

The Truth About Multi-Band Portables Way back in '64 when I thought a shape factor was something to do with girls...I wanted a "hot" all-band receiver to do BCB DX with; one that also covered the SW bands in case there was no BCB available... (like in Viet Nam in '66) so I went and tested the 'hot' portables available at the time, namely the expensive units from: Zenith, CE, Sony, Panasonic, and a few others I don't remember now. I took the backs off all, and gave 'em on-the-spot checks for selectivity using known station set-ups. I ended up getting a Zenith R-3000-1, which I still have but use for FM listening occasionally.

More recently, I had occasion to work in a TV repair shop (at the time it was either that or starve...). By this time I knew what my Zenith lacked, and decided to do a bit of research into all the multiband portable units around, up to Sony's \$700 mess.

It isn't a very good picture, when you consider most of the manufacturers are asking over \$200 for their efforts. I will briefly analyze both the Zenith 3000-1, and the new (and more expensive) 7000-1, plus the Panasonic R-5000, which you can own for a mere \$270.

The circuitry for both the 3000-1 and 7000-1 is almost identical. They added a three-transistor weather band, a BFO, a voltage regulator, a "Q" spoiler on the first IF stage (broad-sharp switch) and an S-meter. For this the price went up \$70, for the 7000-1. The front end still uses transistors, and they still use utterly crappy components throughout. (Take the back off & look). There are no figures for selectivity (ha!) or sensitivity (ha!) anywhere. You pay \$270 for a radio. Think about it!

I once asked of a Zenith "engineer" why they didn't use JEDEC transistors in their equipment... (if you lose a transistor for a Zenith, you have to get the replacement from them, as they only show a Zenith part number. You can't hop down to the local radio shop & pick up a 2N-such-and-such.) His answer (get this) was that "they couldn't find any that would do the job" ...ever look in the Motorola handbook??

The Panasonic RF-5000 is probably worse. Starts out with the older common emitter configuration for an RF amplifier...but wait...the medium wave is fed past the RF amplifier into the mixer; there is no tuned RF stage in this receiver for BCF! Although there are four FM IF stages (commendable) there are only two for AM & SW. They have made an attempt for selectivity by hanging a "CF" (ceramic filter?) in the first IF stage, and switching it in and out with a (remember this??) broad-sharp switch. They did go to the trouble to construct a separate AM/SW IF strip, while Zenith uses (has used) a common cheaper configuration, which probably does wonders for the actual IF curve. Again, for \$270, no selectivity, sensitivity figures.

The Truth About Multi-Band Portables The Sony effort, the \$700 jobbie, was recently on display at Henry Radio in Los Angeles. Next to it, for the same price, sat the National HRO-500. The difference between the two is roughly like the difference between DXing with my Atwater Kent TRF against an HQ180.

The Panasonic, Sony, and Zenith are the better of the multi-band portables. It gets worse, (much worse), as you go on. The German-made sets are something to behold inside. Much like the proverbial "rat's nest." You ask, what is good? For serious DXing, none of them. For the same price, it is much better to look into a clean used Hammarlund, or the like. The surplus market offers much, the military Collins (51J3-K388; R389; R390; & R390A), SP400 & SP600's, ARBs, Command sets, several compass rx's, etc. Hammarlund HQ's are going used for around \$100-\$250 (see previous article, "At Henry Radio.").

And so, fellow DXers, if you own one of these jewels, as I do, I know the feeling. If you don't, but were considering purchasing one, you now know what you are going to get! I think they are fine for casual listening, and generally look just great, but they are not communications receivers in the true sense, so if you haven't made the mistake yet, learn well!
(1-25-72)

The National NC-120 is a rather curious creature. To begin with it is a bulky sun-of-a-gun, weighing 70 lbs. and measuring 1x1x2 feet in size. It features 12 tubes, 2 RF and 2 IF stages, and a phasing control never works. An additional feature is a phone jack in the rear permitting one to tape what one is monitoring off the front panel jack. Although the NC-120 has no bandspread control, which makes it almost useless for S/DX, it does have an excellent logging scale with which one can establish a frequency to as close as 1-2 kHz on BCE.

Selectivity is fair, with pretty broad bandwidth, especially on locals. A Q-Multiplier can compensate for this. And if you live across the street from a 50 KW rx and want something that is relatively spur resistant, I suggest that you avoid this rx like the plague. In an area of high station density (3 50 KWers and 5 5 KWers within a ten mile radius of my QTH) with a longwire antenna, I have had all sorts of trouble, e.g. a KDOI spur on 750, CBS/XETRA spur on 730 louder than CKLG, and a KJR spur on 1000 wiping out KQRO. However, a good loop will work wonders and reduce this problem to a tolerable level.

Sensitivity-wise, the NC-120 is a very hot performer. The results can be seen in my DXR and DXII reports of the past couple of years.

The NC-120 is not a very common rx, so I cannot say what a good price for it is nor can I say how mine compares with others of the same model, mine being the only one I know of in existence! However, if you are looking for a decent 30 year old receiver, this one just might do the trick.

Sony CRF-23C All Wave Receiver

IRCA Technical Report by (MW) Grant Manning, San Diego, and (SW) John Kolb, San Diego.

Technical specs 3 FETs, used for FM mixer, and cascade RF amp on SW bands. 27 transistors for reception, 18 for aux. circuits; total 48 transistors, 32 diodes. Power: 117VAC, or 12VDC. Double conversion above 2.2 MHz. Ant.: two, whip for FM and whip for SW, plus ferrite bar for MW. External connectors for all. Frequencies: MW, LW, FM (64-90 and 88-108), SW (1.6-28.6 MHz), covering all popular SW bands in 500 kHz segments. Max. sensitivity, SW 1 uv, MW 25 uv. Ceramic filters for IF. Cost: \$695. Available from Hamilton's Radio, 7865 Girard St., La Jolla, Calif. 92037.

AM Band Calibration every 100 kHz ($\frac{1}{4}$ " or so), at 600 kHz, right on. At 800, +10 kHz, at 1000, +10, at 1500, +20. Selectivity, broad: 10 kHz at -5db, 20 at -60db. Sharp: 5 kHz at -5db, 17.5 at -60db. Sensitivity: 25 uv for 6db S/N. Comments: It worked quite well, I believe better than any other portable I've seen to date. I didn't like the dial graduations, but that could be improved with tape if I owned it. I don't believe it's worth \$700...but if you are looking for a good hot all wave set, and can go it, it's the best.

SW Band Sensitivity: 1 uv for 6db S+N/N (2 uv for 10db S+N/N). Selectivity: same as AM band. This rx is double conversion, tuneable first IF, which is the current hot set up. Sensitivity is very good, even with its built-in whip. Sensitivity and selectivity leave something to be desired considering the price. The bandspread has $\frac{3}{8}$ " for 50 kHz, whereas most rx's of this type have $\frac{1}{8}$ " for 1 kHz. It would have cost very little more to provide a quality mechanical filter for the IF. The AHL works very well; the product detector does not seem to work so well for SSB - there is overloading of the detector unless manual RF gain is turned way down. Slight frequency instability. A quite impressive rx overall, but this amount of money could buy a lot more.