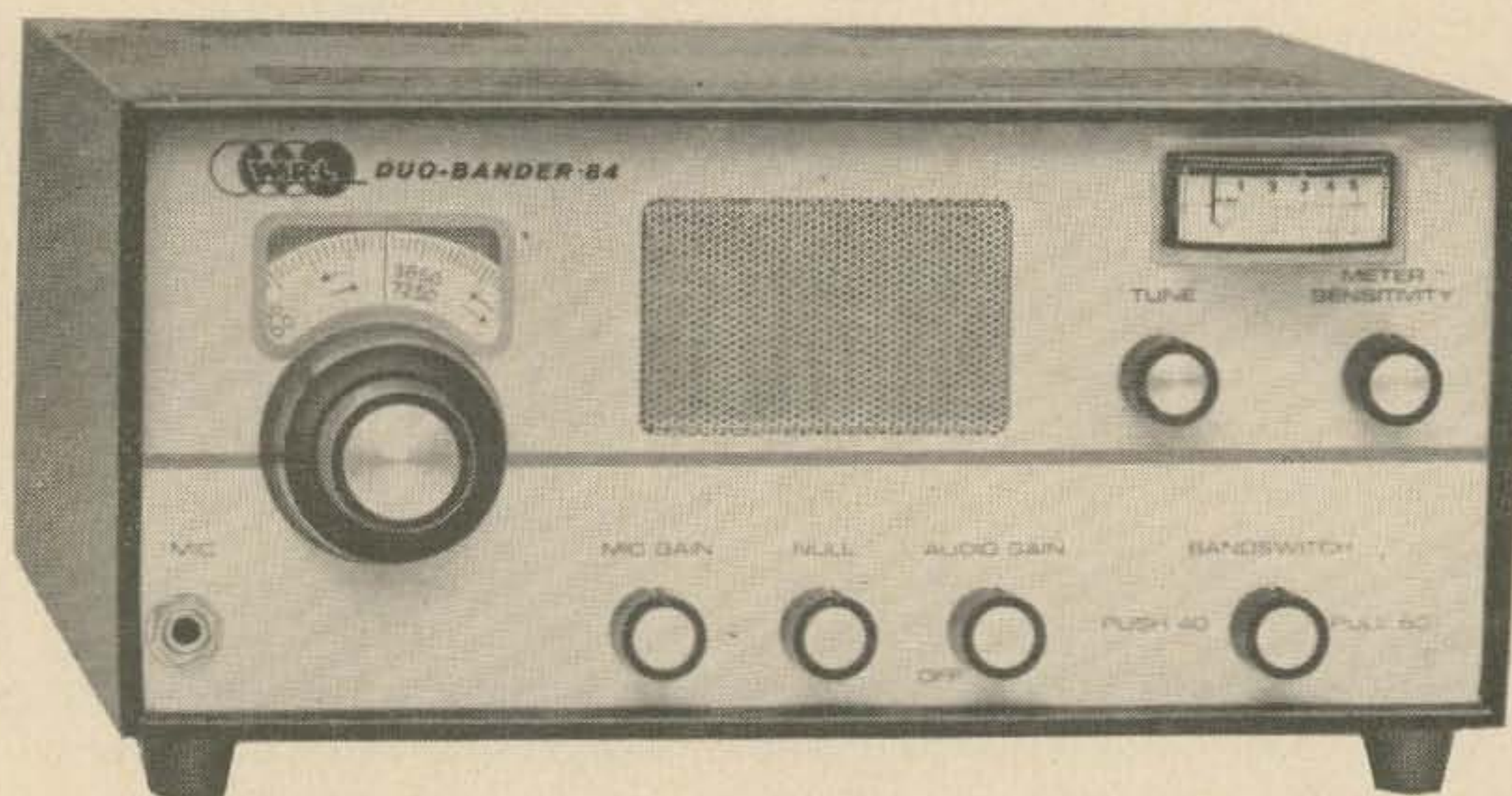


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WRL Duo-Bander 84

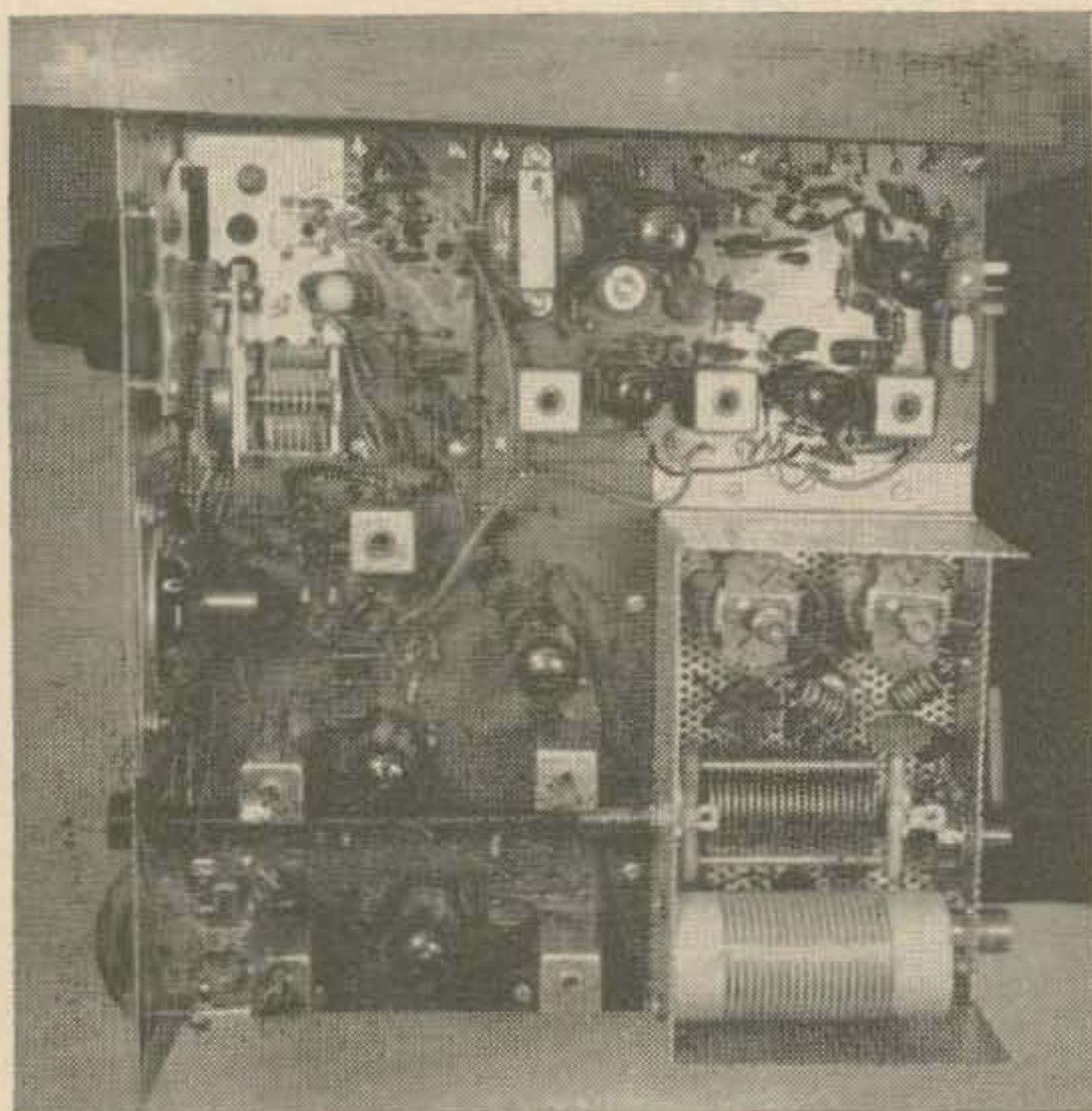
For a long time I have been spoiled by using a transceiver in the car and the boat, to the point where the transceiver was always being taken into the house. The separate transmitter and receiver were such that it was impossible to make into a transceiver combination. When World Radio Labs announced the

Duobander 84 at its low price this seemed to be an ideal way to eliminate taking the rig out of the car and hauling it into the house or, if it was on the boat, hauling the set and the AC power supply from the boat to the car and then into the house.

