A Contester's View of the IC-756PROII

George Wagner, K5KG
K5KG@arrl.net

This article was inspired by the many inquiries I have been receiving concerning how I like my ICOM IC-756PROII, as well as the excellent *QST* "Product Review" written by Rick Lindquist, N1RL, that appeared in the February 2002 issue of that magazine.

In a nutshell, I think this radio is fantastic. In a contest, it is all I would ever want, and is certainly on a par operationally with—and functionally superior to—my previous rig, an IC-781.

I had to replace my IC-781 and IC-4KL amp. This beautiful combination was dispatched to radio Valhalla by a vicious lightning bolt that hit nearby. I replaced them with the IC-756PROII/IC-PW1 combination (see the February 2001 issue of *QST* for their review of the amplifier).

I have used the IC-756PROII and the 'PW1 in three contests thus far: the CQWW CW, the ARRL 10-Meter and NAQP CW. They performed nearly faultlessly (See "IC-PW1 Operation" section below). I use *WriteLog*, and radio control from the software was not a problem once I set the radio's CI-V address correctly (again, see below).

The receiver's sensitivity and selectivity are excellent. I was always very impressed with the performance of the IC-781's receiver, and the receiver in the '756PROII is no less to my ears and taste. I do not experience any filter blow-by, AGC pumping nor the low frequency rumble that was a complaint with the previous version of the radio. With careful tuning and the use of the DSP filters, I find that I can peel out weak signals under very crowded band conditions.

I have a terrible line noise problem in my neighborhood that comes and goes. When the noise is present, the 'PROII's noise reduction system reduces the noise without degrading signals, and this allows me to pull through stations that I could not hear otherwise. The noise reduction and the noise blanker are separate systems. The noise blanker is intended for pulse type noise. Noise reduction is a feature that I have not had in previous receivers. I seldom use the noise blanker on the line noise, as it has little influence. The noise blanker would likely be effective on ignition noise in mobile applications.

I find the ability to adjust the bandwidth and shape of the DSP filters to be an exceptionally nice feature. There are three filter "memories" available, and once I get them set up for the conditions of a contest, I rarely find it necessary to vary them. A quick push of the **FILTER**
button then switches from one to the others. A filter shape mode of "sharp" or "soft" is available independently for SSB and CW. I set mine to sharp for SSB and soft for CW.

There are two preamps. Preamp 1 is 10 dB and works on all of the HF bands. Preamp 2 is 16 dB, and is available only above 24 MHz. On 10 and 15 meters, I typically engage preamp 1. I rarely use preamp 1 below 15 meters, and almost never use preamp 2. I just don't need the added gain. I have not yet used the radio on 6 meters, so I can't comment on the effectiveness of the preamps on that band.

Buttons

Most of the front panel buttons respond to two types of presses: momentary and delayed. A momentary press selects the function. A longer press sets some characteristic about the function. Successive momentary presses of the **METER** button, for example, switch the metering from power output to SWR to ALC to compression—as you might expect. A longer push—of about a half-second—turns the LCD depiction of the meter on and off. When the meter display is off, a "Spectrum Scope" appears. I generally operate with the scope on as this provides a view of signals on the band 12.5, 25, 50 or 100 kHz above and below the operating frequency.

There are triple band-stacking registers for each band. Pushing the **28** band button on the number pad three times will bring up three different 28 MHz frequencies, each with its own set of filter and mode conditions. So with this, you could set up the three registers for the start of the 10-meter contest as:

28.025.00	CW	400-Hz filter
28.350.00	USB	1.8-kHz filter
28.680.00	USB	2.1-kHz filter

Another nice feature is the ability to adjust the AGC settings. Momentarily pushing the AGC button switches the AGC among three levels: "FAST," "MID" and "SLOW;" or "OFF," "MID" and "SLOW." A delayed push of button brings up a table where you can set up the three AGC delay times from 0.0 seconds to 6.0 seconds. (If you want an "AGC off" selection, you simply choose 0.0 seconds.)

This is a minor criticism, but the labeling of the back panel connectors is done by way of a diagram of the back panel on a small, hard-to-read label (so keep a flashlight handy). I have labeled the back panel connectors directly with my good old Dymo Labelmaker.

Another minor gripe is the small size of most of the knobs—I just don't need a small, compact radio on my large desktop. I liked the spacious layout of the '781 and a previous FT-1000D, and wish that the '756PROII were as large (but I'm glad that it is not as expensive!). The **AF/RF** knob is adjacent to the mike/key/phones plugs, and these get in the way of my bumbling fingers. This is especially true when I'm adjusting the **RF** knob. This complaint applies to most of the knobs and buttons on the radio, with the exception of the main tuning knob, which is large enough to suit my tastes.

