W7DET

Seattle, Washington

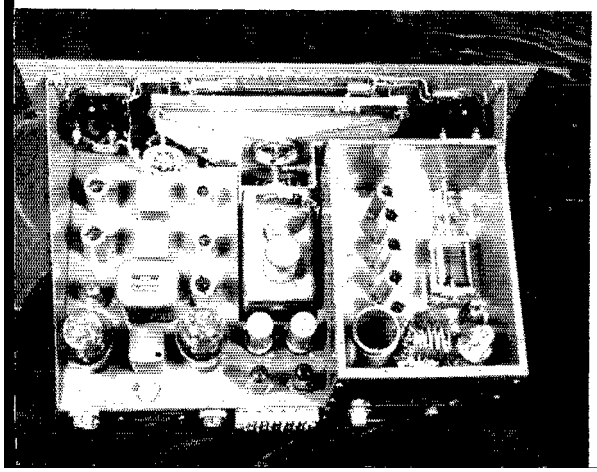
THAT W7DET has trouble convincing people this is a homebuilt station, not commercially assembled (except for the receivers), is easy to understand. W7DET reports that he was a year and a half in putting it together, doing all his own work in a very modestly-equipped basement workshop. We don't plan to go into extensive detail on the circuit details, which are more or less standard, but we do believe that there are many mechanical ideas here that some of you might find interesting enough to incorporate in your own layouts. What follows is a very brief description of the various units, and the photographs will tell the rest of the story.

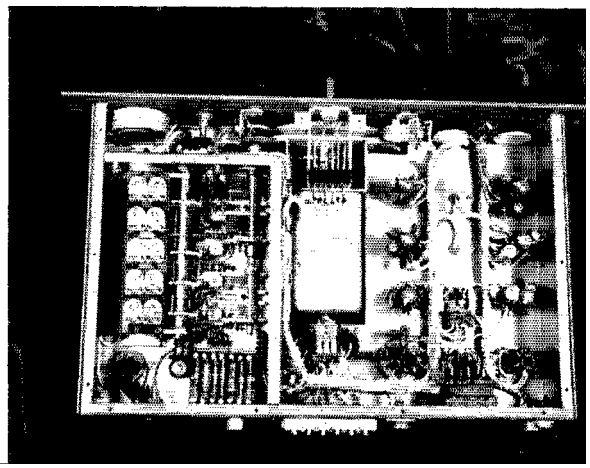
The complete station, pictured above, is built into a specially constructed desk top console, fabricated from stock angle iron and aluminum. The power supplies and modulator (the rear of which are pictured at the bottom of the next page) are attached behind the desk and may be serviced either through the desk's knee well or from the rear. The station operates on all phone and c.w. bands from 80 through 10 meters.

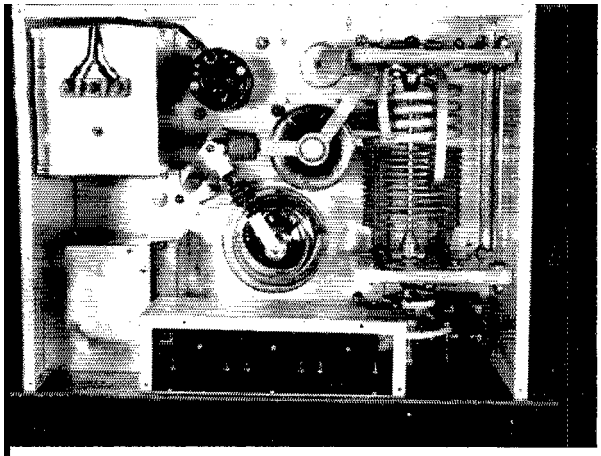
At the operating position, the 75A-2 is directly in the center of the layout, with the exciter to the left and the final at the right. Just below the exciter is a strip of control switches and fuses controlling the entire station and auxiliary functions, while directly below the final amplifier panel is a strip accommodating the electronic key, a Variac for controlling the p.a. high voltage, overload relay indicators and resets, and an a.c. outlet. On the second "deck" are a spare receiver, LM frequency meter, monitor scope, s.w.r. meter, running time meter, plate voltage meter, modulator plate meter, and local time clock. At the very top is a Navy type clock (normally kept on GMT) and a speaker. In other words, everything is right at his fingertips, making operating a pleasure.