The specs in the ad seemed too good to believe for the money (only \$159.95), but one was ordered. It is sometimes more fun to order and wait, than to buy off the shelf. This way you get double pleasure; first, the placing of the order, then the anticipation while waiting for it to arrive.

As soon as it arrived it had to be put on the air and, in spite of a large card on top of the set saying "please read the instructions before you send it up in smoke," I had to hook it up and see how the receiver worked. 80 meters was tried first, and the velvet-smooth dial and the wide 2 kHz divisions were a real pleasure to use.

The urge to transmit was great, but I decided at this point that I was not as smart as the book—so the instructions were followed, and it was on the air in a few minutes. The tuneup was the ultimate of simplicity: Adjust the bias; tune; null the carrier and set the mic gain (with the aid of the large edge reading meter); then go. The 300 watts PEP sure



looked big on the monitor scope and from the reports it looked big on the other fellow's S-meter.

The next step was to start studying the instruction book to see where all this signal was coming from and how it was being produced. At the same time the top and bottom of the set were removed for a good look inside. The first impression was that here was a very nice piece of workmanship, a layout that would be easy to service, and that all the parts were first line quality merchandise; no skimping here.

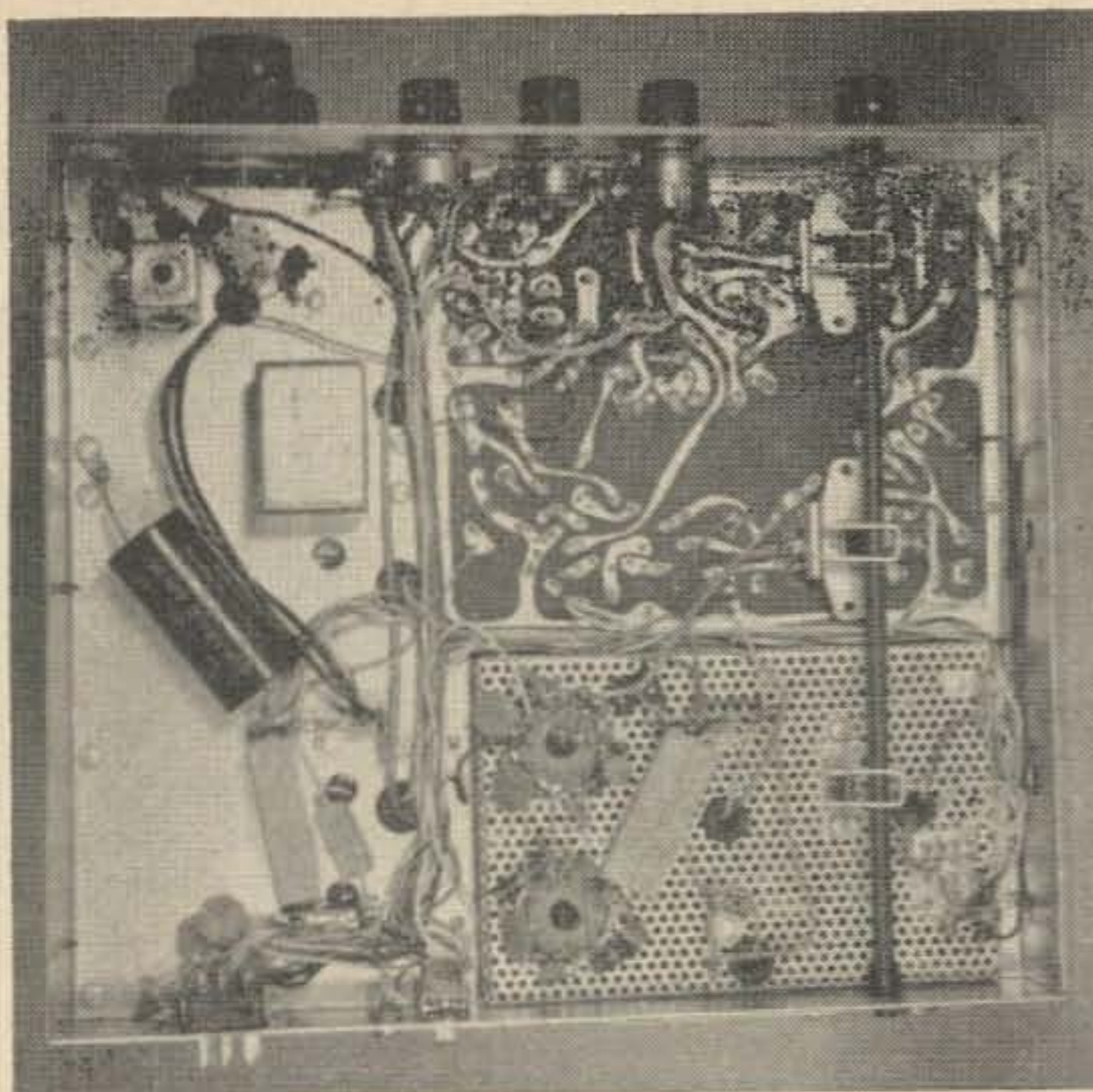
The study of the instruction manual revealed that there were seven transistors, nine tubes and four diodes. An interesting thing here is that two of the diodes are actually transistors and are being used just like K9VXL says to do in the July 1966 issue of 73 Magazine. All of the transistors are the same type, so if you like to have spares you only need one.

