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REVIEW

BY PAUL VNUK JR.

SPL (Sound Performance Lab) is a German company with a 30-year history of crafting high-end and innovative audio gear. With a lineup that includes summing mixers, monitor controllers, EQs and more, SPL is perhaps best known as the creators of the Vitalizer and the Transient Designer.

Another of the company's significant achievements is its 120V rail op amp. Back in our November 2012 issue,



SPL Iron Mastering Compressor

When they say "big iron"... they mean it

when I interviewed famed mastering engineer Howie Weinberg, he raved about the 120V rails. According to Howie, "The 120V Consoles that SPL makes have much more headroom than a 60V analog console and you can cut hot records a lot cleaner."

These op amps are currently found in the company's Neos mixing console, Phonitor 2 and Phonitor Mini headphone amps, and the Passeq Mastering EQ, as well as the newest member of the SPL family and subject of this review: The Iron Mastering Compressor.

I first laid eyes and ears on the Iron when *Recording* traveled to The Studio at the Palms in Las Vegas last April for a special product launch event hosted by Audio Plus Services. This is also where we were introduced to SPL's new Creon interface (review forthcoming), as well as Focal's Trio6 Be Studio monitors (reviewed in our 2015 October issue) and the new Eden microphone from Lauten (review forthcoming).

Metallurgy

According to SPL, Iron takes its inspiration from "vintage compressors of the radio era." However, nothing about Iron is a clone, copy, or approximation of any other compressor past or present. The magic of Iron lies in its balance of simplicity and depth; overall I would call it a precision-feel piece with a high level of versatility and unique features.

Iron is a variable-bias tube compressor, often called a "vari-mu" design. Unlike most standard variable-bias designs,

which use the bias of a single tube for compression, Iron uses a dual circuit topology, where the incoming signal is split between two tubes running in parallel and then recombined. One tube is a 12AX7/ECC83 and the other a 12AU7/ECC82. Each tube yields a slightly different compression curve and feel.

It is interesting to note that neither of these tubes is commonly used in compression circuits, as both tubes are known for their "breakup" characteristics and you see them more often in microphone preamps and guitar amps. This is "interesting" rather than "a potential issue" because Iron has exceptionally high headroom—presumably thanks to the famed SPL 120V op amps, of which there are 18 inside! It's virtually impossible to overdrive the unit.

The unit also has 4 custom Mu-Metal iron transformers made for SPL by Lundahl.

Four spaces of heavy metal

Iron is an imposing yet elegant 4U rack-mount unit. Its look and layout borrows heavily from the Passeq, with a pair of large knobs in the center of each channel and all of the other controls radiating out from those. Unlike the Passeq, the Iron does away with the classic SPL champagne silver/gold look and is finished in the newer brushed matte black found on products like the Phonitor 2. Iron is available in a stunning red finish as well.

Rear-panel connections are quite simple—balanced XLR ins and outs and unbalanced 1/4" TS connections for external sidechaining.

Iron can be run in dual mono or linked stereo mode. Unlike many linked stereo compressors, where only the threshold settings are linked, on Iron all settings (with the exception of input and output levels) are linked and controlled by the right channel controls.

Each channel is dominated by a large backlit VU meter (switchable between gain reduction, 0 or +10 dB levels) and a large 41-position stepped Threshold knob—the same as the one found at the center of the channels on the SPL Passeq.

Unlike the threshold knob, each control on Iron uses a stepped switch for precise recall. There are 6 switches per channel, and each one uses the same 6-position stepped switch. There are also a handful of 3-position toggle switches. All of the switches feel fantastic and are of the highest quality, with that satisfying hearty click as you change settings.

Controls and features: each channel

Input/Output: The Input and Output each have a throw of ± 12 dB in 2 dB steps, but they're not set up with the typical single knob covering the entire throw. Instead, there's a separate 3-position toggle labeled "- 0 +" and a pot with 12 dB of throw; the switch controls whether the knob is boosting, cutting, or bypassed to unity gain. This may seem a touch complicated, but this type of stacked circuit offers a cleaner signal path. It's a similar concept to that of Manley Labs' Massive Passive EQ, reviewed in our February 2015 issue.

