

There has been so much speculation lately concerning the JRC NRD-525 receiver that its recent release for sale has been one of the most looked-forward-to events of the shortwave year. At least, that has been my feeling. I have not been disappointed.

I have had my new NRD-525 for about a week now and I am just getting familiarized with the various functions it has. In case you haven't read or heard about the NRD-525 receiver, it has a considerable array of functions. To name just a few: It has 200 tunable memory channels, a sweep function that allows the user to sweep between two preset frequencies, and a scan function that allows the user to scan the memories or a block of memories. Its notch filter is excellent, and I consider it to be better than that of the ICOM IC-R71A. The NRD-525's PBS (Pass Band Shift) isn't that impressive, even though it is supposed to be similar to that of Drake receivers; I feel that it is not as good as the PBT found on the ICOMs. [Editor's note: ICOM's PBT functions differently than the PBT or PBS used in Drake or JRC receivers. ICOM's is a selectivity control, while the Drake/JRC system is true passband tuning. Therefore, direct comparison of the ICOM system with the Drake/JRC system is faulty in terms of evaluating which "PBT" is "more effective." Variable selectivity may be of more use in some situations than PBT, and vice versa -- give me a receiver that does both simultaneously! - dpn] The NRD-525 has a squelch, a variable beat-frequency oscillator (BFO) (in the CW "mode" only), noise blanker, variable scan and sweep controls, clock/timer (two clocks), receiver incremental tuning (RIT) and an attractive display.

For the first couple of days, I compared the NRD-525 with the ICOM IC-R71A just to see which was more sensitive and which sounded better. The NRD-525 is equal in sensitivity to the IC-R71A when the ICOM's preamp is engaged. When the ICOM's preamp is off, the NRD-525 is more sensitive. However, the big plus for the NRD-525 is the clarity of its sound compared with what I had been used to with the IC-R71A. Stop me if I'm wrong, you ICOM owners, but doesn't the sound from the ICOM seem like a man talking with his hands cupped over his nose and mouth? It sure does! But with the NRD-525, the improvement in audio as compared with the ICOM is considerable. The sound of the NRD-525 is crisp and clear.

Getting back to the sensitivity, which is a big concern of mine, the NRD-525 has a unique function that allows the input RF filters to be bypassed. This allows the user to increase weaker signals even more than was possible before. Naturally, bypassing the RF filters in this way allows more unwanted RF into the receiver, but the effects of this really aren't that bad in most cases. The increase in sensitivity seems to be from 3 to 5 dB on the "S" meter. This function is a pleasant surprise, since I had not seen it mentioned in any of the writeups on the receiver. [dpn: Universal Shortwave's catalog mentions it. I doubt that JRC's intention was

# THE JRC NRD-525 RECEIVER

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that of allowing an increase in sensitivity through the use of the "filter bypass" function. My hunch is that filter bypass may come into "official" play with the addition of JRC's VHF/UHF converter. The '525 is already sensitive enough with the filters "in line"; more sensitivity merely means lower dynamic range and higher S-meter readings.]

The "S" meter is digital, and I find it difficult to get used to simply because it bounces around at a rate considerably more rapid than an electromechanical meter. In addition, the meter on the NRD-525 will not begin showing signal strength until the tuning dial is stationary. It seems to lock up at the reading indicated at the moment the user begins tuning. As has been stated so often, "S" meter readings are only relative anyway. True signal strength can only be had when the AGC is off with the NRD-525, and then the "S" meter doesn't work anyway. ["True" signal strength is measured by radio engineers in terms of how many microvolts of radio energy are induced in a wire of a standard length -- usually one meter. Then, field strength is quantified in terms of "microvolts per meter." When radio engineers calculate the antenna gain and transmitter power necessary to put a signal of desired strength into a target area, they must also specify the distance from the transmitter at which their desired "microvolts per meter" field strength is to be achieved -- because the further you move from the transmitter, the weaker the field strength becomes. So, there is no such thing as a "true" signal strength, but signal strength may accurately be measured and specified in the arbitrary (but standard) units of microvolts per meter of antenna wire. I hope that more EReaders may now understand why the "S" meter on a receiver is only of value in ascertaining relative signal strengths among various adjacent signals, and peaks and dips on a given tuned-in signal. It is possible to calibrate a receiver's "S"-meter in terms of "microvolts for S9" at its antenna terminals -- or in similar terms -- but this has to do more with quantifying receiver performance than signal strength. (Higher-gain antennas will increase signal at the input of the receiver, thus increasing that receiver's "S"-meter reading for that signal -- even though the signal itself has not increased in field strength at the antenna location.) Signal field strength