As is standard with any sideband equipment, this transceiver is of the mixing type. The choice of frequencies is a good one. First the turnable oscillator is quite low (1.55 MHz to 1.75 MHz) which, with the use of transistors, makes a very stable oscillator. Now since this is a set that works on 75 and 40 meters, it can quickly be seen that the right choice of *if* frequency would allow the oscillator frequency to be added to get on 40 meters and subtracted on 75 meters. The *if* frequency is 5.5 MHz. The use of a McCoy 4 crystal lattice filter gives the desired selectivity and unwanted sideband rejection.

A very clever band switching arrangement has been worked out using slide switches. A bar with fingers moves the three slide switches from 75 to 40 meters. This method of switching allows very short leads, and then there is a space savings.

Since this transceiver only tunes 200 kHz, the band pass tuning coils are slightly broadbanded so that they do not need to be tuned when going from one end of the band to the other. The coils are shunted with resistors and a portion of the coil is shorted out when going to 40 meters. Each stage has two coils so that the band pass can be fairly wide with steep enough sides to eliminate harmonics and spurious radiation.

One thing that impressed me was the fact that the parts list showed prices. This in itself is not so special, but here all the prices are shown even for special items—and the prices are net and not inflated prices. These prices are the same that you would pay in any radio store. And the prices of the special items like



The final amplifier uses a pair of 6HF5's. These tubes have a very high plate dissipation to start with, and Sylvania tells us that in amateur service they can be up-graded 30% to a total of 36 watts. These tubes also have the advantage that they will handle a fantastic amount of current because of the design of the plates. If you check the tube manual you will find that these tubes will handle 900 volts at an average cathode current of 315 mA which comes out over 280 watts each, so they just loaf along with only 300 watts PEP on two of them.

To really find out what this new transceiver was doing, Ray Abair K8NBQ and I took it over to Rowe Industries to check it out with all the nice test gear that they have. Here is what we found, using a single tone signal at 2000 Hz:

Transmitter:

Power output	160 watts PEP
Carrier suppression	43 dB below peak output
Unwanted sideband	41 dB below peak output
spurious output	
(2 tone sig.)	29 dB below peak output
Oscillator drift	Negligible

Receiver:

Sensitivity	0.45 μ V for 10 dB S/N
Selectivity	2.7 kHz at 6 dB down
	6 kHz at 60 dB down

Image & *if* rejection: 43 dB

The picture shows the small size of this transceiver which should make it a swell rig for mobile work. The small size will allow it to fit into the car in several ways. Dollar for dollar, you will have to look a long way to find so much transceiver for under \$160; and it comes ready to operate. Just a little over 50¢ a watt.

... W8QUR