The **RF** control doubles as a squelch control. Make sure that the squelch function is turned off (a menu selection), or else you wouldn't hear any audio below the threshold level of the squelch. The factory default "dual" assignment—where this knob works as a combination RF gain and squelch control—led to some initial confusion.

Antennas

There are two SO-239 connectors for connecting antennas. There is also an external receive antenna jack that accepts a phono (RCA) plug. It took a call to ICOM to find out how to activate the receive antenna jack—it requires a delayed push of the **ANT** button. (Yes, this is in the manual, but I missed it!)

Unfortunately, there is no receive antenna loopback jack—such as there is in the IC-781—so there's no easy way to insert a receive limit filter in the receive antenna line that I might need for Beverage antennas. I discussed this with Chas, K3WW, and he actually made an internal mod in his '756PROII and brought out an external jack using RG-174 coax for this purpose (see the sidebar). I discussed this deficiency with ICOM Tech Support, but they could offer no explanation as to why the receive antenna loopback was not included on this model. I consider this a design oversight. It's an important feature to me!

LCD Display

The TFT display is magnificent. It is clear, colorful and easy to understand. My XYL refers to it as a fish finder! One neat feature is the ability to select one of seven different fonts for the display. You can also control the contrast and brightness of the display and something called "horizon"—which is kind of a focus adjustment.

You can also select a "Display Type." This is along the same lines as "wallpaper" on a *Windows* desktop. There's even a clouds-on-a-blue-sky selection, but I prefer the solid blue background and the conservative "Pop" character font.

While we are on esoteric features (which is something that I consider the selectable wallpaper to be), there is even a radio on-off timer. This is obviously a convenience feature provided for the XYL—to ensure you QRT just as soon as the contest is over!

Split Operation and Tuning

Split operation is set up nicely. A delayed push of the transceiver's **CHANGE** button puts the primary VFO's frequency into the secondary VFO. A momentary push of the **CHANGE** button reverses the two VFOs. I somehow find this more convenient than pushing an "A=B" button. I also find the placement of the **SPLIT** button—at the top of the row of buttons—more convenient than where

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it's located on the '781. **XFC** and **DUAL WATCH** functions are identical to those on the '781.

TS is used for fast tuning, and works as it should. There is a ¼ tuning rate button for CW and RTTY that provides a tuning rate of 1.25 kHz per dia revolution. One dial revolution on SSB covers 5 kHz.

CW

You can set up to operate CW on either the normal or reverse side of the carrier frequency. This feature is for those who choose to operate on the wrong side!

ICOM has continued their tradition of having the front panel key jack go through the internal keyer, and the back panel key jack bypass the internal keyer. This is important when you want to key the radio with an external keying device, such as a logging program, and simultaneously have a paddle connected for using the internal keyer.

SSB

On the SSB side of life, you have the ability to set transmit audio bandwidth to "NAR," "MID" or "WIDE" (2.0, 2.6 or 2.9 kHz).

Through on-the-air comparisons of these settings, I find that the 2.0 kHz setting provides more punch at the expense of fidelity, and is probably the setting to use in a phone contest. Overall, I have received excellent audio reports when using any of the three settings.

DVK Memory Recording

There are four message memories available in the radio for recording voice messages and four for CW.

You record the voice messages by

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using microphone input. Examples:
T1: "CQ Contest this is K Five Kilowatt Germany"
T2: "59 Florida"
T3: "QSL QRZ Contest K Five Kilowatt Germany"
T4: "K Five Kilowatt Germany"
Once you've recorded them, you simply press the **T1** through **T4** buttons to play them over the air.

For the four CW message memories, you have to use the radio's main dial to select—one by one—the characters to be stored, such as "CQ TEST K5KG." This is a bit tedious—but tolerable—as the message contents will probably be changed infrequently.

To play the CW messages over the air, you press the **M1** through **M4** buttons. The speed of the CW is controlled by the radio's **KEY SPEED** knob, the same knob that controls the speed of the internal keyer.

Now here is a nice thing: You can build an external control box to trigger the SSB and CW messages. I bought a small plastic box, four pushbutton switches and the required resistors at my local RadioShack store. I had the control built and working in less than an hour. The box connects to two pins in the mike connector through a short length of shielded cable. (Yeah, perhaps ICOM should supply a box like this with the radio, or at least offer it as an optional accessory—but heck, there's nothing wrong with a little homebrewing!)

