The modified FRG-7 and FRG-7000

At least two distributors of the Yaesu FRG-7 and FRG-7000, Radio West and Gilfer Associates, have been selling these receivers with various modifications. The digital displays meant for use with the FRG-7 are reviewed on p. 44 of this manual, and allow greater accuracy of readout when using the FRG-7.

Both companies sell a selectivity modified FRG-7 and FRG-7000 which improve the stock receiver a great deal. Radio West adds a steep-sided Collins mechanical filter (.375, 1.9, 2.9 or 3.6 kHz at -6 dB), as well as an additional IF amplifier to make up for the filter's loss. This circuit is constructed so that the ultimate rejection of the mechanical filter is not degraded. Users have found that the Collins filter does particularly well when receiving split frequencies 4 or 5 kHz from a domestic channel on MW, but that the HQ-180 has a slight edge in readability when tuning a split within one or two kHz of a domestic channel. It appears that the Gaussian IF curve of the HQ-180 can better handle strong sideband splatter than the Collins filter in the modified Yaesu receiver. The filter does a fine job of rejecting an interfering carrier off the side of its selectivity curve, and you can tune the receiver passband to within a couple of hundred Hertz of a domestic carrier without hearing a het. A notch filter is not necessary on this radio unless there are interfering carriers on either side of a desired signal within a couple of kilohertz. An impressive improvement overall.

One problem has been noticed with the Radio West modification which is due to the added IF amplification. If the volume control of the set is turned up too loud, there may be feedback through the speaker. Also, the already inaccurate S-meter of the FRG-7 tends to pin at an even lower signal strength than in the stock model. However, the added amplification does increase the set's useable sensitivity, though that's not too important on MW. Fast/slow AGC switching is also available. Radio West will retrofit used FRG-7's as well. If you know your way around circuit boards, then you can get a modification kit for your FRG-7 or FRG-7000 rather than sending your receiver in to them. Also available is a cheaper FRG-7 selectivity modification kit using a 4 kHz ceramic filter. Write Radio West for details of modification possibilities.

Unfortunately there have been no user reports from IRCA members on the Gilfer modifications, although a review appears at the back of the World Radio-TV Handbook 1980. Gilfer does not use mechanical filters in their FRG-7 selectivity modification; instead good quality ceramic ladder filters are used. These filters do not have the ultimate signal rejection (or higher price) of the Collins filters, but for MW listening, ceramic filters will probably be good enough in most situations. The reason: sideband splatter is the main interfering component of an objectionable signal and no amount of selectivity will reject splatter broadcast on top of a desired signal. Gilfer selectivity modifications are available using filters with a 4 kHz or 3 kHz (at -6 dB) bandwidth. According to one user, the 4 kHz filter is best for splits 5 kHz separated from domestic channels. Otherwise, domestic interference tends to cover splits less than 5 kHz from domestics. Again, a domestic with weaker sideband splatter may allow closer splits through. Also available is a two-selectivity FRG-7 with 4 kHz and 2.4 kHz IF filters. The modified FRG-7000 is available with this selectivity modification only. Other Gilfer changes include work on the AGC, AM detector and ANL to improve readability of marginal signals. Gilfer does not do modifications on used equipment, but according to WRTH 1980, they now sell their MOD-1 FRG-7 modification kit in the U.S. This includes a 4 kHz filter and AGC adjustment--experience with a soldering iron necessary. Write Gilfer for details.

Neither company's modifications improve the FRG-7 or 7000's signal handling ability on MW, nor will they give you the versatility of some of the older tube receivers, but they are a great improvement on a popular pair of receivers.

The McKay-Dymek DR-33C

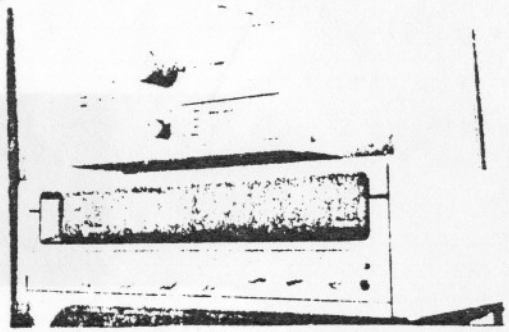
This receiver is of a very attractive design and wouldn't look out of place hooked into somebody's stereo system. It can be used as a serious DX machine, however. It is unorthodox in its tuning design: a large digital readout takes up much of the front panel and is controlled by a rotary switch underneath each digit. Each digit is switched into place except for the 1 kHz and .1 kHz digits which are controlled by a multi-turn fine tuning knob after the kHz digit is set to 0 or 5. It can be quite a convenient system once you get used to it and tunes from 50 kHz to 29.7 MHz. The DR-33C also has switches to select modes and selectivities; one that allows you to set up different front end configurations (omitting the RF stage, putting in a 2.5 MHz high pass filter, attenuation etc.); a volume control, and a noise limiter switch. It also has an IF output among other things on the back panel, but the front panel is quite simple.

Sensitivity is quoted at 1 microvolt above 300 kHz, using the RF amplifier. I don't have figures for it with the RF amplifier switched out. Selectivity includes 4 and 8 kHz IF filters (at -3 dB) which proved to be not too great for other than domestic DX, but there is a 2.5 kHz mechanical filter for AM which is nice (optional 400 Hz and 1200 Hz filters are available also). With this AM filter tuning is sharp in the manner of mechanical filters; in tight situations the stock sideband mechanical filter is very nice, but the readout is offset when you use this filter.

Although this uses a double balanced mixer in the front end, it is not advisable to use the RF stage while using an untuned antenna (we used the McKay-Dymek DA-100). There were no recognizable spurs, but there was a lot of noise which covered up weak signals; the lowly DX150A was able to hear these signals quite clearly using the same antenna. Switching in attenuation didn't seem to help, but running direct through the mixer did, though the DX150A was still cleaner on some signals. Ultimately we used a good passive preselector (the McKay-Dymek DP-40) for listening to the BCB on this radio and that seemed to clean up most of the garbage. It must be mentioned that we were listening in a high signal level urban area and that somebody in the suburbs or the country might find the DR33C giving a cleaner signal without preselection than we did. If you listen above 2.5 MHz, the high pass filter cleans up the potential BCB interference.

Audio quality is fine as befits something originally designed for hi-fi listening to broadcasts, although you might like a high pass audio filter to cut out the bassiest frequencies to avoid low hets. The S-meter works well, but the noise limiter is not effective on AM signals. The BFO can be used for spotting carriers, but the BFO offset must be taken into account when reading the frequency. There is a 5 kHz audio notch filter but this is intended for SW broadcast in the wide selectivity positions and can be ignored.

The DR-22 is a less complex and cheaper version of the DR33C. It has a fine tuning control but only indicates to the nearest 5 kHz. The 2.5 kHz AM filter is available as an option, I believe, but the CW and RTTY filters are not. The DR-55 seems to be the DR-22 without the LED display (just indicator knobs), and therefore cheaper still. The DR-44 appears to be the DR33C in rackmount. Write McKay-Dymek for more information on these receivers.



The McKay-Dymek DR-33C receiver and DP-40 preselector