

FAIRCHILD STUFF... yeah - mostly junk... opinions from John Klett

This is a pdf of a text doc that I made from copying off a forum post I wrote quite some time ago. The text file sat on my drive for a long time. The forum archive is likely hidden, and now I am giving it a quick re-read and posting it as a pdf. I have not changed my opinion much regarding Fairchild, though more of that gear has come through. In short, and IMHO, there are only three things they made that are really worth anything close to half of what they actually sell for.

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I am not old enough to have used Fairchild gear when it was NEW... I could have but I was - like - twelve - and really excited to have a reel to reel that would do 7-1/2 ips two channel with sound on sound, a Sony 1/4" 2 track "dual mono" with track bounce, sound on sound, vacuum tubes, round vacuum tube "clapping" level meters... really groovy, and with a couple Lafayette "Dynamic" mics... wow! There was a lot of Fairchild around when I started working in real studios in the mid-late '70's. In 1977-78 I bought a custom Langevin/Fairchild console that came out of a studio called Media Counterpoint. I had it rigged into a window in the loft building where I lived. That loft had a small isolated recording studio in it that was built by the former tenants, a band called The Laughing Dogs. They left a home-made console too, but it really sucked.. I mean - like total vacuum. So I had this Langevin desk with a pile of Fairchild pre's and line amps in it, Painton faders... four busses. Right around the same time I got that p.o.s. working some poor guy (who later became a friend and asked me to be Best Man at his wedding) bought a Fairchild console based completely on Integra modules and Lumiten attenuators. He had chopped the thing in half (literally) and hauled it out to South Dakota. After a month or two of not getting anywhere with it he flew to New York with a very heavy suitcase full of broken junk and started looking for me. Apparently the same broker was involved in the console I bought as the one he bought and, I guess, since I never called back and asked for help that made me an "expert"... right. So he just showed up and I fixed some of the broken stuff in my micro-shop (it was basically a closet) at 2 West 45th street while he told me about his console. Eventually I flew out to Rapid City to get his console going for him. This studio was owned by one of the New Christy Minstrels, who, it turned out years later, would hire me to build another studio for him, also in South Dakota. So after a few days working mostly non-stop, we got the console going and then modded the fader system, which was based on remoted Lumiten optical attenuator cans, to do VCA style subgroups... it worked - it was awful but it worked and I guess they did some records... on a Scully 280 1" TWELVE track... ah those were the days.

Since then I've worked on most of the Fairchild stuff I've ever seen in old catalogs, audio publications and original lit/docs etc.. Based on all that I have formed an opinion.

When someone says Fairchild I say "mostly junk - only a few gems..."

When I see Fairchild "modules" come up the are nearly always from the Integra Series of sound system and console building blocks.

- 661 - Noise attenuator (Auto-Ten fairly slow optical noise gate)
- 662 - Preamp/Line Amp (15 to 50dB gain - big output transformer - very grainy)
- 662TXI - Preamp/Line Amp as 662 with input transformer added
- 663 - Compressor (optical 2 millisecond attack time... sssllllloooooowwwwww)
- 663 - Compressor as above but Stereo
- 664 - Program EQ (3 band switched freqs mid band - passive 17dB insertion loss)
- 665 - Program EQ w Amplifier (662 and 664 mounted together - never seen one)
- 665TXI - Program EQ w Amplifier as 665 with input transformer added
- 667 - Power Supplies for Integra Series... various versions

There were also the actual console modules which were mostly the same thing but mounted as all-in-one channel strips... really cheesy knobs and matt finish blue Formica, unless you ordered it with a different color... I had to engineer a couple dates on one... headroom was certainly an issue... and it was in New Jersey... a long way to go to have no fun.

Of the Fairchild Integra modules...

The dynamics modules 661 and 663 are based on an optical attenuator that used an incandescent light bulb and a couple LDR's (Light Dependent Resistors). The light bulb would light up and shine on the LDR's and the resistance would drop down pretty low and act as the shunt leg of an attenuator. This is the same thing an LA-2 does but there is are critical differences. The LA-2 uses an Electro-Luminescent panel (EL panel) as the light source. It takes very little time at all for that panel to light up whereas it take quite a bit longer for the filament of the light bulb to heat up enough to light and cool off enough to go dark - and the LDR sees infra-red pretty well is are themselves not very speedy. The signal path in the 661 and 663 is thru the LDR's and other passive components only. The source and load impedances you use "around" these modules has to be controlled and matched to the impedance the module was designed for. The active circuitry on the 661 and 663 modules is just a detector circuit and whatever is required to control the lightbulbs appropriately, fed through a transformer that sits across the input. The response in these modules is slow so they end up being

more of an effect than a real dynamics controller. To package them up properly with controlled impedances in and out and an output amplifier to recover lost level and give them a chance at working predictably and maybe even passably... Have at it.

The 662 Amplifier is kind of cool because it does have a color - a very grainy germanium mostly PNP transistor amplifier followed by a big beefy output transformer. The console I had used about forty of these and they worked... though I used the patchbay to bypass them whenever possible. I think that if you want another color and can pick these up CHEAP - why not... you would need some input transformers and 600 ohm attenuators to make them more useful...

The 664 EQ was actually not bad... nor is it a Pultec or a Lang. The 664 is a passive module that needs to be fed from a 600 ohm source and look into a make up gain amplifier that presents the EQ with a 600 ohm load... passive circuit in a controlled impedance "line" same as the gate and limiter modules. An input transformer going in and a 662 Amplifier going out would work - which is what Fairchild packaged up and sold with the EQ as the Model 665.

