be cool on the right source where top end isn't a concern or might even be unwanted.

Dynamic Mics

These are the workhorse mics. Indestructible and can handle anything thrown at them. Not as cool, trendy or historic as condensers and ribbons, dynamics are indispensable and the mic of preference for most drums and guitar amps as well as tight vocal situations.

Shure SM-58

The most ubiquitous mic in the world! Jon Brion hates them and Daniel Lanois uses them for Bono's vocals on all the U2 albums. Still can't go wrong with a 58 on just about any source.

Shure SM-7

This is one of the lesser known but great vocal mics. Originally intended for broadcast and voiceover works, this mic is a favorite of many in the know engineers. Particularly good on loud, screaming vocalists. This is the other mic Jeff Tweedy used on Yankee Hotel Foxtrot.

Neumann KMS 105

OK, this is not a dynamic and is in fact a condenser. But, it's intended to be used where you would use a handheld dynamic mic. These mics sound amazing on vocals when you need a handheld vocal mic, or to track vocals when the whole band is playing and the vocalist is in the same room as the drums. Don Zientara of Inner Ear Studios in DC told me about the KMS 105. Don said he used this mic for most of the vocals the Fugazi records. After that recommendation I tried one and was not disappointed. Most of the vocals on Jackpot's Moonbreath album were recorded with this mic live with the band.

Heil PR 20

Bob Heil is a pioneer of audio. He did sound for the Grateful Dead. He invented the Talk Box that Peter Frampton made famous. Now he's making mics, dynamic mics to be precise. "Why shouldn't a dynamic sound as good as a condenser!," Bob says. "Why the Hell would you want to use an EV PL-20?," asks Bob. "Those mics are 20 year old technology. We can make better mics now!" Bob's a feisty guy and his mics really do sound great. We use the Heil all the time on snare drum. Sounds better than anything else we've found.

EV PL-20

Another warhorse. Originally meant for broadcast and voiceover work, the PL-20 became the go-to mic for bass amps and kick drum. Don't tell Bob Heil you use this if you ever meet him.

Sennheiser 421

Another super classic mic. People swear by these on toms. They're also great on guitar amps. Notice how they look like phasers from the first Star Trek series. They are fun to point at people and play Star Trek with.

Audix D-2

Sorry, but I think these sound better than 421s on Toms. Lots better.

Blue/EV Cardinals

OK, these aren't dynamics, they're medium diaphragm condensers but they sound amazing on toms while we're on the subject. They have two independent swivel mounts and they're fairly compact so they're easy to position on drums. They're also pretty sturdy if they get hit with a stick. If you've read about people using U-87s on toms and wondered how they could afford it, or why they're not worried about them being broken, these mics are the solution.

Sennheiser 409

The Pink Floyd mic. Yep, the Floyd used these live a lot for vocals. They're really fantastic for guitar amps.

Beyer M-69

Billy Anderson (Neurosis) says these are the best mics ever for guitar amps. He's right. Notice how when it comes to mics, there are more than one 'best ever' for just about everything? This is why you still have to listen to what you're doing.

AKG D-112

Pretty much the standard for kick drum mics for anything recorded in the last 20 years. Everyone is wishing something else sounded better so they didn't always use this mic, but they keep coming back to it.

AKG D-12

The precursor to the D-112 and pretty much the standard for kick drum for anything recorded before the D-112. Think Beatles kick drum as opposed to Metallica Kick drum.

AKG D-19

These small dynamics were the workhorse mics at Abbey Road during the Beatles days. Ringo's drums were primarily recorded with D-19s and a D-12. They're a bit fragile, so handle with care! Use a SM-58 when you want a mic that can pound nails.

AKG D-17

This an odd little dynamic we got from our pal Richard who lives in Germany and finds old mics. This sounds great on guitar cabs!

Audix D-6

Blue Kick Ball

Shure _____

More kick drum mics that don't get used that much. Flossy swears by the Shure ____ and the Deftones used that and the Audix for drum tracking here.

Placid Audio Copperphone

And finally, sometimes good is bad because what you really want is bad which is good. This mic does not sound 'good'. It's a very lo-fi filtered mic that sounds like a bad telephone or radio which can be a cool effect. This mic is really well built too and the copper body is a work of art. Mark Piro who makes this mic is in The Polyphonic

Spree and our friend Jason Lytle of Granddaddy uses one of these live.