

by Bruce Portzer

The Hammarlund HQ-180() series of receivers was designed in the early 1960's and manufactured until around 1970. The receiver has dual conversion below 7850 kHz with one IF amplifier at 455 kHz and three IF amplifiers at 60 kHz. Above 7850 kHz, the receiver has an additional IF stage at 3035 kHz. The receiver tunes from 0.54 to 30.0 MHz.

There are several variations of the HQ-180. The HQ-180A is a later refinement of the HQ-180. The main differences are that the HQ-180A has a silicon rectifier power supply instead of a 5U4 rectifier tube; it has a rear panel accessory socket not on the HQ-180; and it supplies power to the filaments of the oscillator tubes at all times, thus reducing warm-up drift. The HQ-180C and HQ-180AC have clock timers built in, and the HQ-180X and HQ180AX have provisions for 11 fixed-frequency crystal controlled channels.

When it was introduced, the HQ-180 was considered to be "the" receiver for hams and SWLs. While hams have since moved on to transceivers, rather than separate transmitters and receivers, and SWLs have fallen in love with Wadley-loop receivers with superior readout, the HQ-180 continues to be one of the most popular receivers for "hard-core" BCB DX'ing.

The receiver itself measures 10 1/2 x 19 x 13 inches and weighs 38 pounds. The front panel controls include main tuning knob, bandspread knob (not used below 2 MHz), notch filter control (±5 kHz), BFO tuning control, vernier tuning knob (±3 kHz), noise limiter controls, RF gain - on/off control, AVC switch (off, slow, medium, fast), selectivity (0.5, 1, 2, and 3 kHz per sideband), send-receive-calibrate switch, upper-lower-both sidebands control, phone jack, S-meter, audio gain control, band switch, antenna tuner, and AM-SSB-CW switch. The rear panel has speaker and antenna terminals.

The following comments are based on six years of ownership by this reviewer:

Sensitivity is excellent. The receiver manual lists sensitivity as 1.5 uV for a 10 dB signal to noise ratio. In most urban areas, this is more sensitivity than you will ever need. Chances are that electrical noise on the AM broadcast band will prevent you from taking full advantage of the receiver's sensitivity. However, in very quiet locations, the HQ-180 will likely be superior in sensitivity to most other receivers.

Selectivity is likewise excellent. The receiver uses several tuned circuits at a low IF frequency (60 kHz) to provide a narrow, steep-skirted bandwidth. The variable bandwidth permits the user to narrow the bandwidth in the presence of strong adjacent signals. The sideband switch is useful when copying signals next to strong locals. By selecting the sideband farthest in frequency from the local, the user can eliminate much sideband splatter. By using the combination of 2 kHz bandwidth, the notch filter and upper or lower sideband, this reviewer has pulled audio from many Asian and down under signals 2 kHz from domestics. An example is hearing Tahiti-738 next to strong, unnullable signals from CBX and KCBS on 740.

Overload immunity is not quite what this reviewer would prefer. However, it is acceptable. Some spurious signals from strong locals are noted when a longwire is used, but the problem is not as severe as that encountered on most other receivers I've used. Two overload problems have been encountered with this reviewer's HQ-180A, even when a loop antenna is used. One is a tendency to overload between 1000 and 1050 kHz due to the presence of very strong locals on 1000 and 950. The other is that a strong signal, especially an open carrier, can sometimes mix with adjacent channels, causing audio from the adjacent station to appear on the other side of the signal. For example, KDIH-720 occasionally shows up on 700 when local KIRO-710 is on the air, and audio on 960 shows up on 940 (and vice versa) when KJR-950 tests with an open carrier. The most bizarre instance of this problem occurred when Aruba's Radio Kelkboom on 1435 showed up on both 1425 and 1435 due (apparently) to an open carrier from KJAY, Sacramento, on 1430. I'm not sure if this problem exists on other HQ-180's but it has shown up several times on mine and tube replacement and realignment do not seem to cure the problem.