Threshold: as mentioned above, this large central knob offers 41 full stepped positions from 0 to 40 dB. It has a tight, springy resistance that feels great.

Attack/Release: Here is where the unit becomes a “feel” device. Both Attack and Release have settings of Slow to Fast with no numeric labels in between. Why not? Because it would be pointless; the attack and release speeds are entirely affected by Iron’s other functions and change quite drastically with each. Bottom line—you set the Attack and Release by feel and by ear.

Tube Bias: This setting, controlled by a 3-position toggle switch labeled Low/Medium/High, changes the bias of the tube. The higher the bias, the more the compression digs in.

Rectifier: This is perhaps the single most timbrally wide-ranging parameter on Iron. Paraphrased from the manual, the rectifier produces the bias voltage that controls the parallel tubes. There are six different choices, and each one has a direct and noticeable effect on the attack and release time. There are two initial Germanium choices (1 mF, 2 mF), LED (3.3 mF), Silicon (330 nF), a 3rd Germanium (220 nF) and a combination of Germanium and Silicon (100 nF). The only other compressor I have seen that offers a similar feature is Chandler’s Germanium Compressor (reviewed March 2008), which also uses multiple choices of Germanium, Silicon, and Zener settings.



Side Chain EQ: This control, while common on modern compressors, is usually a highpass filter that allows low frequencies to pass through the compressor without it clamping down. On Iron you get 4 choices of preset EQ curves that are quite complex, as well as traditional external control. Note that like all sidechain signals, this does not add EQ or filtering to the signal path; instead, it controls which frequencies trigger the threshold and compression. Of all the functions on Iron, this one is the biggest “taste and feel” control, but the printed

manual does offer a graph with each curve on it so you can make an informed choice.

Hard Bypass: The last control for each channel is an individual backlit hard bypass button.

Controls and features: global

In addition to the individual channel settings and the link function, there are a few unique global settings as well. The first one is a global EQ of sorts with two available choices.

The first is labeled AirBass. As its name implies, it adds a thick 2 dB boost in the low end, centering on 40 Hz, while the upper frequencies are similarly boosted 2 dB in the 10–20 kHz range.

Flipping the toggle switch in the other direction engages Tape Roll-Off, which rolls off the high end steeply, starting at 5–6 kHz. The extreme low end is also gently attenuated. As its name implies, this is of course set to mimic the rolloff characteristics of hitting analog tape.

The last feature of Iron is Auto-Bypass, which allows you to dial in an interval via a small variable knob that will engage and disengage the unit. This allows you to sit back in the sweet spot and audition Iron’s affect on the music. This may seem like a novelty or a gimmick, but it works well and allows for better decision-making by just listening rather than pushing buttons and allowing said button presses to influence your decisions.



SPL Iron Mastering Compressor

gain reduction hard—up to 10 dB on average. This gave a nice high-fi tube tone that was not quite LA-2Aish but still vintage and controlled without being too squashed.

Oddly, the only application where I did not use Iron much was on my main mix bus! Primarily that was because I'm too used to having a standard highpass style sidechain as well as a mix/blend control. In other words, I like a hint of bus compression sprinkled on the mix, but I like the ability to dial it back.

Conclusion

All of the work that I did with Iron made it to my final mixes for the album project I was working on. I have zero reservations recommending it as a high-fidelity, versatile dual mono or stereo compressor that will handle most any compression duties you push into it. The only thing to be aware of is that it is not a vibe box in the traditional sense. It does not get gritty and driven, and its tube tone is on the clean, opulent, pristine side.