A quick hit of one of the control's pushbuttons will trigger playback of the corresponding message. Another quick hit of the pushbutton while the message is playing will stop it. On CW, a tap of the paddle will also stop the message. These external pushbuttons do not affect the normal operation of the microphone and VOX on SSB, nor the paddle and internal keyer on CW.

Note: These messages cannot be triggered through the computer interface and, therefore, you cannot use the computer's function keys (F1 through F9) to activate them. You can, of course, still take advantage of any voice or CW keying features available within your contesting software, though.

There are four memory channels available for recording received audio. There is even a convenient **REC/PLAY** button to the lower left of the main dial to record and playback received audio. The audio can be played back on the speaker or headphones, but not over the air.

IC-PW1 Amplifier Operation

As mentioned earlier, I use the trans-ceiver in conjunction with ICOM's IC-PW1 amp. A few comments are warranted.

The 'PW1 is a 1 kW auto-tuned, solid-state amp that runs cool hour after hour, and produces 900 to 1100 W out depending on the band. Fan noise is a bit noticeable, so remotely locating the amp some-

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where away from the operating position is desirable. The control head can be removed from the main unit and has an eight-foot cord. The process of removing the control head is a bit tedious, but with care and patience—and a small flashlight—it was relatively easily accomplished.

The amp will operate on 110 or 220 V ac, but 220 V ac is desirable. There is no primary voltage selection necessary on the unit. (I was expecting to have to change a 110/220 V switch or a set of jumpers, but this was not the case.)

When you first connect it up and switch it on, you have to go through a procedure—outlined in the manual—that synchronizes the transceiver and the amp. It is critical that this be done. I had an on-the-air discussion with a good old boy on 75 meters who had a similar setup but refused to read the manual and perform the synch procedure. He was having problems, but could not be convinced to read the book. The message here is that this equipment is extremely complex, and studying the manuals from cover to cover is necessary to understand all of the many features and functions.

I initially had a problem with *WriteLog* not being able to control the '756PROII. There is a "CI-V address" in the transceiver that is used to distinguish one type of ICOM equipment from another. *Writelog* detects this code and uses it to recognize the particular transceiver. However, the default address in the IC-756PROII is different than the address needed by *Writelog*. The CI-V address in the radio

must be changed from "64h" to "5Ch"; the manual explains the procedure for doing this. In my current version of *Writelog* (10.27G) there is no specific radio selection for the IC-756PROII in the "Setup Ports" menu, so I selected IC-756. Hopefully, future releases of the software will include a choice for the IC-756PROII with its factory-default CI-V address.

If you change the radio's CI-V address *after* you have synched it to the 'PW1, you must re-sync the radio to the amp. The radio and the amp must see the same CI-V address to be in synch.

At times I have a problem with the amp band switching 10 to 15 seconds after the transceiver is band switched. Rebooting the transceiver cures the problem, but this is hardly satisfactory. Band switching via *Writelog* does not result in the delay.

The amp tunes automatically. When using the amp, the transceiver's internal automatic antenna tuner must be turned off else the radio's tuner may "fight" the amp.

I have an occasional problem with the amp losing its tuning. I will be working away in a contest, and all of a sudden I have no RF output after a QSY. If I keep keying or speaking, the tuner will retune to maximum power in a few seconds. Occasionally I have to hit the **RTTY** and **TRANSMIT** buttons to generate a carrier so that the tuner can tune. All of my antennas have less than 2:1 VSWR, so non-resonant antennas is not the cause. As of this writing, I have not figured out why this happens. (I wish the radio had a dedicated **TUNE** button, but it doesn't.)

Power Supply

I bought the IC-PS125 12 V dc switching supply for the relatively high price of $300. It worked just fine as a power supply. However, its small fan had an annoying high-pitched whine, and the dc cable was so short that I couldn't locate the power supply away from the radio. I returned the power supply for a refund and used the dc cable supplied with the radio to connect it to my shack's Astron supply.

About the Author

K5KG

*George Wagner, K5KG, has been a ham since 1957. He lives in Siesta Key, Florida and is an active member of the Florida Contest Group. George began contesting from ET3USA in the 60's where he was a field engineer for Collins Radio. Later he worked for Exxon and operated from several foreign locations—KL7IDH, K5KG/VS6, K5KG/OHØ, K5KG/OHØ/OJØ, JY8GW, HZ1AB and K5KG/LU. His last job before starting a management consulting business (Productivity Resources LLC) with Tom Taormina, K5RC, was with Merrill Lynch in New York City. From 1988 to 2000 he lived in Morristown, NJ and was an active member of the Frankford Radio Club. George's current contesting is done from both Siesta Key and Dominica, where he operates as J75KG. George can be reached at **K5KG@arrl.net**.* ∎