

THE COMMUNICATION RECEIVER

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SKYRIDER 23: A DIFFERENT DESIGN FROM HALLICRAFTERS

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From the viewpoint of the typical collector of communication receivers of the 1930s, the Hallicrafters SX-23 is in a class with their very first designs and the famed dual-diversity receiver: most collectors have yet to see one, much less put it on the shelf. Author Rosine, one of the few owners, examines this low-production and unusual product of "Halligan's crafters." -Bill Fizette

In February of 1939 Hallicrafters introduced a receiver that was such a departure from their old silver-dial, black-panel sets that it seemed the company was going to alter completely its image as a maker of low-priced communications equipment. The SX-23 "Skyrider 23" differed in so many respects from previous offerings that those who opened the top must have been startled by its appearance.

While National and Hammarlund had been making the most important components for use in their receivers, Hallicrafters purchased fairly standard parts for its sets, and thus was able to minimize manufacturing costs. In many respects the SX-23 indicated an intent to compete head-on with rivals in the receiver field. The IF coils, transformers, and filter choke in the 23 were mounted in cases with the big "h" embossed into the metal, providing eye appeal. The chassis, painted a dark glossy gray, was heavy steel with reinforcing bends on the ends for rigidity. Vent grilles of high-tech appearance coordinated with the front of the matching speaker.

Hallicrafters' promotion claimed the circuit of the 23 was different, supposedly developed some years before by two of their engineers, who built this "ideal" receiver as a private pet project of their own. It is suggested that the lack of certain

components, presumably the negative temperature coefficient capacitors in the tuned circuits, prevented production at an earlier date.

The SX-23 did look different. A "Venetian blind" style of metal dial reportedly gave better readability than offered by conventional designs. "Unique" amateur bandspread was touted as the ultimate for the ham. The frequency stability was certainly an improvement over previous models. However, there were some major design deficiencies in the set that must have made it less of a success than the firm planned.

The SX-23 employed only four sets of coils, broadcast through 34 MHz. It used a large three-gang 437-pF variable capacitor which provided bothersome "fast" tuning on the upper bands, 5.2-16 and 10-34 MHz. To spread the 80-, 40-, 20-, and 10-meter amateur bands, this broadcast-type variable was connected by the bandswitch to fixed series and parallel capacitors. This arrangement required so many switched capacitors that a separate page in the service manual is used just to illustrate these circuits. The fixed capacitors in these circuits were nominally 59.7, 104.4, 571, and 943 pF respectively for the 10- through 80-meter parallel units, and 51.4, 38.0, 313.6, and 995 pF for the series ones. With the technology available to capacitor makers in 1939, these had to be difficult to produce.

A major shortcoming of this set was its amateur bandspread readout: a 0-100 linear scale for all four bands. Each SX-23 manual contained a

bandspread calibration chart matched to the serial number of the receiver it accompanied.

The much-touted Venetian blind dial was a clever departure from the older Hallicrafters silver dials but



offered little for the user. The stylized physical design integrated the S-meter and band indicator into the dial but the meter and indicator were difficult to read. There was no bandspread for commercial frequencies.

On the positive side, the 23 has greater frequency stability than most other sets in the old "h" line. The rigid construction and temperature-compensating capacitors are partially responsible for the stability. The SX-23 I obtained still covered the amateur bands on the bandspread positions, although the tracking had deteriorated somewhat over 50 years. The set is still sensitive and the crystal circuit, which was later incorporated in the SX-24, SX-25, and other receivers, is acceptable.

The tube lineup is fairly standard for an upper-line set of the period: single 6SK7 RF stage, 6SA7 mixer with separate 6SJ7 oscillator, two 6SK7 IFs at 455 kHz, 6SQ7 detector-audio, and 6F6 output. Auxiliary stages are a 6SJ7 BFO,

6H6 noise limiter, 6B8 AVC amplifier-rectifier, and 80 rectifier. The separate HF oscillator is a worthwhile feature. The Dickert noise limiter, while not the best, works well.

I can only wonder how sales of this receiver fared when Hallicrafters introduced the SX-24 a few months later, with calibrated amateur bands, bandspread on all frequencies, and similar performance. Certainly the SX-24 lacked the stability and appearance of the SX-23, but at its list price of \$69.50 versus the SX-23's \$115.50, it must have been more acceptable to the frugal amateurs of 1939.

The SX-23 was a departure from other Hallicrafters designs. Its shortcomings probably overshadowed its features. Poor sales made it a rather rare receiver for today's collector. For more details on the 23, there is a most interesting *ten-page* advertising spread in QST for March 1939, and the set is covered in Rider's Vol. X.

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stations; it picked off a voltage that would cut off the first audio stage, getting an extra sales feature almost for free. However, there is no evidence that it reached manufacture.

The Tune-A-Lite had another, unexpected use. Apparently the length of the glow discharge was sensitive to small changes of voltage. According to the "Ham Shack" column in the January 1935 issue of Radio News, it made an very simple AM modulation monitor. Lighted by a small amount of RF from a transmitter, the length of the glow could be calibrated against an oscilloscope to give a direct measure of modulation percentage, at least for positive peaks.

There was a competing neon indicator. The Sears 1722 and 1732 sets, ca. 1934, used a tube of NE-16 (medium) size as a "tuning flasher." Driven by its own IF transformer and 6B7 detector-amplifier, the lamp lighted when a station was tuned in correctly.

The Duovac device was produced in Britain by Cossor as its "No. 3180 Neon Tuning Indicator" until at least 1946. Perhaps improved construction helped its operating life. A receiver construction article in the October 1946 RSGB Bulletin uses a 3180, with an enthusiastic description: "This device has been found infinitely superior to the 'magic eye' type of indicator because (a) the length of change possible is much greater (about 2 in.), and (b) the glow is many times brighter. A further consideration in this case is that it lends itself to calibration for use as an S-meter, by the simple means of sticking a paper scale along one side of the tube." A version of the tuning indicator with a four-pin base was made in France as the "Radio-technique" 4662,

by the owner of the "Dario" brand.

One of these rare indicators was sold in last year's AWA mail auction of tubes. While replacements to fit old radios are scarce, it may be possible to get an NE-16 neon lamp to change brightness when used in the old circuit; at least the NE-16 (or 991) has the right double-contact base, diameter, and color of glow. We'd be glad to pass on anyone's experience along this line. [BK-LAS; photo: Bill Johnston, N5KR, via W2GK]

MORE 201/201-A BRAND NAMES

A list of 436 brand names for 201/201-A tubes was published in the OTB, Vol. 28, No. 4 (Feb. 1988). The following names have been added since publication. The number listed after each name indicates its alphabetical placement in the original listing.

- 437 Action (4A)
- 438 Duotron (116A)
- 439 Excel (142A)
- 440 JA REG (185A)
- 441 Kleen Tone (196A)
- 442 Leradion (208A)
- 443 Maximus (225A)
- 444 Pace Setter (262A)
- 445 Peerless Radio Valve, Ltd. (Canada) (265A)
- 446 Plarite (282A)
- 447 Tectron (373A)
- 448 Troy (388A)
- 449 Vogue Nonpareil (408A)
- 450 SE-4373 (Navy; selected 01-A) (436A)
- 451 X-501-A (436B)

A sincere thanks to our many contributors. Keep 'em coming! - W2GK (425 Paramus Rd., Paramus, NJ 07652)