

## ARRL Homebrew Challenge!

One impediment for many considering amateur HF operation is the cost. While in most respects, today's equipment is a real value compared to commercial equipment of a generation ago, there is not the alternative of easily adaptable low cost military surplus gear that got many of us started with HF operation back in the '50s.

One solution is building our own gear. A challenge for a new ham is finding a design that will be easy to reproduce, work well for a new operator, be constructed from available parts with available tools and test equipment and be of reasonable cost. Thus this challenge — we would like a member to design and build a complete HF voice and CW station that can be successfully reproduced for under \$50. **The winner of this challenge will have the station described in a QST article and receive a \$100 prize, in addition to the usual payment for our articles.** The conditions are as follows:

- The station must include a transmitter and receiver that can operate on the CW and voice segments of 40 meters.
- It must meet all FCC regulations for spectral purity.

- It must have a power output of at least 5 W PEP.
- It must operate from either 120 V ac mains or a 13.8 V dc power supply.
- It can be constructed using ordinary hand tools.
- Voice modulation can be AM, SSB or DSBSC.
- Parts must be readily available either from local retailers or by mail order; no "flea market specials" will be considered.
- Any test equipment other than a multimeter must either be constructed as part of the project or purchased as part of the budget.
- Equipment need only operate on a single band, 40 meters. Multiband operation is acceptable and encouraged.
- Frequency control can be by VFO or crystal control. Some method of variable tuning is encouraged.
- The total cost of all parts, except for power supply, mic, key and headphones or speaker must be less than \$50.

Each entrant must submit a sample of the station with documentation indicating the

source and price of each part used in the construction. A draft QST article will also be provided, including a discussion of the design with schematic diagram and description of the construction, test and alignment steps. All portions of the entry must be received at ARRL Headquarters before August 1, 2007.

The station will first be evaluated by the ARRL Laboratory in a manner similar to a Product Review of HF transceivers. Entries determined to be acceptable by the Lab will be evaluated by the QST Technical Editorial Staff based on:

- On the air operability and capability.
- Ease of use by a beginner.
- Elegance and originality of design.
- Success at meeting the spirit of the above objectives.

Additional successful entries may be posted to the ARRL Web site. All winners and runners-up will be required to execute our usual author agreement providing publication rights to ARRL. Many thanks to ARRL member George Kuehn, N4AUP/9, for his suggestion. — Joel Hallas, W1ZR, QST Technical Editor