is independent of receiver sensitivity or S-meter calibration, since it is a measure of the very real phenomenon of energy induced in a wire at a specified distance from the transmitter by a radio signal - dpn]

At the first opportunity I had, I opened the receiver to check out the 455-kHz IF filters. The stock NRD-525 comes with two filters, 6 kHz and 2.3 kHz in width [at -6dB, I take it - dpn]. Both filters may be used in all "modes." The 2.3-kHz filter used in the '525 is not familiar to me, and, as far as I know, it could be one specifically made for JRC's receivers. However, I had seen the 6-kHz filter before. It is the same brand that was in my Yaesu FR6-7000 receiver a few years ago. This filter was mediocre then and it is mediocre now. It is the "wide" option in the NRD-525 filter system; the 2.3-kHz filter is the "intermediate" option. Two additional filters may be installed to take advantage of the "narrow" and "auxiliary" options. If no filter is installed in the "auxiliary" position, selection of "auxiliary" results in a bandwidth of 12 kHz -- not too useful. I understand that there are filters available that can be installed on the IF board and fit perfectly. If you are not too particular about the closeness of the fit, and you have another 455-kHz filter available -- such as the ICOM FL44 -- you can install it in the NRD-525 using miniature coaxial cable. I have done this with a 4-kHz [ceramic?] filter and a 2.1-kHz crystal filter, and have found the results to be perfect.

The tuning function of the NRD-525 is not the ultimate in design or convenience. The receiver has one large tuning knob for tuning in 10-Hz steps. If you want to tune up or down the band more rapidly, the '525 sports "up" and "down" switches which, when depressed, tune up or down the band in 1-kHz steps. These are faster than the tuning dial, but still not as fast as the tuning system used in ICOM receivers.

Changing bands is another unsatisfactory experience in tuning. I prefer the methods available with the ICOM IC-R71A (keypad and the press-a-button/tuning-knob combination). There is only one way to change bands on the NRD-525: You punch in the MHz band you wish on the keypad and hit the "MHz" button. This is very quick, but not as traditionally satisfying as when the bands are changed with a dial.

A peculiarity that bothered me in most of the receivers I have owned was the necessity of retuning the receiver every time I switched from LSB to USB or AM. I suppose that this was intended to be a helpful feature for radio amateurs, but how many times must one switch from LSB to USB when listening on the amateur bands? I have never had to change from one to the other. The NRD-525 doesn't need to be retuned after changing modes; it stays tuned to the same frequency. Look! I'm listening to a station on 6010 kHz in LSB, but there's an interfering heterodyne. Maybe, I think, the heterodyne will disappear if I switch to USB. I do this, and surprise -- there's no need to retune the receiver because I am still on 6010 kHz, now receiving USB. In my opinion, JRC designed this receiver with the shortwave listener and DX in mind, and not the amateur radio community. I appreciate it.

I suppose that there are many more features of the NRD-525 that I have yet to discover. Those I've written about are the obvious. I feel good about getting this receiver. In comparing it to ICOMs and Yaesu's, I prefer to call it a "smart" receiver. I feel that JRC has taken advantage of microprocessor technology to a greater degree than offered by other receiver manufacturers. I do not recommend that fellow radio enthusiasts run out and purchase an NRD-525 if the price of \$995.00 will cause undue financial strain. But if you have an extra thousand hidden away, by all means get one.