It is not cheap—like most mastering-grade boxes, it will set you back a healthy \$5000 street. Keep in mind, though, that at \$2500 per channel it's not much different than many high-end mono tube compressors... and nothing else out there really sounds like it. ➤

Price: \$4999

More from: SPL, spl.info; dist. in North America by Audio Plus Services, www.audioplusservices.com



In use

I should start off by pointing out that I am not a mastering engineer, but luckily Iron is equally adept at bus work and individual instruments, both tracking and mixing.

After a few days of use, the Tube Bias and Rectifier settings can become second nature as they relate to the overall grab and feel of the unit; you will find your own favorites for many sources. On the other hand, even after 2+ months with Iron, I am still coming to grips with the Side-Chain EQ and what sources and styles of music each setting is best suited for.

As for AirBass and Tape Roll-off, they do exactly as advertised. Again, how and where they are used will be a case by case scenario.

I had great results with fast Germanium settings on the drum buss with Tube Bias at High, AirBass in and the Side Chain on 2. This gave me tight, big and punchy drums. On the flip side, setting Iron slow and gentle with a low tube Bias, the Germanium setting of 220 nF, and the Tape Roll-Off on, was great for more vintage drum tones.

On electric guitar on a Ryan Adams American style song, I favored the Side Chain off, a Medium Bias, The Rectifier set to Ge/Si and the Tape Roll-Off on.

My favorite use of Iron was as a pair of mono vocal compressors. Here I liked digging in deep with the Bias at High, the Sil setting for the Rectifier and the Side Chain off, and really hitting into the

Taking Iron To A Mastering Studio

As I mentioned, I am not a mastering engineer, so I took the Iron on a field trip to spend some time with mastering engineer Justin Perkins, who owns Mystery Room Mastering in Milwaukee, WI. Justin is a former mix engineer who used to work at the famed Smart Studios in Madison, WI. His resume includes work with The Replacements, Tommy Stinson, Gaslight Anthem, Cory Chisel, and Screching Weasel, to name a few.

When I went to visit he was just wrapping up a mastering job for the forthcoming Miles Nielsen and The Rusted Hearts album *Heavy Metal*, due out in early 2016. (Miles is the son of Cheap Trick's Rick Nielsen.) We spent an afternoon with Justin getting familiar with Iron and doing some quick masters of various material, from prog-metal to ECM-style jazz, Americana-classic rock, and all things in between.

Justin appreciated how absolutely clean the unit was; we jacked it up to extreme levels with no signal through it and Iron is all but dead silent. He also liked its slowest attack and release and found that those settings worked well for jazz and folkier fare, where you could dig in nicely for weight and fullness. On heavier metal styles and hard rock, like many mastering compressors, Iron worked best when set a little faster, but just tickling the meters.

With regard to the Tape Roll-Off, Justin thought it was well suited for taming sibilant and screechy sources like soprano sax. On the flip side, he really like the Air part of the AirBass



setting, but wished the Air and Bass could be split and used individually. He worried that in mastering it may be problematic to offer such a big low-end stroke.

Overall he was so intrigued by Iron that I decided to leave it with him for a day, so he could run a whole new master of the Miles Nielsen album through it and give the band and producers a choice. His settings here were: Germanium 1 mF on the Rectifier, Side Chain off, Attack at medium fast, Release at one click below Fast, Input at unity, output +8 dB. Threshold was set to 11 dB and AirBass and Tape Roll-Off were off.

When I came to pick up Iron, Justin only offered one concern with the unit: the 2 dB steps on the output side. Like many mastering engineers, Justin does not use a console and patches direct from compressor to converter. He felt that in mastering vs. mixing, 2 dB steps may be a bit broad, and more work would need to be done in the box to make minute final adjustments. As such he felt 0.5 dB steps would be a wiser choice.

The outcome of the story is that in the end everyone involved chose to go with the Iron mastered version and you can check out Miles' website for release info sometime in early 2016. Not a bad endorsement!—PV

Recording would like to thank Justin for his input and expertise. Learn more at mysteryroommastering.com and milesnielsen.com.