I wouldn't bother with the Fairchild power supplies.

The Integra modules might be useful but the problem is that they are really not worth anywhere near what they are being sold for, and the cost of getting them mounted in to a rack and powered up has to be added. Say you buy a pair of 663's for \$450 each (instead of \$45) and pay a tech to do a decent packaging job instead of doing it yourself... you are into it for \$900 or \$1200 or more. I'd rather have a couple RNC's or any number of other things.

Of course it's not all bad. The Fairchild name was "made" by two or three products that were gems. These are the ones that command the serious money and get used - as opposed to the other things that were made that say Fairchild on them and sell at hugely inflated prices relative to what they actually can do for you beyond take up space.

670 - Stereo Limiter (originally sold for around \$1600 USD...) this is the classic Fairchild limiter that all the mastering places had when tubes ruled.

660 - Single Channel version of the 670 Limiter (originally sold for about \$950 USD) - take two, they are smaller than GE's.

and the lesser known...

666 - "Devil's Limiter" - 2U rack-mount - I have only seen three 666's in my life. These are rare and the ones I saw had hand-drawn meter faces so I imagine they did not make very many of these... they are good - not worth what they sell for in my view - start with a nice UA 175/176 as a reference point - the 666 could take abuse and was a little cleaner sounding in some ways but the 175/176 limiters are generally more useful for more things... your mileage may vary... all this stuff is old and a lot of it is broken.

AND... Fairchild stuff that was not so great...

600 "Conax" Series... over-modulation limiter... which is really just a peak clipper... this thing works in a chain where one had H.F. pre-emphasis and a clipper for protection, as in a disk cutting chain or at the front-end of a radio transmitter. Basically it clips the "hair" off. Great for transmitters as long as you don't trim off more than 6dB of hair. By the time you hear it doing anything it is pretty terrible. Sadly too many people have bought these thinking they were related to the 660/670. They are worth the chassis, transformers and other components and may be useful as a color if you rip out the emphasis and clipper circuits and replace that with an attenuator. The 600 was mono "unity gain", 601 was mono with 40dB gain, 602 was stereo version of 600, 600A was set up for doing "opticals" (recording optical film tracks, which is a job I used to do)... I remember the smell of the film stock whenever I think about opticals... so of these the Conax 601 would be the least bad one to have to start with for partially gutting out and messing with.

658 / 658A "Reverbertron" - I had one - actually it did NOT suck - it was based around several spring tanks mounted on a big rack panel and sounded a lot like a MasterRoom but thicker, darker and noisier. Mine sounded pretty good and it had an optical attenuator that did... something... can't remember what... maybe adjusting reverb time by gating? I'd like to find another one to replace the one I sold, but not at "Fairchild" prices. I certainly don't "need" one, and you don't either, unless you are simply ape over having a variety of crazy spring reverbs and think AKG BX\* reverbs are too good and Urban 111C's just have too many knobs, yet not enough choices.

673 "Dynalizer" Dynamic Equalizer - does a Fletcher-Munson Loudness Curve equalization dependent on level - I think it's boosting highs and lows as level drops - like an automatic loudness control. This

uses the same optical attenuation as 661 and 663 have so you need the controlled impedance "line" source and load. It's kind of slow and stupid but - who knows - possibly useful as a "thing". You would have to get the gain structure around this carefully to make it work "well".

676 Disc and Tape Head Preamps... based on the 662 preamp... not great...

and the LUMITEN SERIES attenuators...

Fairchild - in the late 1960's - was big on using light bulbs and LDR's (Light Dependent Resistors) to control level. There were 668 series linear faders... the faders themselves were just turns of wire around a plastic tube and the fader knob would slide a wiper along the turns - a wire-wound linear potentiometer. This would control lightbulbs that were in little plastic boxes (light proof) either in the fader unit or remoted in little octal plug-in cans. The way I remember it (and memory is a funny thing) there were two lightbulbs in each Lumiten and each bulb shined on an LDR. One was in series and one was in shunt and one brightened while the other dimmed so it was a variable "L" pad. The 669 Series were rotary controller versions... both 668 and 669 were low impedance attenuators and there were high impedance versions 677, 678, 679...

There was other Fairchild gear and it comes up from time to time...

510 was a consumer compander based on the 661 and 663 type circuits but packaged as consumer hi-fi gear - this is noise reduction box and conceptually like dbx in that it's companding action is done on one full spectrum band (unlike Dolby A or Telcom that broke up the audio band in to four or five regions and companded those). The 510 today is useless for the original target market - home hi-fi - but kind of cool for the odd effect in the studio because it is all packaged up... it sits on a shelf real nice and once a year you can just plug it in and go (unbalanced).

610 was a 5 or 10 watt power amplifier. There are a number of small transistorized amplifier modules and one full rack sized power amplifier they made. None were particularly great though if anyone stumbles across a vacuum tube one I'd like to know about it. It could be good if they made it with the same care they applied to the 660/670.

So... Fairchild - mostly junk and a few gems... junk is not useless... but it may be of such limited usefulness that you really have to look at how much you are going to invest. The one 663 module I have left gets powered up and connected with alligator clips to be used about once every twelve years and for those times it does it's job badly in just the right way...