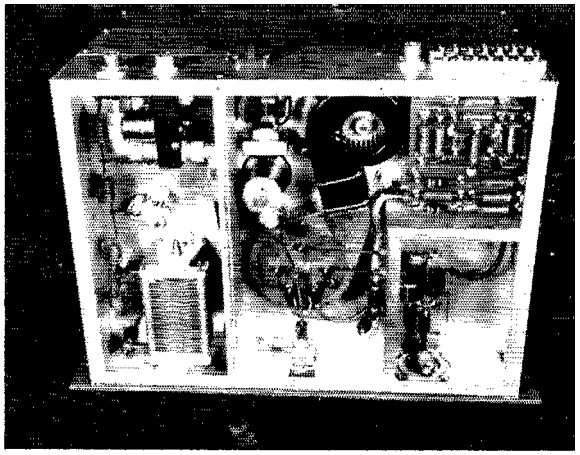
The Exciter

The r.f./audio exciter unit is a complete c.w./phone rig built around a Collins 70E8. It uses the p.t.o., with a 6AK6 buffer, band-switched and tracked 6AQ5 multipliers, and a 6146 in the output. Screen grid control is used to vary the output drive to the p.a. There is also included on the chassis a sidetone c.w. monitor. The audio gear includes a 6AN8 with two inputs, 12AU7, 6AL5 clippers, 6C4, and 6B4 drivers. The chassis is copper plated and Vector sockets were used to concentrate the components in each stage. Extensive use was also made of terminal boards and cabling in order to produce a neat lay-out. The meters are illuminated, and there is a special gear take-off from the p.t.o. shaft to the multiplier capacitor gang.





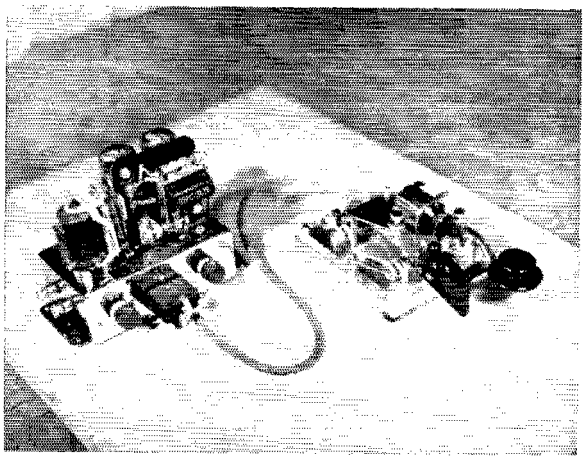




The Final

The final amplifier, pictured above, uses a single 4-400A with the customary air system socket, forced air cooling, and a vacuum-variable for the pi-network tank. The top view shows the shielded meter enclosure, the B&W inductor, and the other major components, while the underneath view again illustrates the use of terminal boards and neat layout. A low-pass filter is also included under the chassis, together with the antenna relay. No effort has been spared to de-TVI the rig. The main antenna is a multi-band beam of the W3DZZ type, homebuilt, on a 55′ tower. Separate antennas are available for 75 and 40 meters.

The individual antennas can be selected for use by means of push-button control at the operating position.



A further example of neat construction is this electronic key built by W7DET, patterned after the one described in *QST* by W6OWP. The keyer control head is a separate plug-in unit, of chrome-plated steel and plexiglas, and includes a straight key alongside the paddle. W7DET being a DX man, when not building new equipment (172 confirmed on c.w.), he finds the straight key a "must" under certain conditions. This key unit fits in the slot provided in the console panel for easy accessibility.

The modulator uses p.p. 100THs in Class B, with high level clipper and filter.

The modulator and the power supplies are mounted here behind the operating position, easily accessible for service yet not dangerously exposed. Here again, extensive use of cabling presents a neat appearance to even the most critical eye. Labelled terminal blocks used throughout the installation permit easy identification and tracing of circuits.

W7DET has a station of which he can well be proud. — *R. L. B.*