Audio quality leaves a little to be desired. On all selectivity settings except 3 kHz, higher audio frequencies are attenuated enough to produce rather muffled audio. Some 60 Hz line noise is also present in the audio output. The notch filter is very effective and is a real "plus" for this receiver. The same cannot be said for the noise limiter, which is not very effective (but then very few of them are). The vernier tuning is very useful in establishing the frequency of "splitters" to the nearest 1/2 kHz.

Dial readout is acceptable on medium wave. Component aging has resulted in this reviewer's HQ-180 readout to always be a

few kHz off at some spot on the dial. It's the age-old story of receiver calibration--if you align the receiver to where it's accurate at one end of the dial, it's way off at the other end, so you're forced to compromise. Dial readout on shortwave is, of course, as good as can be expected for pre-1970's technology, which utilized "slide rule" readout.

In conclusion, the HQ-180 is a good buy on today's market. These receivers typically sell for \$200 to \$300, depending on age and condition. They outperform any new receiver in that price range, even though they lack the portability and other niceties of modern solid-state rigs. Few receivers will serve the serious BCB DX enthusiast better than the HQ-180.

The Hammarlund SP-600

by Phil Bytheway

The SP-600 is no portable; it is 95 pounds of general coverage receiver which tunes 540 kHz to 54 MHz. The broadcast band is spread over two bands and breaks at 1350 kHz; you have to crank it all the way back to "0" to get 1350+. It has a sliderule-like dial which delineates the various bands on a rotating disc. Another rotating disc is a bandspread control with a very handy log scaling (0-100, marked every .5), which can allow you to return exactly to any station (once found) without any hunting around. Nine log divisions are marked on the main tuning dial for use with the bandspread dial. On the broadcast band, the main dial gives 10 kHz accuracy; with the calibrated BFO pitch knob (±3 kHz linear), you can eyeball to the nearest .1 kHz using a domestic channel as a reference, as the BFO pitch control dial is laid out so that 1 kHz covers over 1/4 inch. The main tuning dial has counter balance weighting that allows you to spin the dial quite quickly; jumping from channel to channel is quite easy, even across bands.

Sensitivity is rated at 2 uV on BCB which is somewhat better than the R-392 rating, but I feel that the R-392 does better on BCB. Selectivity is variable: 13, 8 and 3 kHz bandwidths are available without the crystal filter. With the crystal filter, bandwidths are 1.3, 0.5, and 0.2 kHz. The filter also has notch capabilities and a phasing control zeroes the notch in. I usually DXed using the 3 kHz position, as the 1.3 kHz was too narrow for my tastes in audio response; splits are readable with the 3 kHz bandwidth. There seems to be quite a bit of loss associated with the crystal filter; perhaps mine was not aligned perfectly.

There is a weak birdie on 910 kHz, but mixing spurs from locals are evident across the BCB. Using a loop antenna only alleviates the problem if you null the offending station. The preselection provided by the loop's tuning doesn't seem to help. The two RF stages are perhaps more a problem than a blessing in the SP-600.

The receiver manual claims great stability for this set after 15 minutes of warm-up, and I can't really argue as I've never noticed any stability problems. The S-meter seems very good and rarely pins on a strong signal, yet still indicates for weak ones. It can be used (by means of a switch) to show RF or AF strength, although the latter is quite useless when DX'ing. The SP-600 also has a noise limiter switch, but when it is on, it cuts down desired audio too much to be of much use.

I like the set quite well, but I couldn't get my "Wedge" loop to perform with it. The Space Magnet worked pretty well, however. There is no antenna trimmer on the SP-600, so perhaps this lack may have been partially responsible for the poor results using the Wedge. I never got a speaker for the set because it has a 600 ohm output. The scarcity of 600 ohm speakers is one of the drawbacks to buying a surplus receiver unfortunately. I use the SP-600 as a back-up set at the moment for checking TP parallels; it gets the stronger NHK stations easily enough when using a 150' longwire.

